



Deutscher Tropentag 2003
Göttingen, October 8-10, 2003

Conference on International Agricultural Research for Development

Assessing chances of success for State and NGOs in rural environment policy networks through quantitative network analysis - A typology of success factors

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Abstract

Development requires success and success requires political power. The aim of this analysis is to present a typology of factors that improve the chance of success (power development) for state- or NGO-actors during their policy-making in rural networks. The theoretical basis is the New Institutionalism and power theory. Policy networks are systems of interactions (cooperation or conflicts) expressed through exchange relations like trust, incentives, and information etc concerning specific policy issues. A general factors' typology is the result of organisational and quantitative network and statistical analysis based on data from 12 policy networks in 8 countries. Considering this typology, one can advise an actor to join a network or not. These factors are *actors'* and *network characteristics* combined. This typology includes 5 types: I) the "lawful" type: An actor with a multidisciplinary team that is lawful but not state-controlled has its optimal chance in „non-crowded" and mono-sectoral networks with intensive state contacts and low importance of state. II) The "trustworthy" type: A trustworthy actor with multidisciplinary team has its optimal chance in a "non-crowded" network with intensive state contacts and low importance of state. III) The "minor brother" type: An actor with powerful partners and alternative financing resources has its optimal chance in a mono-sectoral network with "equal chances" where many possible contacts are still unexplored. IV) The "omniscient" type: An actor who already holds power can impose its general and scientific information as "important" and control the distribution of general information in a network with no needs of resources. V) The "re-constructor" type: An actor who already holds power can impose its general and scientific information as "important" in a network with no scientific links, if this actor receives occasional general information from others and redistributes it.

1. Introduction

1.1 Questions and aims

In this work, we are interested in examining the development of power relations between organisations in rural environment networks. In order to achieve this, we will try to answer the following questions:

- a. Which could be an operational definition of power
- b. How we can measure the power
- c. Through which dependent variables we, as an actor, can predict our power before getting involved in a specific policy network

Obviously, an operational definition of power using practical terms of the policy arena is a prerequisite for measuring power through methods of empirical social research. And a measurement (quantification) of power is a prerequisite for detecting quantitative and reproducible relations of power through cross-sectional analysis like in this work.

On the basis of these quantitative relations, an optimisation of power factors becomes possible. Using our typology, which is a combination of organisational and network factors, we can advise an organisation:

“If you have the characteristics: a, b, c and d, then you can develop power and thus participate successfully in a network that is characterized by the features: 1, 2 and 3. Otherwise you have to change your own characteristics or search for another network.”

1.2 Expected practical added value: more accurate policy and organisational consulting

The practical orientation of this work is based on the classical axiom of the exchange power model (Markovski et al. 1988: 225 in YAMAGUCHI 1996): *an actor i must necessarily be more powerful than an actor j, the power relation of i to j should be equal or stronger than in any other possible relation in this network, if the actor i wants to seek an exchange relation (cooperation or conflict) to the actor j.* This normative axiom (“must”) has its roots in the power definition of Weber (power is the chance to impose a will even against the will of the opponents).

Predicting power before joining a network, an actor (a syndicate of employers or employees, a union of land owners, a federation of industries or rural enterprises, or a group of environmental activists) can avoid a useless conflict with a more powerful actor.

1.3 Theoretical background

We are going to argue that power depends on certain organisational characteristics (e.g. multidisciplinary, financing resources) and certain network characteristics (like oligarchy, role of scientific information etc). This is derived from the assumptions of New Institutionalism. The New Institutionalists try to examine both the individual characteristics of an actor and the external conditions under which this actor operates in order to assess the power that it can develop and thereby the policy impact: who makes the decision (cf. BLOM-HANSEN 1997).

