

Zeitschrift: Schweizerische Zeitschrift für Forstwesen = Swiss forestry journal = Journal forestier suisse

Herausgeber: Schweizerischer Forstverein

Band: 157 (2006)

Heft: 10

Artikel: Identification and structuration of stakeholders : important steps in a participative process for a large project? Case study : the third Rhône correction project (R3) in Switzerland

Autor: Luyet ,Vincent / Schlaepfer, Rodolphe / Iorgulescu, Ion

DOI: <https://doi.org/10.5169/seals-1098011>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 11.04.2026

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

Identification and structuration of stakeholders: important steps in a participative process for a large project? Case study: the Third Rhône Correction Project (R3) in Switzerland (reviewed paper)

VINCENT LUYET, RODOLPHE SCHLAEPFER and ION IORGULESCU

Keywords: Natural resources management; participation; decision making; stakeholder; clustering; Switzerland. FDK 624 : 91 : (494)

Abstract: Im Aufsatz wird eine Methode vorgeschlagen, um Stakeholder zu bestimmen, sie in gleichmässig zusammengesetzte Gruppen zu unterteilen und ihnen einen bestimmten Grad von Mitwirkung zu übertragen. Verfahren werden entwickelt, angepasst und geprüft, um diese Methode praxistauglich anzuwenden.

Abstract: The main contributions of this paper are to propose a method to identify stakeholders, to regroup them into homogenous groups and then to assign to these groups a specific stakeholder involvement. Techniques are adapted, developed and tested to concretely apply this method.

Introduction

«Participation» is a principle for both sustainable development and ecosystem management (CHRISTENSEN *et al.* 1996). In recent decades there has been an increasing interest in participation concerning the natural resources management. Two reasons could explain this:

- the implementation of international agreements, such as those of the Earth Summit in Rio (1992), the Aarhus' convention or the new European water framework directive (UE 2000);
- the advantages of the participation, for example, a better understanding of the project and the integration of the different stakeholders' interests (IRVIN & STANSBURY 2004).

From the available definitions of participation (e.g. PALETTO 2002; FAO 2000; OECD 2001), we chose that of the WORLD BANK (1996): «it is a process through which stakeholders influence and share control over development initiatives and the decision and resources which affect them». GRIMBLE & WELLARD (1997) define stakeholders as: «any group of people organized or unorganized, who share a common interest or stake in a particular issue or system». With such a definition, the public is considered as one stakeholder. The main conditions of success for participation have been identified as the establishment of rules in advance, the presence of experienced moderators and the willingness of the stakeholders to commit to a group process (SABATIER *et al.* 2005; HARMONICOP 2004; LEACH & PELKEY 2001; SCHLAEPFER 1997; RENN *et al.* 1995). There are different levels of participation, especially with regard to information, consultation, concertation, codecision and delegation (IAP2 2005; VROOM 2003; HARMONICOP 2004; ARNSTEIN 1969).

Nowadays, despite the official recognition of participation, its requirements are not widely implemented (LUYET *et al.* 2005; MOSTERT 2003). This can be explained, at least in part, by the difficulty of knowing who should participate, how and when. Generally, existing approaches are not able to take into account the variability and heterogeneity of stakeholders and the complexity of a decision making process (CHESS & PURCELL 1999). Participation should not be reduced to information and workshops (ROWE *et al.* 2004; CHESS & PURCELL 1999).

In our view, for large projects a program of participation consisting of several levels of stakeholder involvement and several participative techniques should be used, as proposed by CHESS & PURCELL (1999). To implement such a program,

stakeholders have to be identified, structured, and a level of involvement attributed (LUYET 2005).

Several criteria already proposed in the literature could be used to structure stakeholders: stakeholders' attitude towards a project (BANVILLE *et al.* 1998), potential conflicts and coalitions between stakeholders and stakeholders' objectives (FOTTLER *et al.* 1989), stakeholders' links in the network (VAN WAARDEN 1992) stakeholders' resources (CROZIER & FRIEDBERG 1977; LAUMANN & KNOCKE 1987), political influence (LAUMANN & KNOCKE 1987), degree of implication (ELLIOT & SCHLAEPFER 2001) and power (ELLIOT 1999). However, no systematic approach yet exists to include all these criteria in the establishment of the stakeholder involvement.

Our approach structures stakeholders into homogenous groups using the technique of cluster analysis based on the above-mentioned criteria. As a second step, we applied a normative model to attribute to each stakeholder group a specific stakeholder involvement.

Normative models can identify a degree of stakeholders' involvement for a given project. VROOM (2003, 2000) and DANIELS *et al.* (1996) proposed different normative models. These two normative models are the result of about 30 years of development and application and have been traditionally applied to the public (VROOM 2003, 2000; DANIELS *et al.* 1996; SAMPLE 1993; VROOM & YETTON 1973). As these models were traditionally applied, neither Vroom's model nor that of Daniels *et al.* allows, in principle, to attribute different levels of stakeholder involvement for the same project. In this paper, we applied a normative model to each stakeholder group in order to be able to take the variability and the heterogeneity of the stakeholders into account.

