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Participation, indigenous knowledge and trees

by Stefan Rist

Participation is a common word on development agendas world over. Everyone agrees that it is absolutely essential and much time is spent in discussing how to improve it. Rarely, however, does one stop to think about what this so often used term really means.

Based on the experience of the agroecological project of the Agroecologia Universidad Cochabamba (AGRUCO), Bolivia, the author presents how a more thorough reflection about participation has given them a greater understanding which in turn has led to a reorientation of their activities in the communities where they are working.

Participation - who participates in what?

Normally we do not ask ourselves who is participating in what. This seems to be quite an unnecessary question as it is clear to everyone that the community should participate in "our" development project. In most cases the design of these projects has been based on the results of a feasibility study, carried out using rapid rural appraisal or some other similar method to determine the problems of the "beneficiaries". The strategies and solutions for solving the problems are then designed by specialists based on the assumption that the "beneficiaries" do not possess the knowledge to resolve their own problems, - if they did then the problem wouldn't exist!

After deciding what needs to be done, the next step is to try and get the highest level of participation of the people in implementing *our* solutions to *their* problems. Here we arrive at the first major stumbling block. The technical solutions identified by the "specialists" do not

fit culturally and the local people do not know how to "participate" in them. Another complicating factor leading to this lack of willingness on the part of the beneficiaries to participate seems to be that they do not understand how the project works. They have quite simply a lot of unanswered questions concerning the project: Where do the funds come from? What are the interests behind the project? Are there future commitments?, etc.

Being quite ingenious, development workers have tried many different ways to get participation; motivation campaigns are carried out, incentives like food for work or salaries are introduced. However even in projects with a considerable level of participation one can frequently observe that the communities do not consider it to be their project but rather one of a development cooperation agency, an NGO, a church, and so on...

The moment of truth comes as soon as the project comes to an end and the incentives are discontinued. In no time at all the project "participants" go back to their

traditional way of life leaving aside the "solutions" that the project was meant to introduce. No sustainable impact has been achieved. This at least, has been the experience in many Latin American countries.

Assessing this situation, many studies and evaluations have shown that the reason for this situation has to do with what has been called the traditional way of life, of production and of teaching etc. which is culturally specific. It seems that the projects, in spite of the participation, create a certain contradiction and tension between the traditional community philosophy and the modern philosophy of life represented by the project. The result is that the activities introduced by the project are not sustainable.

☞ *This meant accepting that
the community had its own
development agenda* ☞

In this situation we have two options. We can either reinforce our philosophy (more of the same for a longer period of time) thereby undermining local traditions and culture or we can opt to assist the communities in resolving their problems in accordance with their own rationality and philosophy.

AGRUCO opted for the latter and this had serious implications for how the project was to work. First "participation" had to be redefined, i.e. instead of finding ways for the community members to participate in our project, the project staff were bound to participate in the community by adapting themselves to its activities and interests. This meant accepting that the community had its own development agenda and that the role of AGRUCO would merely consist of supporting and facilitating the implementation of this.

This reorientation led to a profound change of attitude and activities on the part of the project staff. In order to participate in the community they had to learn about the community's agenda. This was done by attending community meetings and feasts, by participating in agricultural, animal husbandry and other activities, etc.



Reforestation activities to protect an irrigation channel in Chorogo during a day of community work was one of the community's activities that project staff took part in. The participation of children was also important as it gave them an opportunity to learn in a practical way how to plant trees and how the community work was organized. *Photo: Stefan Flist*

They could no longer see themselves as extension workers there only to implement project goals, but rather as learners. And learn they did.

Through their participation in the community's own activities the project staff became aware of a great deal of traditional technologies, organization forms and agricultural, animal husbandry and handicraft activities that were carried out by the people. They also realized that much of this knowledge, many of the technologies and the organization forms were much better adapted to the local reality and culture than any imported, improved technology could ever be.

Due to the wealth and relevance of local knowledge it was decided that it should be documented. This was done in the form of *fichas*, simple printed information ▶

notes. Based on information received from farmers and written up by the project staff for redistribution to the people during meetings and other community events, this compilation of local knowledge became a major project activity.

Analysing the information in all these hundreds of *fichas* that had been produced, the project staff realized that the indigenous knowledge had great potential that had not yet been fully utilized. As there was a potential to use this knowledge as the basis for development, it was felt that efforts should be made to revitalize it. In doing this it was quickly learnt that by building on this base rather than on imported technologies one considerably reduced the tension and contradictions that had plagued the earlier project activities. These *fichas* also provided a method for horizontal, farmer to farmer and community to community, communication thus increasing the communities' ability to support each other in dealing with common problems.

