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**Participative approaches and extension practices towards sustainable agriculture-
A methodological approach based on sociology of translation.**

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Abstract

This methodological paper analyses the elaboration and the implementation of participative local projects aiming at sustainable agriculture and rural development. The methodology is based on the sociology of translation (Callon, 1986). The processes initiated from the elaboration to the implementation of an action plan towards sustainable agriculture are tackled as social dynamics building new networks, requiring different translations and crossing successive phases from the formulation of the problem to the implementation of actions. We examine the progressive enrolment of different stakeholders, the role of non-human actors like leaflets or documents and the mobilisation of different systems of knowledge. The general value of the method has been tested on a set of diversified actions: creation of a collective structure for exchanges of services between farmers, recovering of abandoned grasslands and landscape maintenance, local product valorisation and meat chain, production and commercialisation of wood energy. These actions have been implemented in four different areas across the Alps, in Austria, France, Italy and Switzerland. Firstly, we present the methodology and its validation on this set of situations. Then we discuss the key outputs in terms of implementation of projects aiming at sustainable development.

Key-words: participative approach, sustainable agriculture, local development, collective action.

Introduction

Our paper discusses what action is on the basis on an in-depth analysis of implementation of small-scale projects in the frame of participative groups targeting sustainable development. Resorting to the concepts of sociology of translation and actor network theory, we question the standard way of conceiving action. Conventionally, the design and implementation of projects is seen as a linear process, with successive phases of management such as definition of objectives and risks, planning of actions, implementation, adjustments and evaluations of results referring to the level of achievement of objectives. This conception of successive stages is based on the standard sequence: problem finding, problem shaping, problem solving.

The sustainable development concept has introduced the notion of local governance in rural development. Our hypothesis is that the implementation of the local governance principle (multi-stakeholders and participative approaches) in small-scale projects provides an alternative view on the phases of project management. Focusing on the phase of actions implementation towards sustainable development, we examine how complex the process is. We notice in particular how problem formulation is permanently overlapping with problem solving. This alternative proposal implies to elaborate different tools for extension in the field of rural development.

This paper is related to a research and demonstration European project so-called IMALP: implementation of sustainable agriculture and rural development in alpine mountains.

1. The methodology

1.1 The IMALP project

The IMALP project involves four pilot areas across the Alps (Moyenne-Tarentaise, France; Val d'Hérens, Switzerland; Murau, Austria and Val di Sole, Italy). IMALP initiated an experimental situation where a group of local stakeholders (farmers, elected officials and NGO members) design and implement a consistent set of actions towards sustainable agriculture. In each area, four to eight actions managed by an action group are implemented.

To survey the collective dynamics arisen, we attended the meetings of the local and action groups over a period of three years. The main objective was to evaluate the capacities of their members to negotiate in a collective way an agreement about the goals and the means of change towards sustainability. We reported: who participates in the different meetings, what are the matters discussed (consensual and conflictual topics), interactions between members, modes of negotiation, use of different tools and methods of facilitation, way of decision making, major outputs (concrete actions, leaflets, documents, etc.).

To analyse the processes occurring in the implementation of actions, we tested a method designed from the sociology of translation.

1.2 The concept of translation

The actor network theory (Law, 1992) is constructivist and refuses to accept essentialist explanations of changes (it was a good idea and relevant means for its implementation were used). Central is the concept of translation in which stakeholders attempt to create a network. During the process of translation, the identity of actors, both human and non-human, the possibilities of interaction and the margins of manoeuvre are negotiated and delimited (Callon, 1986). Four "moments" of translation, which can overlap, are discerned: *1. Problematisation*: what is the problem? Who are the relevant actors? *2. Interressement*: how to seal partnerships? Getting the actors interested and negotiating the terms of their involvement. The primary actor works to convince the other actors; *3. Enrolment*: stabilisation and coordination of actors' role, actors accept the roles defined during interressement; *4. Mobilisation of allies*: designation and representativeness of spokesmen,

a constraining network is working and many human and non-human actors act in common.