The Theory of Organised Interests has suggested many internal potentials (expertise, financing resources etc) (like KROTT 2001, ALEMANN 1996, RUDZIO 1996, STRAUCH 1993, COLEMANN 1986, OSTROM 1999, SCHUBERT 1989, CUBBAGE et al. 1993) that make an organisation powerful but does not say under which conditions (in which network) the organisation could optimally use these potentials. These are means (e.g. expertise or influential contacts) that are valuable for achieving an aim, so the actors which do not have them at their disposal depend on these which have them. Additionally, there are potentials that help an organisation survive in a dynamic environment (like financing resources).

The network theory has suggested a plenty of dimensions and indicators for describing a network (pluralism, corporatism etc) (s. DOWDING 1994, KLINS 2000, HOBBERG 2001, MARCH/ OLSEN 1996, WEAVER/ ROCKMAN 1993, EASTHOPE 1974, RHODES et al. 1996, JORDAN/ SCHUBERT 1992, ATKINSON/ COLEMAN 1989, WAARDEN 1992, BORZEL 1998, MAYNTZ 1991, PETERSON 1994, HENNING/ WALD 2000). These dimensions are power relations between state and private actors, number of participants, trans-sectorality etc. However, these should be further specified and their relation to power should be examined.

2. Methodology

2.1 Complete network analysis

The variables have been measured using complete quantitative analysis (KNOKE/ KUKLINSKI 1982) of 12 issue networks in 8 countries, through a survey that has taken place during the year 2002. The variables have been operationalised on the basis of expert interviews (September 2001-March 2002) and measured by means of standardised telephonic inquiries and document analysis (April 2002-December 2002). The interviewees were general secretaries, directors, experienced lobbyists, chairpersons and campaign officers so as to improve the access to relevant information. These networks included 234 actors (cases), which have been analysed through the cross-sectional method regarding 108 variables (234*108). The variables have been analysed through *cross-sectional design*. Qualitative explanations based on Theory of Organised Interests and Power Theory, are necessary because the cross-sectional method does not distinguish real causality (internal validity) from spurious causality between variables (BRYMAN 2001).

In each network, only the first contacted actor has been selected by the surveyors. The initial question was “please mention an environmental issue of the last 2 years, where you were successful”. And the next question was “please name all actors that you have contacted in the framework of this issue”. Afterwards, we contacted and interviewed these actors, and they in turn pointed us at new actors with which they had contact in the framework of the same issue. In this way, with successive referring and contacting (snowball sampling) we have opened up the whole network in each issue. The technique of stepwise regression has been used in order to extract the optimal combinations (five power factor types).

2.2 Definition and operationalisation of power

The power (P) of each actor has been measured as a summa of the *trust*, *the incentive* and *the irreplaceability* (recognition) that an actor gains from the others. The power was first measured in a 5-level scale (P=1 to 5) where 1 means no trust, incentive and irreplaceability at all and 5 total trust, incentive giving and irreplaceability. An actor which can gain trust, gives incentives (e.g. a sponsorship) or is irreplaceable in a procedure (e.g. when it is an important contact person) can impose its own will (ETZIONI 1975, cf. POPITZ 1992).

Afterwards the power was converted into percentage variable (%) using special software for quantitative network analysis “visone” (s. BAUR et al. 2002). This software employs vector algebra (matrix multiplication) and other algorithms. The “importance” (image) and control of general and scientific information has been separately measured. In figure 1, we can see the visualisation of a selected network concerning an issue of natural resources management and conservation.