Through the assessment and use of this local knowledge it also became apparent that for the peasant to carry out productive activities it was not only an appropriate technology that was required. Other aspects needed to be considered. These included:

- each product being produced is part of the total household production which in its entirety had to cover the needs and requirements of the household.

- production activities are carried out within a larger social and institutional framework and these institutions provide both services and carry obligations for the producer. The work must be planned and organized within this framework.
- the necessary tools and inputs have to be procured or manufactured.

It is only then, that the chosen technology can be applied to produce the goods.

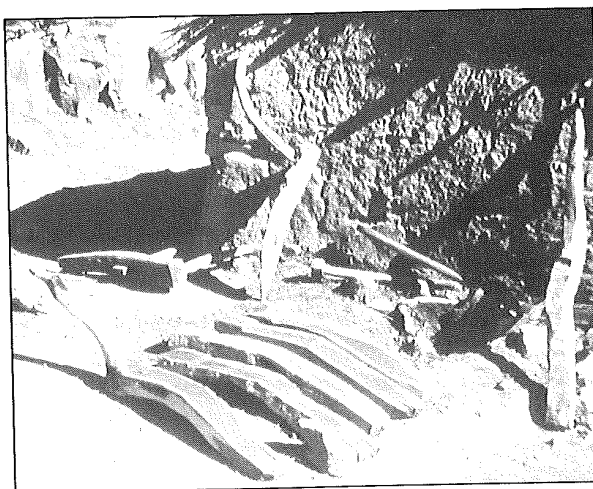
By recognizing all these different elements the necessity of redefining participation becomes apparent. The use of a specific technology is the end result of a process which to a large extent is determined by the culture in which it evolves.

If the above analysis is accepted then the aim of participation must be to allow the professionals to take part in this process in order to eventually be able to identify and help develop appropriate technical alternatives.

In the following an example is given of how this kind of "participation" has led to the activation and increased capacity of an Andean community to implement their own development agenda.



An Indian family having lunch in front of a temporary fence made of *kewina* branches which is used to keep the animals together during the night. At the same time the potato field is being fertilized. After two to three nights the fence is moved to another field thus eliminating the problem of manure transport. This is one example of effective local technology documented in the *ficha*.



Wooden ploughs made from *kewina* are manufactured by local craftsmen.

Photos: Stefan Rist

Agroforestry in the Community of Chorogo

Chorogo, one of the communities with which AGRUCO has been working, lies in the valley of Cochabamba, in Quillacollo Province, Bolivia. In an area of about 16 sq.km. 550 people (125 families) produce crops such as potatoes, other Andean tubers, quinoa, cereals and maize and keep animals, mainly sheep and llamas.

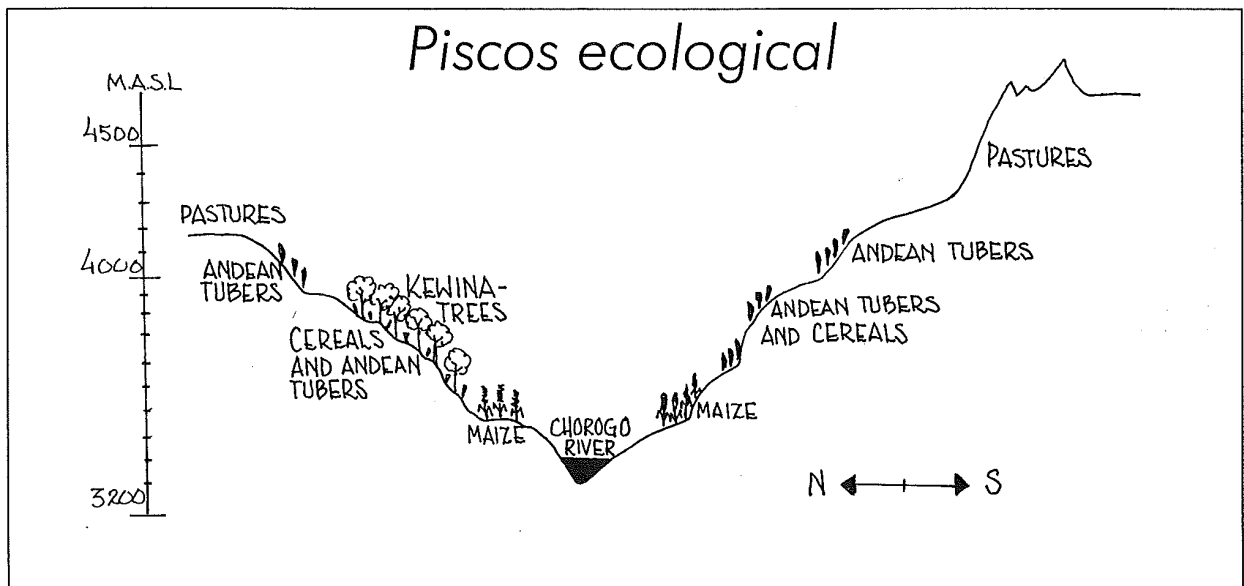
The topography of this area is quite typical for the Andean part of Bolivia - large valleys with a temperate climate are surrounded by steep slopes which interconnect the valleys with the altiplano-plains (high plateaus) and the Cordillera mountain range. Chorogo is situated on one of these slopes and its farming land extends over a wide range of altitudes. In the lower part that lies at 3200 m.a.s.l. it is possible to grow maize and fruit. Halfway up the slope the villagers have built their houses. In the higher area which reaches 4600 m.a.s.l. it is possible to grow some Andean tubers which are frost resistant. Animals are also grazed here during the rainy season from November to March. In summary the landuse system can be described as a typical system of vertical "ecological floors" (*pisos ecologicos*). The Andean peasants make use of this altitudinal variation for different kinds of production and thus minimize the risks involved in household food production. This risk distribution strategy is typical for the Andean peasants. In the case of droughts, which are frequent, there is always enough humidity in the higher areas to allow for at least a crop