Consequently, the aims of this paper are: i) to propose a method to identify and structure stakeholders into homogenous groups, ii) to propose a method to identify a target level of involvement for the stakeholder groups and iii) to apply and discuss this method to a large project in Switzerland.

Case study

Participative decision-making in the Swiss and Valais context

Switzerland is a confederate state composed of 26 cantons that have a large range of competencies within the general framework of federal laws. Each canton comprises communes

(municipalities) that have large autonomies. The Swiss political system is based on direct democracy, and consensus building traditionally plays an important role at several levels. Consultation between different administration services is routine in Switzerland (TANQUEREL 1988). At present, however, participation with non-administrative stakeholders is not habitual with the Swiss administration.

They cantonal authorities decided to elaborate the Third Rhône Correction Project (R3) and submitted it to federal authorities. They decided to finance up to 65 % of the cost and delegated the execution of the R3 project to the cantonal governments and the communes. Consequently, representatives from different federal offices are stakeholders taking part in the decision-making process at the cantonal level. The Rhone River belongs to the canton, while the surrounding areas, including tributaries, belong to communes or private owners. The R3 project not only includes the river, but also a significant part of the valley. Therefore it has to be considered not only as a water management project but also as a land use management project. The difficulty for the decision-making process is to integrate these levels.

Description of the R3 project

The R3 project is an important environmental project. It involves 160 kilometres stretch of the river Rhône that runs through Canton Valais and a significant part of its valley and will cost € 0.6–1.0 billion over a period of about 30 years. The R3 Project has three main objectives: to ensure the flood protection of the Rhône plain and to enhance the river's environmental and socio-economic functions (CANTON DU VALAIS 2000, 2005). The general concept of the R3 project was approved by the cantonal government in 2000. Generic technical solutions that can integrate these three objectives have already been studied: (i) reinforcement of the existing levees, (ii) enlargement of the distance between the levees and (iii) creation of a second parallel flood channel. The localization and the size of the technical solutions has yet to be carried out and will depend on the requirements of the stakeholders who will be part of the problem framing. The land use changes (e.g. conversion of agricultural land for the project's needs) are particularly sensitive issues and an adequate participation program is therefore essential to the success of the R3 project, which, at the time of writing, is in its design phase.

Study area and processes studied

In this contribution, we consider two levels: cantonal and regional. For each of them, we investigate an initial step of the decision process within the overall R3 project: 1) selection of stakeholders' objectives for landscape development at cantonal level, and 2) selection of stakeholders' objectives for landscape development at regional level. The Valais canton virtually coincides with the upper Rhone basin. Valais covers 5200 km² with approximately 280000 inhabitants. The Valais is divided into several regions, each comprising a number of municipalities. The chosen regional study area is located in the Rhone's plain, between the cities of Sion and Sierre on the territories of five municipalities. The area covers 14 km². Its land use is classified as follows: 32 % urban, 46 % agricultural, 15 % natural landscape and 7 % of forest, with approximately 8000 inhabitants (figure 1).

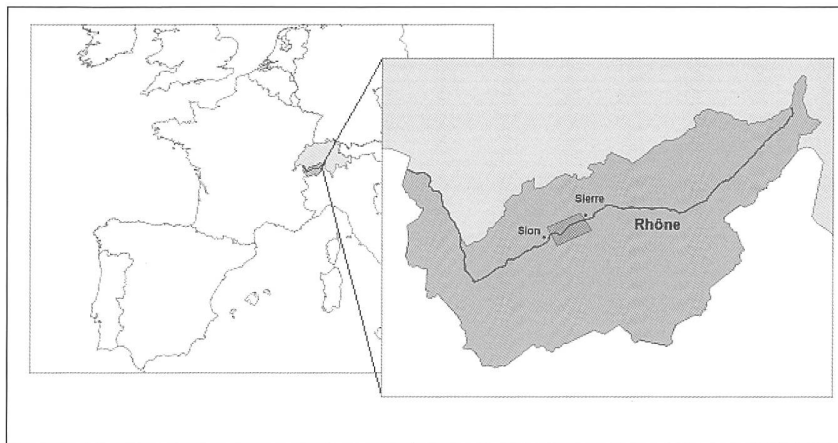


Figure 1: Localization of the cantonal and regional study area.

Method

The proposed methodology for determining the target stakeholder involvement consists in: stakeholders' identification and characterization, grouping the stakeholders into homogenous groups and determining their levels of involvement.

Stakeholders' identification

Stakeholders were identified with the Mason and Mitroff's technique (MASON & MITROFF 1981). It identifies stakeholders by a set of complementary and sometimes overlapping procedures (defined in table 1). For each procedure¹, a partial stakeholder list can be made by answering the procedure's question. In this contribution, following a suggestion taken from BANVILLE *et al.* (1998), we do not consider the demographic procedure because it was not considered relevant in the context of the R3 project. Because of no procedure takes an interest in the impact or the effects of a project; we have added a new one – the consequential.