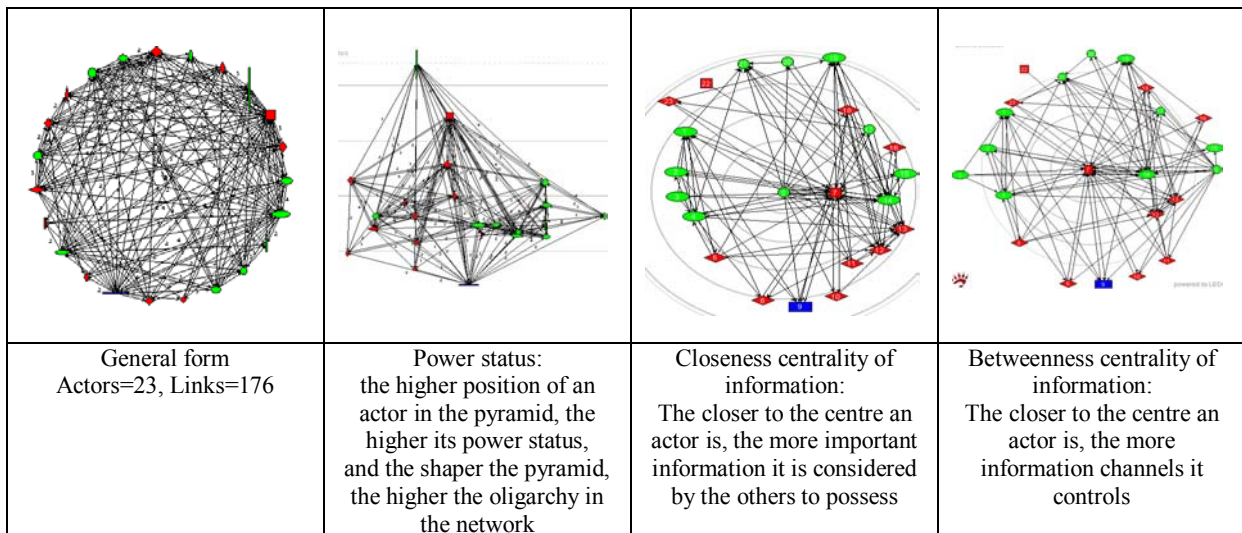


Figure 1: Example of network visualisation

The practical meaning of power status is that if actor X gains power from actor Y, actor Y from actor O and actor O from actor J, then the actor X gains indirectly power from the actors Y, O and J. In so far, actor X presents a certain specialization in this kind of exchange (in this case, an aptness in concentrating trust, incentive or irreplaceability recognition). Through this dependence chain, the actor X can lead all the others. In other words, the (power) status of each actor expresses its position in the formal or informal hierarchy that is generated in the network through this power exchange.

3. Results and discussion

3.1 The “lawful” type

An actor with a multidisciplinary team that is lawful but not state-controlled has its optimal chance in „non-crowded“ and mono-sectoral networks with intensive state contacts and low importance of state.

	Standardised coefficients	P
(Constant)		,000
Organisational factors		
Multidisciplinarity	,284	,000
Radicalism	-,261	,001
State character	-,203	,006
Network factors		
Actors	-,427	,000
Potential lobbying	,394	,000
Relative importance of state	-,296	,000
Intersectorality	-,243	,009

Dependent Variable: POWER

Table 1: The “lawful” type

3.1.1 Analysis of factors

SIMON (1949) regards the expertise as a very important function of power developing. The specialisation is recognised by him as an important factor for organisational efficiency. The expertise of an organisation consists of policy-relevant knowledge (law, technical knowledge, ecology etc) that makes an organisation able to critically consider the suggestions of the state or

private actors and thereby capable of defending itself against a “blind” trust towards them. The *multidisciplinarity* is the operational form of expertise that has proved relevant to power in this analysis.

An “innovative” argumentation, which is based on flexible selection of favourable scientific information, is required in order to effectively foster new processes or to defend established ones against possible policy changes induced by new inter-sectoral issues. And such a flexible selection can only be achieved by a multidisciplinary team that steadily observes every new challenging issue emerging through new spill over effects (like for example the multifarious criteria of the “sustainability” in Agenda 21).

