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**COLLECTIVE ACTION, PROPERTY RELATIONS AND NATURAL RESOURCE
MANAGEMENT: COMPARITIVE STUDY BETWEEN TWO PERUVIAN AND TWO
NEPALESE VILLAGES**

This paper will focus on the method and the motivation as to why users choose to manage the natural resources of their community in a collective or in a more individual manner.

Natural resource management is defined as the process of decision making about the use of natural resources for fulfilling basic and other needs. People involved in natural resource management are faced with various social dilemmas, which are conflicts between individual and collective interests: it is rational for people to make selfish choices although it would be better for everyone if they were co-operative choices.

Property relations influence how people will decide to manage their resources, and therefore how people deal with social dilemmas. It is the aim of this paper to describe how social dilemmas effect the management of natural resources and how official and local property relations influence the way people deal with social dilemmas.

In line with the conference theme: "Crossing Boundaries", this paper will examine and discuss both Nepalese and Peruvian villages, and try to describe these villages from an holistic perspective: crossing disciplines, bridging practice and theory, relating local knowledge and intervening action, connecting

different resource types and in the case of Peru, will consider the influence of different jurisdictions.

The village of Chabisa Kuria in Nepal

Collective action is an essential factor in the management of Chabisa Kuria's natural resources. The village, for many centuries, has depended on a very complex system of interconnections, not only between its people but also between the different natural resource systems. The organisation of a management system for an irrigation canal that provides water to several wards/villages of Village Development Committee (VDC) Phoimahadev was constructed centuries ago, and is the centre of community decision making processes, which involves almost all activities which the villagers perform in relation with natural resource management. The activities and tasks which were developed to maintain optimal functioning of the irrigation system are closely interrelated to the practice of managing the farm-/ and pasture lands and the watermill. One could even state that the management of the forests of the village must be seen in connection with the way the inhabitants of Chabisa Kuria treat their other resources.

Since the construction of their irrigation canal, four to five hundreds years ago, the people of Phoimahadev have maintained the canal and and formed rules and regulations for the use of the water. There are many legends around the origin of the canal and in memory of one of these legends every year people offer a goat to a ghost which is still supposed to live in the irrigation canal today.

The irrigation management system is built on three elements:

- The users represented by the users committee,
- The Kulal, the person who is responsible for the maintenance of the canal, the name "Kulal" is also given to the canal management system
- The Noralo, the person who is responsible for the water distribution at the command area level. The name also refers to the system of water distribution.

Each year the Kulal is selected by all users, but always from the ward of Bajedi. People from Bajedi have taken the responsibility for this job for generations. Working as the Kulal means receiving the right to operate the communal grain mill. Not only will he receive income from the watermill, but each household also pays him every year a fixed amount of cereals for his services. The connection between the management of the irrigation canal and the watermill works very efficiently because when water does not flow through the canal the watermill immediately stops functioning, after which the Kulal will take a look at the canal to assess the nature of the problem. If it requires minor repair, he will take care of it himself, or he will inform other users the need for repair. The users' committee will manage the labour needed and the user who is unable to participate for whatever reason is required to pay a fine as decided by the committee.

Once water flows out of the watermill, a Noralo sees that every user receives water fairly so that all get the water in time for transplanting rice. To avoid conflicts regarding the allocation of water, people have set certain rules as to when, by whom and at what time the rice should be transplanted.

Each locality appoints Noralos on a rotational basis, for the services all users pay a fixed (half of what they pay to the Kulal) amount of cereals per year. Another task of the Noralo is to look after the animals of the whole community in order to optimise the use of labour, he is responsible in preventing animals from grazing on the crops. If an animal does destroy crops, the Noralo has to pay a fine himself.

People are not allowed to keep animals in the homestead in august and september. If animals which are not sick or pregnant do stay in the homestead, the responsible person is fined by the community. Through this mechanism, people protect grasses in the village land from being cut for feeding their cattle.

The Parma labour exchange system is closely interlinked with the Noralo system. It deals with the management and distribution of labour and is responsible for the planning of all farming activities from planting to harvesting especially the rice cultivation to support the management of the irrigation system. When a person receives water on a certain day for transplanting rice, the Parma system ensures that people from other households assist during this activity, which is a response to labour and cash shortage. Because of the Parma system, people do not require cash immediately every time for each activity. People keep an account for who worked in whose field for how many days. This makes it easy to calculate who is to receive additional money/grains for extra work done and from whom, and is cleared every year in march, when people receive the fixed amount of cereals for each day of extra work (men receive twice as much as women).