Three experts were asked to answer the procedure's questions. The experts were chosen according to their knowledge about the project context and their field of work. By combining their answers, a final listing of stakeholders can be established.

Table 1: Procedures' definition (inspired by MASON & MITROFF 1981).

Procedure's name	Question used for the identification
Imperative	Who has revealed an interest in the situation at hand?
Positional	Who has an interest by virtue of the position they occupy?
Reputational	Who can be nominated by others based on their reputation and their interest for the project?
Social participation	Who overtly participates in activities related to the issue considered?
Opinion leadership	Who is not part of the formal structure but could nevertheless shape the opinions of the other stakeholders?
Organizational	Who has an important relationship with the organizational unit (project, situation)?
Consequential	Who has or will be affected by impacts of the present or future project?

¹ Established form or method for identifying stakeholders (MASON & MITROFF 1981).

		→								
		Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7		
Problem statement	H			H	-	-	-	-	Decide	
				L	H	H	H	H	Delegate	
					L	L	L	L	Consult in group	
	H	L		H	H	H	H	H	Facilitate	
					L	L	L	L	Consult individually	
					L	H	H	H	H	Facilitate
	L	L			L	H	L	L	Consult in group	
					H	-	-	-	-	Decide
					L	-	-	-	-	Facilitate
	L	H		L	-	H	H	L	Consult individually	
					L	-	-	-	-	Decide
					H	-	-	-	-	Delegate
	L	L			L	-	-	L	Facilitate	
					-	-	-	-	-	Decide
					-	-	-	-	-	Decide

Figure 2: Time driven Vroom's model (adapted from Vroom 2003; H = high, L = low).

Stakeholders' characterization

From the list mentioned in the introduction and because of the earlier stage of the R3 project, we selected three criteria that seemed adequate for our needs: stakeholders' resources, political influence of the stakeholders and the degree of stakeholders' implication.

This evaluation should be done by experts. In our case, six experts were asked to evaluate each criterion for each stakeholder by means of a survey with a questionnaire. Three of them had no trouble identifying the stakeholders. If a stakeholder was unknown to the expert, he was told not to do the evaluation. The experts were chosen according to their knowledge of the cantonal and regional context and their field of work. The numerical scale of 1 to 5 was adopted for the criteria «resources», «degree of implication» and «political influence». A stakeholder who got a one for all three criteria has very significant resources, is extremely involved and enjoys a very high level of political influence.

The variability of the results, the correlations between the three criteria and between the six experts were studied. These correlations were applied to ordinal scale data. The level of significance used is 5%.

Stakeholder grouping

To structure the stakeholders into groups, a cluster analysis was carried out on the experts' mean of the three criteria «resources», «degree of implication» and «political influence» using the «S-Plus» divisive hierarchical clustering function. To facilitate the representation and the consistency of the results, we separated the cantonal and regional stakeholders. Cluster analysis involves the search for groups (clusters) in the data, whereby objects belonging to the same cluster resemble each other, while objects in different clusters are dissimilar. The hierarchical algorithms used in our study proceed by dividing existing groups, producing a hierarchical structure and displaying the order in which the groups are divided. Divisive methods start with all observations (e.g. stakeholders) in a single group and proceed until each observation is in a separate group. The Euclidean distance was used as a separate criterion. The hierarchical tree is a typical result of clustering; it indicates the order in which groups were split. For more detailed information about these techniques, see KAUFMAN & ROUSEEUW (1990). One difficulty

of the clustering is to know where to stop and how many clusters to consider. GAP statistics enable us to answer to these questions (HASTIE *et al.* 2001). They provide a good indicator of the statistically relevant number of clusters. GAP statistics can, however, be useful in decision-making problems by providing a context knowledge validation.

Determining the level of stakeholder involvement

Luyet's study (LUYET 2005) suggests that applying the time driven Vroom's model (VROOM 2003) to identify a degree of stakeholder involvement appears to offer the most relevant approach in this context. The Vroom's model considers five levels of stakeholder involvement: decide (the project leaders make the decision alone, without stakeholders involvement), consult individually (the project leaders present the problem to stakeholders individually, collect their suggestions and then make the decision), consult in group (the project leaders present the problem to stakeholder group members, get their suggestions and then make the decision), facilitate (the project leaders share the problem with the assembled stakeholders and together they attempt to reach agreement on solution) and delegation (the project leaders delegate the project's elaboration to the stakeholders). This model was applied to the stakeholder groups. The functioning of this model is the following: seven questions are asked sequentially. Each of these questions involves a high/low response. Figure 2 shows the Vroom's model. We have to read it from left to right (from question 1 to 7). To answer these questions we returned to the three experts who had originally identified the stakeholders. The experts had to answer the seven questions for each stakeholder group. The answers provided a way to identify the degree of stakeholder involvement. The questions that deal with quality and acceptability of the decision and are:

- 1) The significance of the decision to the success of the project or organization.
- 2) The importance of the stakeholders' commitment to the decision.
- 3) The project leader's knowledge or expertise relating to this problem.
- 4) The likelihood that the stakeholder would commit him or herself to a decision that you might make on your own.