2. The case studies

To discuss the ability of the method to grasp the complexity of collective actions towards sustainable development we test it on a set of four actions:

2.1 Working conditions in Moyenne-Tarentaise, Savoie, France.

This action addresses one major problem of sustainability of mountain farming: work overload of farmers. The objective is the construction by farmers of their own solutions. They refined the problem and decided to design a collective set-up to develop exchanges of services between farmers.

2.2 Landscape management in Val di Sole, Trentino, Italy.

Landscape maintenance is a key problem of sustainability in mountain areas to which agriculture can give a relevant contribution. The objective of the action is the establishment of networks between farmers, municipalities and landowners with the aim of recovering abandoned grasslands in the valley.

2.3 Local product valorisation and meat chain in Val d'Herens, Valais, Switzerland.

This action is related to economic sustainability of agriculture. The objective is to increase the value-added of quality meat production by the way of a local chain of marketing and commercialisation. This project required a complex social construction involving farmers, butchers, restaurant keepers, research institutions and extension services.

2.4 Production and commercialisation of wood energy in Murau, Styria, Austria.

In 1992, 14 farmers and a monastery founded a cooperative for biomass heating. Their objectives were to increase the value-added of forest management and the use of local renewable energy (wood chips). Currently the cooperative has enlarged its collaborations and is becoming a significant regional energy supplier.

3. Results

The different actions highlight the dynamics of collective actions towards sustainable development. The shifts from consensus to controversial issues, the gradual interestment and enrolment of stakeholders, the role of leaflets and documents are a series of processes of major importance.

3.1. Working conditions in Moyenne-Tarentaise.

This action highlights the role of controversy. The work loads were a consensual matter at the beginning as everyone thought to be overloaded of work. Then, in speeches, the workloads were related to the work organisation: some farmers could be overloaded as others do the same job quickly and have free time. This controversy allowed to refine the problem and led to wonder if mutual help and exchanges of services would be feasible. A study evaluating the offer-demand of services underlined the differences between farms for seasonal tasks related to different altitudinal levels. Finally, the group envisaged a cooperative to exchange services between farmers. A reproblematisation went along the search of solutions. Firstly, the collective set-up to exchange services had an objective of mutual help between farmers. In a last stage, they refined its objective and put forward economic arguments based on machinery equipment (Petit et al. 2006).

3.2. Landscape management and recovering of abandoned grasslands in Val di Sole.

A consensus between farmers and local administrations has been swiftly reached. Local administration saw in this action a way to improve the tourist attractiveness. For farmers it was a way to expand their pasture area. The action was however problematised by the landowners. They were external to the action group but their alliance was necessary.

Landowners constructed the proposed solution, the farmer intervention to clear the grasslands, as a problem for the integrity of their property. In most cases, the mediation of the local administrations solved the difficulties: their publicly recognised authority managed to gain the alliance of the landowners and to help the reformulation of an individual risk in a collective gain. Non-human actors played a major role in the construction of an agreement between human actors: the expected impacts of the action were discussed with the help of simulations of landscape evolutions, a geographic information system is used as a common tool to assess the results.

3.3 Local product valorisation and meat chain in Val d'Herens.

Several phases of social construction and negotiation about the objectives, the means and the formulation of collective rules occurred. The first large problematisation “to sell better local products” has evolved in different reproblematisations along the process: local products became meat local products, then cattle meat products and finally Hérens cattle meat products. After that, a clear identification of the product, the design of a strategy of marketing and the need of scientific references on the fattening capacity of the Hérens cattle implied an evolution of the action group and of its network. Other actors emerged like butchers – looking at the good image of the product–, restaurant keepers – looking for a diversification of their menus –, cantonal administration – supporting legal construction of quality standards and marketing tools –, and national agronomic research institutes – interested by research on extensive practices of fattening with rustic breeds. Finally, the relationships between the different stakeholders have been stabilised and officialised by the setting up of an inter-professional association.