of the Andean tubers, whereas in the lower parts during these years the cereals and maize are lost. In the event of excess of rainfall, which is also very common, the tubers are likely to rot on the higher slopes but the maize and cereals will do well in the lower drier areas.

One of the particularities of this community is that the northern slope is covered by a not too dense forest of *kewinas* (*Polylepis sp.*). This indigenous tree species is very frost resistant and can grow up to an altitude of over 5000 m.a.s.l. which explains why it has the local name of "king of the mountain". It is within this lightly forested area that the farmers grow some crops which are protected from the more extreme weather conditions of frost, hail, intense solar radiation, etc.

The technical solution

When AGRUCO started to work in the community in 1987 the project staff realized the value of this remaining traditional agroforestry system for the community. Working in what can be called a conventional manner, the project made an "objective" study of this system and the technical problems threatening its survival. One problem identified was that there was no natural regeneration of the trees because the animals were allowed to graze there. Another problem was the depletion of the trees which were being cut for fire and construction wood and for opening up new crop land for the growing population. In consultation with the forestry specialists▶



the project came to the conclusion that the forest should be fenced in to prevent the animals from grazing and thus allow for natural regeneration. Also to further increase the supply of wood it was decided that trees should be planted on the south slope of the Chorocho river where it was felt that soil conditions were suitable.

This solution was presented to the community and their reaction was impressively clear. There was no way they would allow for the forest to be fenced in. The browsing and denser pastures in the woods and the crop residues were needed as feed for their animals. They also rejected the proposal to plant trees on the southern slope; they argued that they had sufficient trees on the northern side.

The people's solution

During this same period the new approach of the project was evolving. The more the AGRUCO staff participated in the activities of the community the more integrated they became in the rhythm of the community life. The importance of the information gathered during what can be termed Continuous Rapid Appraisals (ie. continuous dialogue with the people during group meetings, structured and semi-structured interviews, action research, mapping participating in labour work and feasts) became more and more apparent and the information documented in the *fichas* more and more impressive.

Many of the practices, forms of organization, technologies and rituals that had been documented in the *fichas* were being used by the peasants as well as by the professionals.

With the focal point on the revival of the local knowledge and its documentation we achieved the full participation of the project because the things being researched were the peasants own knowledge and experiences.

Through this methodology we learned to look at the agroforestry through their eyes and understand that it could not be addressed separately, it was part of wider strategy, ie. "security of life". As part of this the trees played a specific role which was defined by the families and codified in their local organizational structure. It is not possible to list all the roles of the trees but a few examples are given below. These examples are taken from information in the *fichas* about the different uses of the *kewinas*.

Kewina trees provide fodder (photo A), construction material (photo B), and help maintain soil fertility (photo C).

Photos: Stefan Rist



A. An Indian women cutting *kewina* branches to feed her sheep.



B. A roof is constructed using branches of *kewina* (*Polylepis besser*) covered with *thola* (*Baccaris obtusifolia*).



C. A field in the *kewina* forest during the fallow period, where pigs are fed on leaf crop residues. Note the darker soil under the tree indicating a higher soil fertility and the traditional way to protect a young *kewina* seedling using a pile of stones.