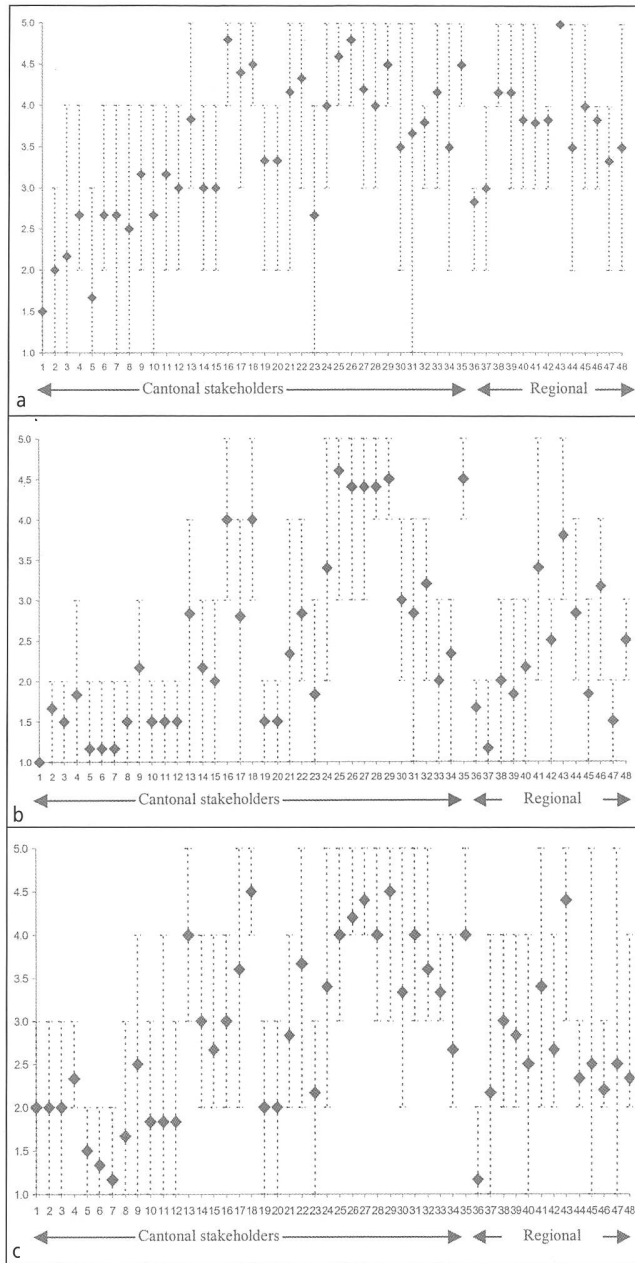


Figure 3: Mean, min and max for a) resource, b) degree of implication and c) political influence based on the 6 experts assessment (n = 6).

- 5) The degree to which the stakeholders support the organization's objectives at stake in the problem.
- 6) Stakeholders' knowledge or expertise in relation to this problem.
- 7) The ability of stakeholders to work together in solving problems.

Results

The adaptation of the Mason and Mitroff technique allowed us to identify 49 stakeholders, 36 at cantonal level (numbers 1 to 36) and 13 at regional level (numbers 37 to 49). *Figure 3* shows the results of the experts' assessment for each stakeholder and each criterion. According to the expert's assessment, it appears that the administrative stakeholders (numbers: 1 to 15, 37 and 38) and the environmental stakeholders (numbers: 20, 21 and 48) have more resources, a higher degree of implication and political influence than the other stakeholders.

The correlations between the three criteria (stakeholders' resources, political influence and degree of implication) are high (between 0.73 and 0.79) and always positive. Consequently, when a stakeholder has significant resources, their degree of implication and political influence are usually also important. Almost all the correlations between the 6 experts are positive and low and vary between 0.2 and 0.5. That means there is no unique point of view from the 6 experts and it is very important to consider several experts. *Table 2* shows criteria's mean and their coefficient of variation for each expert. It appears that expert 4 is more «optimistic» than the others because he assigns the lowest evaluation to the stakeholders. On the other hand, expert 5 can be considered as the most «pessimistic». The dispersion of the experts' evaluations illustrates the high level of variability in the results. Therefore, we can say that experts assess the stakeholders differently. This may also be explained by the fact that the R3 project is still at an early stage.

Table 2: Experts mean and coefficient of variation for each criteria (n = 49).