Furthermore the people from Chabisa Kuria have developed a remarkable system with the people from neighbouring village Ranchuli for the use of forest products. They have received users' rights for the Parighat Ban forest about 400 or 500 years ago. Since that time, each household has been paying cereals to the village of Ranchuli every year. Because Chabisa has good paddy land and a year round irrigation system, it provides food to Ranchuli village and in exchange for this food Ranchuli needs to provide access to their forest to the people of Chabisa.

The story of Chabisa shows us that in this case of common property (p.e the irrigation system) and its accompanying collective action network (kulal, noralo, parma) is based on 500 years of history. The long term experience with collective action and common property and therefore a high degree of "social confidence", facilitates an effective management of natural resource in a collective way. It may be said the management of the irrigation system probably influenced the choice for the arrangement between Chabisa and Ranchuli regarding the use of Parighat Ban which continues today and makes Chabisa an example in which collective action and common property are both prominent and successful.

Lalu

In Kalikot, the same district as Chabisa, lies the village of Lalu. The example of Lalu shows us that the rational of collective action and common property does not apply for the whole district and that also other rationals can provide a rather effective management system of local resources.

Lalu is considered a relatively rich village, which is partly due to climatic conditions, rich soil and its location being "only" one day walking distance from the nearest roadhead (marketing possibilities), while Chabisa is four days walking distance of the nearest roadhead. However, its location is not the only reason for Lalu's "wealth". In past decades its habitants have progressed, by introducing new practices, such as an agricultural system which is very well adapted to the local conditions.

The livelihood strategy of Lalu is based on the cultivation of maize and the raising of buffaloes, both those practices are mutually beneficial, as the maize provides fodder for the buffaloes and the dung of the buffaloes facilitates the production of compost in large quantities. About 35 years ago, the people of Lalu shifted from cotton cultivation to maize in combination with buffalo breeding. This occurred, when the market for cotton diminished as a direct result of synthetic material production.

The agricultural systems has its roots through an interesting mix of local initiatives and outside influences. The local maize variety, which yields a higher production is more successful than the improved varieties, that were introduced by the District Agricultural Development Office. It originated from someone who brought a dwarf variety from a neighbouring district, and then was planted along with the local longstalked variety, whereafter the new variety developed. The buffalo production boomed when a buffalo from India was introduced, which yielded a much higher level of milk production and the people started to grow maize. In addition local knowledge systems as medical treatment of livestock, plant protection, green manuring, soil fertility management etc., are highly developed in Lalu, which is one of the reasons for its prosperity in agriculture.

In general, the households of Lalu have a tendency to manage their resources individually. In some cases this means that the management of some resources is quite weak, for example the poor management of the irrigation system and the failure to organize people for the protection of a huge landslide.

However, in Lalu there exists a remarkable example where the people manage a common property resource in an individual way. It is the pasture management system of the "Mela", the grazing area around the village. Every household "owns" a plot, which is marked by stones. The management of the Mela illustrates a unique combination of private and communal ownership and accordingly has communal rules and regulations. It outlines how people can cope with the shortage of grass by adopting strict rules and regulations on grazing.

During the summer (june-september), the grass need to regenerate and no one is allowed to cut or graze. Then in october and november people start cutting grass on their private plots. This grass is mainly used for making hay to feed in the period of shortage. After it is cut everybody is allowed to go to that plot

and graze its animals there. To prevent livestock entering during the "no grazing" period, the Noralo has to look after the fields. He is also there to control theft of grass by local people. The Mela management system is people's response to decreased fodder resources compounded by an increasing demand from the shift to buffalo raising.

Compared to Chabisa, Lalu does not have a long history of collective action and common property management. It is difficult and hazardous to draw any conclusions about the differences between the two villages, however we can speculate that for example the construction of the irrigation canal in Chabisa has been the major factor in resolving management problems in a "collective" way. In the case of Lalu, the absence of a common resource which is crucial for its livelihood and the presence of a nearby market, might be the reason why its inhabitants tend to solve problems in a more individual manner. More important however, is the fact that in both villages the natural resource management systems are inbedded in a long tradition and are very complex. In addition, they are also rational and interconnected, and perhaps, fragile, which for example is an important realisation by an outside development agency which chooses to intervene with activities related to natural resources management (irrigation, agriculture, forestry etc.)

Comunidad and Association Ccapana in Peru

In the study villages of Peru, changes in the jurisdiction regarding landtenureship in this century, have influenced enormously the property relations and the way people have dealt with collective action. As in Nepal, we see a huge diversity in how people respond to changing realities and how history plays a determing role in their coping strategies. Furthermore, probably in response to these reforms, which in many cases did not respond to the farmers' reality, we can observe a big gap between the de jure and de facto landtenureship.