Leaves are used for fodder for animals, organic material to improve and fertilize the soil, medicine for rheumatism. **Branches** are used for firewood, wood for constructing of houses, tools, watermills etc. **Bark** is used for colouring, as organic material for soil improvement, medicine against flue. **The whole tree** is used as living fence, humidity trap, protection against hail, wind, intensive sun radiation, for securing denser pasture and reduction of erosion.

A clearer understanding of the rationality behind the animal husbandry management system was also gained. During the rainy season the livestock stayed in the higher areas where it was only possible to grow grass not crops. Here sufficient grazing is found until the crops are harvested on the middle and lower slopes. After harvest the animals are brought to these parts to feed on crop residues. When this source is depleted the shepherds begin to cut the branches of the trees for fodder until the rains begin again. With this information it was easy to understand how irrational the suggestion to fence off the area really was. It would have resulted in feed shortages for the livestock.

The other suggestion to plant trees on the south slope was irrational as well. It was learned that during the years with less rainfall the crops grew better on the north slope as the trees helped to attract and conserve humidity. In years with high rainfall crops did better on the treeless side.

Different rotation systems were developed for these two areas as well. On the north slope with the trees the rotation began with three crop years followed by three fallow years. On the south side the rotation was three years of crops followed by four to seven years of fallow. These two circles of production were interrelated and complementary. Once aware of this the proposal to plant trees on the treeless side was recognized as being irrational and it was understood why the farmers had refused it.

This greater understanding of what the farmers were doing and why opened the possibilities for a totally different relationship between the community and the project. In the monthly meetings the community members proposed the activities that should be carried out by the project. This new relationship was later formalized with the establishment of a two to three day annual meeting during which the community drew up a working plan for the coming year, outlining the contribution of the community and of the project. ▶

At one such annual meeting the community expressed their interest in the project finding alternatives so that the agroforestry system could become more sustainable. They demanded, however, that these alternatives be in line with the needs of the community and their existing landuse and animal husbandry management systems. Because the project staff had gained such an increased understanding of the community, the way the people think and what possible regulating mechanisms existed they were able to make a much more appropriate suggestion than the fencing in of the forest.

In the meetings with the community a series of alternative actions to help preserve the agroforestry were put forth. These included several different types of activities.

Improved organization

At the organization level the community decided to enforce more strictly the existing law which prohibited the cutting of trees for wood selling, fodder or charcoal production. This was done by increasing the fines for offenders.

They also decided to modify the existing rights to cut trees. By custom, when a young couple is getting married, trees can be cut for constructing the new house. It was decided that the number be restricted to five and that permission from the local authorities would be required.

Wood alternatives

The community requested that the project bring in other trees like pines and eucalyptus which could be used as alternatives for house construction, manufacturing of tools etc. in order to reduce the use of *kewinas* for these purposes. They also requested that the project carry out research on the possibilities of growing some bush vegetation which has high value as firewood so that the *kewinas* could be used less for this purpose.

The community also planted some *kewinas* trees in deep eroded gullies, areas which were safe from grazing animals due to the steep topography.

Animal husbandry management

The community was aware that the grazing was the main reason for the lack of natural regeneration of trees. It was decided that attempts should be made to

improve the quality of the pasture in the high land so that the animals could remain there grazing longer in the season. This would relieve part of the pressure of the need to graze in the forest and could even provide the possibility of closing off smaller areas for regeneration. Some work on the improvement of pastures in the higher area such as the digging of ditches in certain erosion prone areas to improve water infiltration and minimize runoff could also be carried out. Other ways to manage the livestock to decrease the pressure on the forests were to be investigated.

Conclusions

With these few examples we have shown how important a true participatory approach can be. The role of the extension worker and the specialist is no longer to execute predetermined technical goals but rather to learn to understand the dynamics of the community through active participation in it. Once this insight and an understanding of the local knowledge has been gained the extensionist's role as catalyst becomes clearer. By revitalizing the local knowledge the community begins to act and can effectively implement their own development programme which consists of ensuring their own livelihood in harmony with their own culturally defined rationality. □

Are you interested in these *fichas* on indigenous knowledge?

AGRUCO forms part of a network of 7 institutions in Bolivia, Peru, Ecuador and Chile which are working on the documentation of indigenous technologies. The network centre is in Peru at PRATEC (Project of Andean Technologies). In Bolivia, AGRUCO is responsible for receiving and compiling all the national contributions. These are then sent to Peru where PRATEC arranges for their printing. At the moment it is possible to order a list of all the available *fichas* (at a cost of USD 0.5 plus mailing charges) or the complete set of 6 volumes (at a cost of USD 80 plus mailing charges) from the address below:

AGRUCO, Casilla 3392, Cochabamba, Bolivia.
Fax no. 042 33805. (They are only available in Spanish.)