	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6
Resource's mean	3.6	3.5	3.6	2.5	4.2	3.4
Coefficient of variation in %	23	31	31	48	24	24
Degree of implication's mean	2.5	2.9	2.6	1.8	2.9	2.1
Coefficient of variation in %	48	41	50	61	48	52
Political influence's mean	2.4	2.7	2.8	2.5	3.6	2.7
Coefficient of variation in %	46	37	54	52	33	33

The GAP statistics identify the optimal number of clusters as being equal to three for both decision problems. This result seems to be relevant according to our context knowledge. *Figures 4* and *5* illustrate the clustering analysis at both cantonal and regional levels. At cantonal level, the first group (C1) includes all federal offices and almost all cantonal offices, the environmental associations, tourism association and the potential future riverbank owners' association. In total, 19 stakeholders belong to this group. The second group (C2) is composed of the cantonal office for education and some economic, tourism and agricultural associations. 8 stakeholders (camping association, schools and agricultural associations) compose the last group (C3).

At the regional level, the first group (R1) represents the municipalities, the region and the environmental association. 8 stakeholders (future citizens, agricultural, development, tourism and fishing associations, landowners and the public) compose the second group (R2). Local industries and sport association belong to the last regional group (R3).

Table 3 shows the experts' answers for the Vroom's model question for each stakeholder group. Using the Vroom's model, we identified the following level of stakeholder involvement: facilitate for C1 and R1 clusters, consult individually for C2 and R2 clusters and decide for C3 and R3 clusters.

Discussion

The Mason and Mitroff technique identifies stakeholders according to their interests and their influence on the project or decision. Surprisingly however, this technique does not take into account the impact of the future project on the stake-

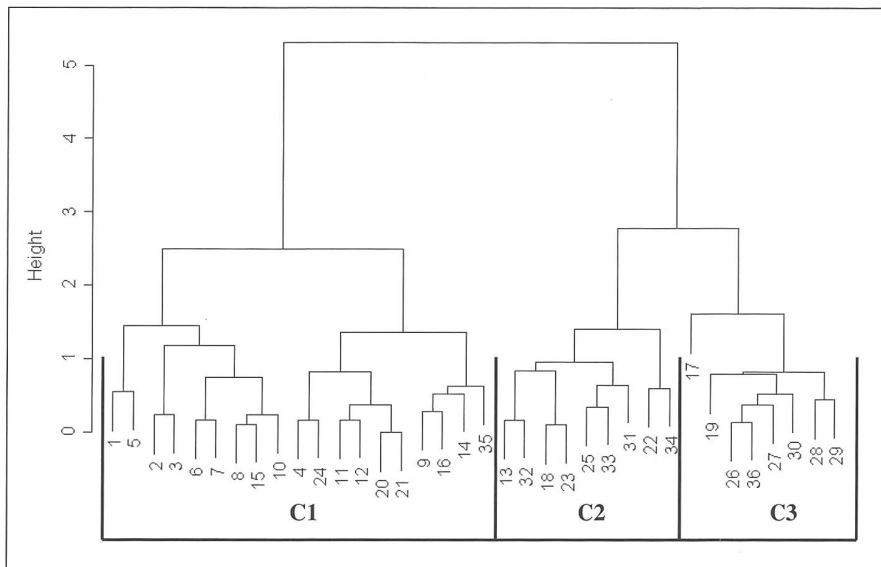


Figure 4: Cluster analysis at cantonal level.

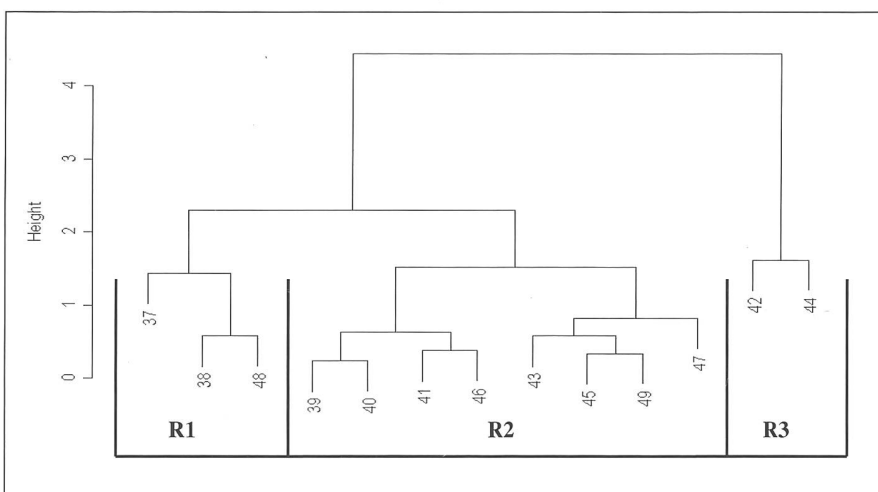


Figure 5: Cluster analysis at regional level.

Table 3: Experts' mean answer for the Vroom's model questions and results (n = 3).