As the state institutions at national level normally possess adequate expertise, the role of private expertise can then be strong enough only in a network where the relative importance of the state in comparison to private sector is at any rate low, so that the state cannot intervene with its own expertise. The multidisciplinary can also highlight the role of an actor in a mono-sectoral network, because there, a multidisciplinary argumentation looks more “innovative” and “objective”. Simultaneously, the plenty of lobbying possibilities make this multidisciplinary argumentation easier to be disseminated in the political-administrative system. Furthermore, an organisation with multidisciplinary arguments has also better chances in network with a few actors, because then it has fewer partners to persuade of its “innovative” character and the argumentation become simpler for the multidisciplinary team.

Apart from the multidisciplinary, the administrative and legal independence from the state is a further potential. A private organisation can be officially controlled by the state, if it has *state representatives* in its decision organs or its existence is provided by a state law. The organisation penetrates in the political-administrative system and so its behaviour is influenced strongly by the state. Additionally, not only its behaviour is influenced but its structure as well. This means more complexity both for the state and the organisation and the policy outcomes are then more uncertain (LUHMANN 1987, p.290-2). However, this uncertainty seems rather to negatively affect the organisation than the state.

An illustrative example is the chambers of agriculture in certain countries. A chamber of agriculture may have such a state character and is often characterized as a “public institution with official right of self-administration” (KROTT 2001, p. 71). At first view, it may be regarded as a key institution for the effective participation of private actors (land and forest owners and farmers unions, wood industry federations or possibly workers syndicates) in state policy-making. However, it should rather be regarded as a state-controlled corporate organ of private organisations. (If it is officially a legal person of “public” or “private” right, does not play any role in the state control.)

The negative impact of the state control is rather tangible in networks with many lobbying chances which remain unused because of the state control. So, the other private actors which remain state-independent can use these chances.

The “lawfulness” (*system conformity*) is here defined as the opposite of radicalism. If an actor uses every possible means that are regarded by all society members as “peaceful” and “legitimate”, then this is a system-conform actor. The system conformity excludes any implementation of means, which are subversive to official or unofficial institutions (sabotage of a pipeline, market embargo, road blocking etc). One can expect that the system conformity fosters the power development in every political arena. However, it would not be an unreasonable argument that the system conformity is especially important in a network with few actors and sectors, because under these conditions, radical actions become known much more rapidly and characterised as “unsociable” behaviour.

3.2 The “trustworthy” type

A trustworthy actor with multidisciplinary team has its optimal chance in a “non-crowded” network with intensive state contacts and low importance of state.

	Standardised coefficients	P
(Constant)		,301
Organisational factors		
Trustworthiness	,281	,000
Multidisciplinarity	,199	,007
Network factors		
Actors	-,566	,000
Potential lobbying	,322	,000
Relative importance of state	-,184	,015

Dependent Variable: POWER

Table 2: The “trustworthy” type

3.2.1 Analysis of factors

The *trustworthiness* strengthens the power status. The trustworthiness has been described by BUSKENS (1999) as a property honoured by trust when it takes place. In other words, BUSKENS has already distinguished trust from trustworthiness regarding the latter as a basis for trust. The substantive difference lies in the fact, that the trustworthiness is only a subjective impression or feeling. In other words the public opinion of the actors, which contact the particular organisation, is trustworthiness. The trust is however not a subjective impression but an objective action: when an organisation lets others make a decision for itself. The power and the hierarchy (status) that come about through this action and thereby the satisfaction of interests, are an unambiguous political reality and not subjective at all.

The trustworthiness can be honoured with trust only under specific conditions. Like in the case of lawfulness, it would not be an unreasonable argument that the trustworthiness seems to be especially important in a network with few actors, because then, the untrustworthiness becomes known much more rapidly and emphasized as “unsociable” behaviour. The numerous lobbying chances can also play a positive role in the utilization and wider advertising of a trustworthy image.

The role of the *multidisciplinarity* and its specific meaning under conditions of many lobbying possibilities, few actors and low state importance has already been analysed. The multidisciplinarity can also achieve a power synergy with the trustworthiness as it can easier become plausible.