Up until 1974 the actual Comunidad Campesina Nueva Esperanza Ccapana and the actual Association Ccapana until 1968 belonged to the hacienda Ccapana. The history of the hacienda Ccapana in comparision with other haciendas, for example the neighbouring hacienda "Lauramarca" (Reátegui Chavez, 1977), is characterized by a closer relation between the hacendado (landlord) and the workers . The hacendado lived in his hacienda (contrary to many other hacendados), constructed different infrastructural works, obliged to the children of the workers to study (other hacendados prohibited this) and he had a system of labour organization with its roots in the tradition of the colonos. The actual comuneros of the comunidad Nueva Esperanza Ccapana state that they always respected the authority of the hacendado, and did not rebel until 1961, as a result of the abusive behaviour of one of the overseers.

In relation with the state laws, the owner of the hacienda Ccapana informed the colonos already in the first phase of the Agrarian Reform about the possibility to buy the land; even before the agrararian reform of Velasco (1969), he had sold a big part of the hacienda to the workers. In 1968, the association of Ccapana bought a part of the hacienda Ccapana; and the remaining parts, among them the comunidad of Ccapana, were later transformed into a cooperative in 1974.

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In general, the time of the cooperative Ccapana has not been a favorable period for its inhabitants. In the first years, in spite of the corruption of several officials, the farmers continued to maintain their "respect" to the authority. Only after several years of existence of the Cooperative, the people started to complain with the official bodies, because the administrator at that time was totally incapable and abusive.. We can see a parallel with the time of the hacienda, when the colonos respected the hacendado in an almost absolute way, and only in case of extreme abuse did they start to rebel. Another similarity is that in both cases of rebellion, the timeframe was favourable (beginning of the Agrarian Reform and beginning of dissolution of cooperatives).

After the removal of the last administrator, the Cooperative still formally existed and the land property and possession was officially communal. However, during this time there existed discrepancy between the official and inofficial reality, because at the local level the cooperative already was divided in 6 sectors in which each farmer had its own plot

The constitution of the Cooperativa Ccapana obviously has been the consequence of the agrarian reform of Velasco. The example of Ccapana proves that this reform did not respond to the reality of those farmers. At the end of the seventies and during the eighties the failure of the cooperatives caused a change in the state politics and legislature in favour of the comunidades campesinas.

After many years of delay, mostly due to state bureaucracy, in 1989, an arbitral commission was formed by a representative of the ex-cooperative and the presidents of each sector in which the problems between the future comunidades and anexes were solved.

A year later, in 1990, the comunidad Nueva Esperanza Ccapana obtained its official recognition, and encompasses an area of 934 hectares and is made up of 32 entitled members (empadronados). The major crops are patato, maiz and barley. In a short time the comuneros have developed a solid communal institutional capacity.

During the official existence of the comunidad, and contrary to the period of the hacienda and the cooperative, when the comuneros perceived their own development passively, obeying to the "patrones"; the comuneros of Ccapana have engaged in initiatives to improve their lives:

The institutions which are responsible for the management of the comunidad: the Junta Directiva (council of directives) and the Asamblea General (general assembly), are functioning well, which is reflected in a high level of organisation of the comunidad. According to the comuneros this has its origin during the time of secret asambleas and reunions during the eighties.

Neighbouring Association Ccapana and Comunidad Campesina Sumana, have a low level of

organisation which among others may be caused because these communities did not have these secret meetings, or perhaps in a broader sense their need to unify themselves for the wellbeing of the future of the comunidad was less, because instead of being part of the Agrarian Reform, they bought their land at the end of the sixties from the hacendado.

We can assume that various developments within the comunidad Cccapana can be related to its history of the last thirty years and probably before, considering the particular relation with the landlord of the hacienda Ccapana.

The constitution of the Comunidad Campesina Nueva Esperanza Ccapana implicated that for the first time in centuries these farmers have the right over their own lands; they themselves state: it is the best time in their lives. However the choice of the inhabitants of Ccapana to be comuneros, does not mean that they do not give importance to their individuales interests, it is more a rational choice to take profit from the both models: individual action and private property (major income for the family and independence in decision making) and collective action and common property (maintenance and construction of infrastructure, management of natural resources like the irrigation system, the pasture land, livestock, forests, agrarian production for communal objectives and having a social life and a social security).

The example of Ccapana also illustrates how de jure and de facto property relations can be very different. The cooperative of Ccapana was de jure common property, but in practice it was public property as the state officials were responsible for its management. As well the comunidad of Cccapana is officially common property, however in reality there exist a wide range of property relations. For example, it has individual and common agricultural lands, but also on the private lands collective action plays an important role with mechanisms like faena (communal labour) and ayni (labour exchange) The forest land is common property, but its trees are partly private and partly common.