Stakeholder group	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7	Vroom's level of stakeholders involvement
C1	high	high	low	low	high	high	high	facilitate
C2	high	high	low	high	high	low	high	consult individually
C3	low	low	low	high	high	low	high	decide
R1	high	high	low	low	high	high	high	facilitate
R2	high	high	low	high	high	low	high	consult individually
R3	low	low	low	high	high	low	high	decide

holders as does the stakeholders analysis proposed by VARVASOVSKY & BRUGHA (2000). That is why we have adapted this technique by adding a new procedure which we call «consequential». This adapted Mason and Mitroff technique provides results, which were considered as relevant by experts. The rapidity, simplicity and user-friendliness of this technique are also important advantages.

Two of the 49 stakeholders identified are potential, i.e. not yet established. Some people will only realize the real consequences of a project when they have the opportunity to see the planned outcome of the project on a map. At present, there are no such citizen or riverbank associations in the context of the R3 project. Tools exist which can anticipate the emergence of

these stakeholders. For example, during the design phase of the Paris-Marseilles high-speed TGV train project in France, the authorities actively promoted the creation of new citizen associations representing the towns through which the new railway lines would run (FOURNIAU 1996). They funded the associations so as to have an opportunity to access the citizens affected by the project and hence facilitate its realization. Perhaps the leaders of the R3 Project should also encourage the establishment of such groups.

The purpose of using these three criteria (resource, degree of implication and political influence) was to enable the structuration of the stakeholders, as well as to describe and characterize them. The environmental stakeholders (number: 20,

21 and 48) have an important degree of implication and a great political influence. This can be explained by the characteristics of the R3 project and by Swiss legislation. One of the objectives of the R3 project is to enhance the environmental function of the Rhône. Moreover, Swiss law gives environmental organizations the right to legally oppose a proposed project (CONFÉDÉRATION SUISSE 1983).

In this paper, we use the concept of stakeholder involvement proposed by VROOM (2003) and DANIELS *et al.* (1996). This concept is close to what we call elsewhere level of participation and which is defined by LUYET (2005).

In our case study, the Vroom's model identifies three levels of stakeholder involvement (decide for C3 and R3, consult individually for C2 and R2 and facilitate for C1 and R1). Taking into account the Swiss context, these results seem to be relevant. The results coming out of the Vroom's model vary in time and according to the experts' interpretation of the seven questions. The model is based on a dichotomous answer to the questions (high or low). But in reality an answer could be somewhere between high and low. Fuzzy logic could be used to take such situations into account.

The purpose of the method proposed in our paper is to determine a specific level of involvement that can be assimilated in each stakeholder group. Its main advantage is that we are able to optimize the participative process by taking into account of the stakeholders characteristics. The process is based on a rigorous and systematic approach. It is important to note here that care must be taken to ensure that weaker stakeholders are not marginalized or discriminated against.

Conclusion

Recently, public participation has emerged as an appropriate tool to enhance the natural resource management. In this context, the Valais cantonal authorities want to introduce participation into R3, a multi-objective river management project. At the present time, the project is in a design phase and stands in need of new tools. The main contributions of this paper are to propose a method to identify stakeholders, to regroup them into homogenous groups and then to assign to these groups a specific stakeholder involvement. Techniques are adapted, developed and tested to concretely apply this method. Stakeholders' identification followed the adaptation of the Mason and Mitroff technique. Stakeholder grouping was done using cluster analysis. Identification of the stakeholder involvement followed the Vroom's model. This proposed approach can be replicated and applied to other projects but special attention needs to be paid to the question of the context. This proposed stakeholder structuration process provides support to better understand the situation and represents a first step in elaborating a program of participation. The next step would be the definition of a specific participative technique, one that takes into account the situation (funds available, number of stakeholders) for each stakeholders' group.

Summary

In recent years, participation has emerged as an appropriate tool for enhancing natural resource management. Participative processes usually consist of information and a series of workshops. This aspect of the participation seems to have shortcomings for large projects because it does not take the complexity of the technical issues or that of the decision making process into account. Several authors state that an appro-

appropriate solution would simultaneously integrate several participative techniques. The first step to reach this objective is to identify and then to structure stakeholders into groups and to assign them a specific level of involvement. The aim of this paper is to present this method in the form of a case study: the Third Rhône Correction Project (R3 project), a large river restoration project in Switzerland.