3.3 The “minor brother” type

An actor with powerful partners and alternative financing resources has its optimal chance in a mono-sectoral network with “equal chances” where many possible contacts are still unexplored.

	Standardised coefficients	P
(Constant)		,000
Organisational factors		
Partner Strength	,424	,000
Financing Resources	,227	,005
Network Factors		
Oligarchy	-,484	,000
Intersectorality	-,323	,011
Density	-,312	,000

Dependent Variable: POWER

Table 3: The “minor brother” type

3.3.1 Analysis of factors

The development of positive relations to and the cooperation with *powerful partners* of compatible interests that lead up to building of official or unofficial coalitions, are of decisive importance to the power status of an actor (SCHUBERT 1989). However, the powerful partners “share” more willingly their power with other actors only in network with low oligarchy. Otherwise every actor tries to concentrate power for improving its own position, and is not so willing to make coalitions with other powerless organisations.

Another network condition that impedes an organisation from making powerful “friends” is the high intersectorality. The more heterogeneous and foreign sectors are involved the less familiar an organisation is to the other actors. Under these conditions, the more powerful actors have the luxury to search and chose for a more advantageous actor as a partner from a wide range of sectors (industry, financing, culture, tourism etc), while a “minor brother” remains dependent on his powerful partner and has less opportunity to become directly involved in other sectors.

The *financing resources* are decisive for the existence of an organisation and its influence on other actors. A wealthy organisation can support policies or other actors with financial help and so acquire new powerful partners too (KROTT 2001, p.74-75).

Although the financing resources are generally considered to be meaningful for the power of an organisation, they do not appear as a power relevant factor in every type. They need to be combined with certain conditions, in order to achieve a power synergy. The first condition is to use financing in order to attract new strong partners. The second one is a low density (many unexplored contact points); in a network with many unexplored contact points, a rich organisation can more easily gain the power monopoly on the others by promising financial support.

3.4 The “omniscient” type

An actor who already holds power can impose its general and scientific information as “important” and control the distribution of general information in a network with no needs of resources.

	Standardised coefficients	P
(Constant)		,000
Organisational factors		
“Importance” of general information	,457	,000
“Importance” of scientific information	,203	,000
Control of general information	,133	,004
Network factors		
Relative density of commitment	-,220	,000

Dependent Variable: POWER

Table 4: The “omniscient” type

3.4.1 Analysis of factors

“*Important*” information is imposed by the powerful actor to the others and does not constitute an objective entity that produces power (SIMON 1949). This ascertainment applies both to general information and to more specialised “scientific” information. According to our results, the more powerful an actor is, the more “important” information it distributes. Thus, it is first the power that appears and afterwards the information “importance”.

Practically, the powerful actor *controls* the information channels by imposing desired information as “important”. So, the powerful actor is able to concentrate the attention of the others only on its own argumentation, taking it away from other possible antagonistic alternatives that are suggested by other actors within the network. In this way, the powerful actor drastically improves the chance of finding acceptance by the others.

The relative density of commitment (percentage of incentive exchange relations to the whole relations) makes a negative impact on the power development. This takes place because an economic incentive exchanged in specific form and time (balanced exchange) is a stronger motive for cooperation than a promised favour (generalised exchange).

3.5 The “re-constructor” type

An actor who already holds power can impose its general and scientific information as “important” in a network with no scientific links, if this actor receives occasional general information from others and redistributes it.

	Standardised coefficients	P
(Constant)		,000
Organisational factors		
“Importance” of general information	,478	,000
Reception of general information	,175	,000
“Importance” of scientific information	,238	,000
Network factors		
Scientific communication links	-,194	,000

Dependent Variable: POWER

Table 5: The “re-constructor” type

3.5.1 Analysis of factors

The function of the “*importance*” of *general information* has already been discussed in the “omniscient” type. The only difference in the “re-constructor” type is that the network factor impeding the positive impact of the “importance” is not the commitment but the high number of the scientific communication links; it is expected that “science” impedes the development of a trust-based general information image because science means control and control is the antipode of trust (VOGT 1997).