3.4 Production and commercialisation of wood energy in Murau.

In recent years, this cooperative has evolved to a significant regional energy supplier. Intense collaborations with different economic stakeholders have been a key factor. A local plumbing company promised support by focusing the promotion of woodchip heating stations, but challenged the quality and quantity of woodchips. The improvement of the quality of chips was a condition for the enrolment of the plumbing company. Consequently, the cooperative improved their technical assets for storage and delivery. In 2005, the cooperative signed a contract with a fish zoo to build and operate a heating station. This is a major change in the business strategy. Instead of only selling the chips, the cooperative now sells the heat produced in their energy stations. Consequently, the members of the cooperative take a higher risk and responsibility, but it enables them to gain a higher value-added. Currently the cooperative is in negotiations with a regional dynamite factory for providing and operating a biomass energy station. This enlarged operation would allow producing also electric energy out of wood biomass, which would mark a milestone towards regional energy autarky. As the starting-up of actions, the scaling-up implies also phases of reproblematisations, enrolment and mobilisation.

4. Discussion

4.1 Problematisation and re-problematisation

A striking fact emerging is that re-problematisations occurred in a short path of time: at the beginning when the group defines objectives, then during the implementation of action. Three types of explanations can be proposed. In the phase of action implementation, concrete decision making refines the problem, requires new knowledge and leads to permanent adjustments of actions. Re-problematisation is also due to changes in the overall context: reform of policies, market fluctuations, consumers' demands. Finally, re-problematisation is also related to the evolution of the action group and of its network. Stakeholders from outside often initiate new re-problematisations as they bring in new perspectives, new kinds of knowledge and networks.

4.2 From interessement to enrolment

Taking action is a social process, which needs to establish a network of different stakeholders (farmers, consumers, elective representatives, food chain stakeholders, NGO's, institutions, etc.). If interessement is a key stage for action progress, enrolment turns out to be crucial. Participants have to become actors and individuals strategies have to be articulated with the implementation of a collective strategy. The implementation succeeds when enrolment is extended in a consistent network of stakeholders and consolidated by institutionalised rules. The establishment of new collaborations can trigger phases of innovation and possibly take actions to the next level.

Interactions between human and non-human actors are key elements of enrolment. Leaflets, price-scales, memorandums, maps, etc. play a role as non-human actors. For their elaboration, actors have to reach a common view to be circulated towards an external audience. In other cases, non-human actors, as maps, photographs help to design a common diagnosis. This is a phase of reconstruction of knowledge, values and knowledge) and relationships between human and non-human actors.

4.3 From enrolment to mobilisation of allies

When enrolment is extended to a consistent network of stakeholders inside and outside the local territory and when they take action in a common way, the action can be considered in a successful stage. Afterwards, the success lies in the capacity to evolve with adaptations enable to involve new actors and to maintain the initial actors. The consolidation of action is related to the management of both internal cohesion and external enlargement. Collective action requires several translations, it is a permanent process, it may fail and is never completed.

Conclusion

Conception and action are not successive phases. Collective action towards sustainability is a social process where goals, values, knowledge, relationships are re-constructed continuously (Hatchuel, 2000). Our results pinpoint two major points. Firstly, action produces knowledge and action starts always without full knowledge of a problem. Secondly, social concerns as interessement of stakeholders, involvement of institutions, definitions and breakdown of duties and responsibilities are of major importance. The consequences are a refining and in some cases a redefinition of the problem and of the objectives.

The concept of translation is of high scientific significance and seems relevant to analyse this social process. The concrete resulting challenge is to produce tools to accompany extension and advisory services within this framework. These tools could be an alternative to the standard methods of project management conceiving generally changes as a straight ahead process from a current situation to an objective and underestimating the interessement and enrolment phases. These alternative tools focused on the management of the social construction of a project will have to take into account: 1- the process itself evolving with iterative phases and involving human and non-human actors; 2- its outputs both in terms of concrete actions, capacity building and networking abilities of stakeholders.

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