Résumé

Identification et structuration des acteurs: des étapes importantes dans le processus de participation lors de grand projet? Étude de cas: le projet de troisième correction du Rhône (R3) en Suisse

Ces derniers temps, la participation s'est révélée comme étant un instrument approprié pour améliorer la gestion des ressources naturelles. A l'heure actuelle, les processus de participation se réduisent habituellement à l'information et à des ateliers. Cette approche de la participation souffre de lacunes dans le cadre de grands projets. En effet, elle ne tient pas compte de la complexité des problèmes techniques, du processus de décision et du nombre d'acteurs. Plusieurs auteurs affirment qu'une participation appropriée doit intégrer plusieurs techniques participatives en parallèle. Pour atteindre cet objectif, les différents intérêts en présence doivent être identifiés dans un premier temps, puis classés dans des groupes auxquels on assignerait un niveau de participation spécifique. Le but de cet article est de présenter la méthodologie développée à l'aide d'une étude de cas: le projet de troisième correction du Rhône (R3), actuellement le plus grand projet de renaturation d'un fleuve en Suisse.

Traduction: CLAUDE GASSMANN

Zusammenfassung

Bestimmung und Gruppierung der Stakeholder: wichtige Schritte im partizipativen Prozess eines Grossprojekts? Fallstudie im Rahmen des Projekts der dritten Rhonekorrektur (R3) in der Schweiz

In den letzten Jahren entwickelte sich Mitwirkung als geeignetes Werkzeug, um das Management natürlicher Ressourcen zu verbessern. Mitwirkungsprozesse bestehen gewöhnlich in Information und einer Reihe von Workshops. Dieser Aspekt der Mitwirkung scheint in grossen Projekten massgebliche Mängel zu haben, weil damit weder die Komplexität technischer Probleme noch diejenige des Entscheidungsprozesses berücksichtigt wird. Mehrere Autoren legen dar, dass eine angemessene Lösung aus mehreren partizipativen Methoden besteht. Um dieses Ziel zu erreichen, sollten Stakeholder zuerst bestimmt und dann in Gruppen gegliedert werden, denen ein bestimmter Grad an Mitwirkung übertragen wird. Das Ziel dieses Aufsatzes besteht darin, diese Methode anhand einer Fallstudie vorzustellen, die im Rahmen des Projekts der dritten Rhonekorrektur vorgenommen wurde, dem grössten Projekt einer Flussrenaturalisierung, das in der Schweiz in den letzten Jahrzehnten ausgeführt wurde.

Übersetzung: MARGRIT IRNIGER

Bibliography

- ARNSTEIN, S.R. 1969: A ladder of citizen participation in the USA. *Journal of the American Institute of Planners* 35: 216–224.
 BANVILLE, C.; LANDRY, M.; MARTEL, J.M.; BOULAIRE, C. 1998: A stakeholder approach to MCDA. *Systems Research* 15: 15–32.