Clear examples of collective action in the comunidad Ccapana can be seen in the way grazing on pasture lands is managed on a rotational basis or in the active role it plays in intercommunal activities like the repair of the main road and the irrigation canal. Association Ccapana, although it also uses the main road, does not have the institutional capacity or will to organize its inhabitants to participate in these intercommunal activities. Another interesting example of collective action, although it is not related to natural resource management, is the system of support they have developed for their children to study outside the comunidad.

The property relations within Ccapana have been influenced in an important way by the politics of the different governments and the laws which correspond with these politics

However, the comunidad Nueva Esperanza Ccapana have made their own interpretation to these outside influences.

Nueva Esperanza Ccapana has a communal institutional history which is unique. The diversity of the comunidades, associations and cooperatives, regarding their geographical, economical, cultural and social situation, indicates the need to respect the right of self-determination as a dominant philosophy by governmental and non-governmental institutions, as well, promote to a political and institutional framework which permits and facilitates the development which is adequate for each different comunidad. This also means that a comunidad should not be considered as an entrepreneurial unit (as the most recent Peruvian law about land tenure suggests), but as political micro-unities and should have a major voice in the determination of their own future.

The history and reality of the comunidad Ccapana shows us that the comunidad is not a closed capital, on the contrary: it involves a high percentage of the producers of the zones, especially in the sierra (mountain zone) of Peru and represents a key institution (because of its number and functions) in the life of the agrarian region of the country.

An important question for the coming years will be: How can the communal institutional history survive in the new political situation, maintaining an equilibrium between the advantages of the communal institutional history and the interests of the individual comuneros? Therefore it is crucial that in these decisions the comuneros themselves will have the last word, and that the institutions create optimal conditions for them to decide about the "roads" they want to take in the future.

Conclusion

The described case studies of villages in Nepal and in Peru were implemented in an intervening context. Therefore, during the appraisal sessions in these villages, a dominant question was, how we could translate the information about natural resource management, collective action and property relations in concrete activities? I do not want to give an answer on the question: should we intervene or not? And I hope that the examples of the villages made clear that each intervention regarding natural resources is a very fragile and hazardous activity, which always should be based on local knowledge and management systems, with a total participation of the local population.

Therefore, in case of an intervention the concept of "praxeology" (Fasola, 1997), a theory informing practice, is considered very valuable. People who claim to be practical and not in need of theory usually turn out to be using the theory of yesterday (Keynes in Fasola) and often show a bias towards the methodology instead of the problem, among others because of the 'fear' to act 'top-down'. More theoretical scholars, have the tendency to search for the ideal 'analytical framework', which could help to be able to understand "almost all dynamics affecting almost all communities", instead of recognising the complexity of the subject and the uniqueness of each community. Furthermore, the value of local knowledge is still underestimated by many of these scholars.

It is claimed that there is an urgent need to develop a praxeology from a learning perspective: we need policy theories, tools for analysis and methods for intervention. This praxeology must underpin the facilitation of social learning for the collective action and aims at the decision support provided by

governmental and non-governmental organisations at various levels to shape collective action. Within this concept theory is considered as a "set of propositions to guide communication among people, the purpose of which is to bring about these transformations and which is validated by (1) its acceptance by the agent addressed in a non-coercive situation and (2) its efficacy in bringing about the desired transformations" (Parson and Clark in fasolearn).

The examples furthermore illustrate that collective action and common property are strongly interrelated and that collective action is a reliable indicator to assess the effectiveness of the management of a common property resource. To understand the management of a common property resource, in the aforementioned cases it was crucial to study its relation with the management of other resources and its historical context.

Both in Nepal and in Peru, two villages have been studied of which one chose to solve social dilemmas with rational of collective action and common property, while the other chose to resolve problems in a more individual manner. However, the reasons why the villages in Nepal and in Peru came to their decisions are totally different. In the examples of Nepal it seems that the need to manage a crucial resource in a cooperative way, turned out to be a catalyst factor, why people tend to acknowledge the importance of cooperative action and common property management. In the example of Peru it seems that the need to unite in their struggle for independence, has been one of the major reasons why the comunidad of Ccapana tend to solve social dilemmas in a more cooperative way, while the association of Ccapana has not known such a momentum in which it was crucial to cooperate.

Furthermore it is important to make a distinction between de facto en de jure property relations as the example of Ccapana demonstrates. Most importantly, however, is that these examples from Nepal and Peru once again show that collective action and common property have not lost their importance during the centuries, are flexible towards changes and also today appear to be very effective coping strategies.

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