The function of the “*importance*” of *scientific information* seems to be similar to the general information importance. In the case of the “re-constructor”, we could additionally remark that the scientific image of each individual actor is impeded by the general presence of scientific information within the network. Many scientific links and contacts automatically mean the existence of a large variety of scientific sources and alternatives within the network. In this way, it is for an actor much more difficult to be recognised as an “eminent scientist” within the network.

The *reception of general information* is the characteristic organisational factor of the “re-constructor” type; a “re-constructor” receives current information from the other actors of the network. This information is expected to be illuminative on strengths, weaknesses and interests of other participants.

The reception of information does **not** substitute here the information control of the “omniscient” type; the powerful “re-constructor” does not necessarily control the general communication, but can most effectively receive actual information from the others that allows strengthening the construction of “important” information which should be relevant to the specific policy issue and interesting to the other participants. In this way, the “re-constructor” tries to *persuade* them. Simultaneously, the powerful receiver *defends* itself against being persuaded and misled by others. Namely, it *evaluates* the received information (it extracts from this more or different conclusions than what just the senders expect) (GILL 1994, p.173). From this point of view, the “re-constructor” type seems to possess the most dialectic and uncertain power position of any other of the five types.

This relevance of the disseminated “important” information to the specific policy issue is a necessary prerequisite in order to be regarded as “important” by the others in networks with relatively “innovative” (non trivial) issues. Or in other words, one could expect that receiving actual, occasional information is rather important to power development in networks where the actors are relatively inexperienced (cf. POWELL 1990, p.322).

At this point, we also should clarify that the information receiving does not break the proverb - and the SIMONS hypothesis- that “the powerful actor does not need to learn”; the powerful actor may here receive information not passively as a “good apprentice” but rather selects and reconstructs it critically so as to manipulate the communication to its own advantages.

4. Conclusions

We have defined power as a 3-dimensional relation: trust, incentives and irreplaceability. An actor who gains trust from, give incentives to or is irreplaceable for the others, can exert power on them. Not everyone can be powerful everywhere; There are certain actor characteristics (multidisciplinarity, financing resources, system conformity etc) that make optimal synergy with certain network characteristics (actors number, intersectorality, oligarchy etc). A typology of five optimal combinations has been developed.

We have suggested an operational form of New Institutionalism: power assessment through combined consideration of network and actor characteristics. This may lead to a more accurate policy consulting. However, the typology discussed in this paper is only a first step and remains open to further improvements; the most obvious challenge for a further research is to enlarge the empirical sample and to examine new variables which should be relevant to power development. A second improvement would be to strengthen the randomness of the samples. The complete network analysis (snowball sampling) is not considered to be a random sampling in the statistics because of the self-selection. Namely the sample depends on the decision of the selected actors and interactions within the network. The non-randomness makes the employment of statistical tests and regression disputable. The impact of self-selection could be estimated by the 2-step method of HECKMAN (ROYAL SWEDISH ACADEMY OF SCIENCES 2000) in future research. The role of the subjectivity of the surveyors in the snowball sampling is an additional factor that may influence the results. The surveyor may select a big umbrella organisation as initial actor so as to improve the networking capacity and increase the size of the network. The initial actor may also be selected quite randomly (e.g. out of a list). However, the composition of a particular issue network will be the same, independent of the selection way of the initial actor. Certain advantages of the complete network analysis are the detection of latent hierarchies between the actors and the disclosure of all actors involved (bounding). Finally, the old dyadic model of power (leader-follower) was not operational for policy analysis because in a network the power position of an actor is determined by multifarious interactions between several actors. The depiction of the whole interactions and the assessment of their impact is feasible with the complete network analysis.

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