- CANTON DU VALAIS 2000: Troisième correction du Rhône: rapport de synthèse. Service des routes et des cours d'eau. Sion, Valais, Suisse.
- CANTON DU VALAIS 2005: Plan sectoriel troisième correction du Rhône. Service des routes et des cours d'eau. Sion, Valais, Suisse.
- CHESS, C.; PURCELL, K. 1999: Public participation and the environment. Do we know what works? *Environmental science and technology* 33, 16: 2685–2692.
- CHRISTENSEN, N.L.; BARTUSKA, A.M.; BROWN, J.H.; CARPENTER, S.; D'ANTONIO, C.; FRANCIS, R.; FRANKLIN, J.F.; MACMAHON, J.A.; NOSS, R.F.; PARSONS, D.J.; PETERSON, C.H.; TURNER, M.G.; WOODMANSEE, R.G. 1996: The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management. *Ecological Applications* 6: 665–691.
- CONFÉDÉRATION SUISSE 1983: Loi fédérale sur la protection de l'environnement (LPE).
- CROZIER, M.; FRIEDBERG, E. 1977: L'acteur et le système: les contraintes de l'action collective. Editions du Seuil, Paris.
- DANIELS, S.E.; LAWRENCE, R.L.; ALIG, R.J. 1996: Decision making and ecosystem based management: applying the Vroom Yetton model to public participation strategy. *Environmental impact assessment review* 16: 13–30.
- ELLIOT, C.; SCHLAEFFER, R. 2001: Understanding forest certification using the advocacy coalition framework. *Forest policy and economics* 2: 257–266.
- ELLIOT, C. 1999: Forest certification: analysis from a policy network perspective. Thèse no. 1965. Ecole polytechnique fédérale de Lausanne, Suisse.
- FAO 2000: Public participation in forestry in Europe and North America. International labour office, Geneva.
- FOURNIAU, J.M. 1996: Transparence des décisions et participation des citoyens. *Studies in Techniques, territoires et société* 31: 9–47.
- FOTTLER, M.D.; BLAIR, J.D.; WHITEHEAD, C.J.; LAUS, M.D.; SAVAGE, G.T. 1989: Assessing key stakeholders: who matters to hospitals and why? *Hospital and health services administration* 34: 525–546.
- GRIMBLE, R.; WELLARD, K. 1997: Stakeholder methodologies in natural resource management: a review of principles, contexts, experiences and opportunities. *Agricultural systems* 55, 2: 173–193.
- HARMONICOP 2004: Public participation in river basin management in Europe: a national approach and background study synthesizing experiences of 9 European countries. HarmonicOP project (<http://www.harmonicop.info/download.php>, October 6, 2006).
- HASTIE, T.; TIBSHIRANI, R.; FRIEDMAN, J. 2001: The elements of statistical learning: data mining, inference, and prediction. Springer series in statistics. New York. 533 p.
- IAP2 2005: International Association for Public Participation (<http://www.iap2.org/>, October 6, 2006).
- IRVIN, R.A.; STANSBURY, J. 2004: Citizen participation in decision making: is it worth the effort? *Public administration review* 64, 1: 55–65.
- KAUFMAN, L.; ROUSEEUW, P.J. 1990: Finding groups in data: an introduction to cluster analysis. New York.
- LAUMANN, E.O.; KNOCKE, D. 1987: The organizational state, social choice for national policy domain. University of Wisconsin Press, Wisconsin.
- LEACH, W.D.; PELKEY, N.W. 2001: Making watershed partnerships work: a review of the empirical literature. *Journal of water resources planning and management* 127, 6: 378–385.
- LUYET, V. 2005: Bases méthodologiques de la participation lors de projets ayant des impacts sur le paysage. Cas d'application: la plaine du Rhône valaisanne. Thèse No 3342. EPFL. Lausanne, Suisse.
- LUYET, V.; ROUSSEAU, A.N.; SCHLAEFFER, R.; VILLENEUVE, J.P. 2005: Gouvernance participative dans la gestion intégrée de l'eau par bassin versant au Québec: État des lieux et réflexions. Vecteur environnement (à paraître).
- MASON, R.O.; MITROFF, I.I. 1981: Challenging strategic planning assumptions: theory, cases and techniques, John Wiley and sons, New York.
- MOSTERT, E. 2003: The challenge of public participation. *Water Policy* 5: 179–197.
- OECD 2001: Citizen as partners. OECD handbook on information, consultation and public participation in policy making (<http://www.eldis.org/static/DOC11520.htm>, October 6, 2006).
- PALETTA, A. 2002: Participatory strategic planning, a survey of the international literature, laboratoire de politique forestière, ENGREF.
- RENN, O.; WEBLER, T.; WIEDERMANN, P. 1995: Fairness and competence in citizen participation: evaluating models for environmental discourse. *Technology, risk and society* 10.
- ROWE, G.; MARSH, R.; FREWER, L.J. 2004: Evaluation of a deliberative conference. *Science technology and human values* 29, 1: 88–121.
- SABATIER, P.A.; FOCHT, W.; LUBELL, M.; TRACHTENBERG, V.; VEDLITZ, A.; MATLOCK, M. (eds.) 2005: *Swimming Upstream: Collaborative Approaches to Watershed Management (American and Comparative Environmental Policy)*. MIT Press. 328 p.
- SAMPLE, V.A. 1993: A framework for public participation in natural resource decision making. *Schweiz. Z. Forstwes.* 91, 7: 22–27.
- SCHLAEFFER, R. 1997: Ecosystem-based management of natural resources: a step towards sustainable development, Iufro Occasional paper No 6.
- TANQUEREL, T. 1988: La participation de la population à l'aménagement du territoire. Collection juridique romande. Payot Lausanne.
- UE, Union européenne 2000: Directive cadre européenne sur l'eau. Document disponible à: <http://europa.eu/scadplus/leg/fr/lvb/l28002b.htm> (October 6, 2006).
- VAN WAARDEN, F. 1992: Dimension and types of policy networks. *European journal of political research* 21: 28–53.
- VARVASOVSKY, Z.; BRUGHA, R. 2000: A stakeholder analysis: How to do (or not to do) Health policy and planning 15, 3: 338–345.
- VROOM, V. 2000: Leadership and the decision-making process. *Organizational Dynamics* 28, 4: 82–94.
- VROOM, V. 2003: Educating managers for decision making and leadership. *Management decision* 41, 10: 968–978.
- VROOM, V.; YETTON, P. 1973: Leadership and decisionmaking. University of Pittsburgh Press. Pittsburg. PA.
- WORLD BANK 1996: The World Bank participation sourcebook. The World Bank. Washington DC (<http://www.worldbank.org/wbi/sourcebook/sbhome.htm>, October 6, 2006).

Authors

Dr. VINCENT LUYET, Ecosystem Management Laboratory, Swiss Federal Institute of Technology (EPFL), Station 2, CH-1015 Lausanne, Switzerland. E-mail: vluyet@gmail.com.
 Prof. RODOLPHE SCHLAEFFER, Environmental Science and Technology Institute, Swiss Federal Institute of Technology (EPFL), Station 2, CH-1015 Lausanne. E-mail: Rodolphe.Schlaepfer@epfl.ch.
 Dr. ION IORGULESCU, KBM SA, Rue de Lausanne 39, Case postale 823, 1951 Sion. E-mail: ing.civils@kbm-sa.ch.