

Application of Qualitative and Quantitative Research Methods in Development Domain: Sharing of Some Anthropological Experiences from Rural Development Projects

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1.0 Introduction:

The principal objective of this paper is to share the experiences of the application of use of qualitative and quantitative research methods in development projects in rural Nepal. The Nepalese development practitioners predominantly use quantitative research technique, that is, survey research. Since 1980s, there has also been the trend of the use of qualitative research in the development programs/projects, which was mainly used by foreign and native anthropologists in 1950s, 1960s and 1970s. This paper has been effortful to share with the larger audience on how qualitative and quantitative researches have been used by the development practitioners including research consultants. The paper starts with the notion of qualitative research, and discusses its historical use in the fields of ethnography, cultural studies, and human behavior. Attempt has also been made to review theoretical application of qualitative research as used by some of the eminent sociologists and anthropologists. Indeed, the body of this paper is a synthesis of the author's experiences of using qualitative and quantitative research techniques while conducting the baseline/feasibility, and monitoring and evaluation studies for the rural development projects.

Qualitative research is a field of inquiry in its own right. It is a set of interpretive activities (Denzin and Lincoln, 2005). It is an interdisciplinary, trans-disciplinary, and sometimes counter-disciplinary field. Anthropology, by its definition, is a study of human beings. Anthropologically speaking, the study of the total behavior of a society or an individual cannot be measured in numerical values nor it can be weighed in a balance. The life of human beings depends on the meaning of phenomena which are directly associated with the society for survival. The society can survive with the meanings of some words, actions and evidences. The meanings are shared, observed and recognized by the common group (that is social fact). The shared meaning of social fact is culture. The term 'culture' denotes the whole life style and the guiding principle of a particular group of people. Thus, the term 'culture' is different, the meaning of social fact is understood differently, and the society is varied and multiple or

pluralistic. Anthropologists and scholars have long attempted to look at and understand the meanings of culture with native perspectives, which is done with the use of qualitative research.

More specifically, anthropology is a science that concerns with human behavior, its meaning and knowledge to cope with the environment for survival. The science follows certain norms, i.e. objectivity and logical and systematic analysis of knowledge. Anthropology is unique among scholarly disciplines in having two major intellectual traditions—one scientific, the other historical and interpretative (Bernard: 1988).

Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretative, material practices that make the world visible. When Erving Goffman studied in his psychiatric clinic and prison, he was capable to capture general structural features of what he called 'total institution'. He was also confronted with such depersonalizing modes of behavior as institutional clothing, the lack of privacy, constant surveillance, a regimented daily timetable and so on. Through the construction of 'sub-life' in the institution, attempt was made to safeguard the survival of patients and prison inmates as subjects. This study was conducted by using qualitative research method (cited in Flick et. al. 2004: 4). Qualitative research runs the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. The qualitative researcher studies things in the natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them (Denzin and Lincoln: *ibid*).

The role of anthropologists is to apply the knowledge on the engineering of human behavior and social arrangements. The anthropologists have made important contributions studying human nature and the human conditions, but have participated marginally in the successful application of social science to the solution of practical problems. Anthropologists can involve themselves in the engineering of human behavior and social arrangements through research either by developing inputs into social project planning or evaluating projects that are already underway (*ibid*). The new knowledge can be produced applying the scientific research method extracting information from the social world. Thus, the role of anthropologists is to extract information through participating social life, observing the pattern of behavior of the community and the individuals and function of social institutions. This method of research is called as qualitative method, which focuses especially on the total behavior and characteristics of human culture rather than the numerical value of any event or phenomenon. Hence, it is also a science of humanity. Bernard (1988) has listed three important contributions to make the science of humanity:

- (i) the development of cross-culturally useful concepts about the nature of the human condition—concepts that can be tested by social researchers in various disciplines throughout the world;
- (ii) the acquisition, under natural conditions, of accurate data on human behavior and cognition throughout the world;
- (iii) the liberation of social scientists to engage variously in humanistic and scientific inquiry as issues require.

The cross-cultural study, natural condition of human behavior and the humanistic and scientific inquiry have direct relationship with the quality of human life and their social arrangements. The social arrangements are highly subjective matters, which normally cannot be measured in quantity. Therefore, the extraction of new knowledge will be more accurate through qualitative information.

Qualitative research is an in-depth description of social reality using natural language. It gives empirical ideas in a variety of subjects extended from sociology via psychology to cultural studies, education and economics. It is an applied method of study, which can be used, in social works, nursing, or public health (Flick et. al. 2004: *op. cit*). The notion of qualitative research is thus an applied, empirical and natural description of information to understand the social reality entering into life or describe life worlds 'from the inside out,' point of view of the people who participate. It is a thick description of social reality. So it attempts to answer the questions like; how a phenomenon is associated with other phenomena?; how an event affects other events and what would be an interrelationship between them?; it focuses on the cause-effect relationships of any cultural and behavioral pattern of a society or group of people. In fact, qualitative method is a diagnostic method to find out the consequences of any event that occurs in the society such as the pathologist or a medical scientist makes diagnoses of the cause of illness and recommends its remedy explaining its short term as well as long-term consequences.

The qualitative research method has been used in both the areas, basic and applied research. Clifford Geertz used it to observe the culture from the native point of view. He studied culture as system of symbolic form. The thick description of culture is an emic analysis, which is more accurate and reliable interpretation of cultural system within a particular setting of world-view and indicates as to how a member should live, feel, think, and act there (Flick et. al. 2004).

Qualitative method is a prescriptive method of social facts and as indicated above, it is applied in project design, planning and evaluation for understanding the social facts to design and understand success and failure of any

development project. More specifically, the application of qualitative research in development projects helps to explore the social reality, diagnose the problem to design the project, recommend the measures for the improvement and planning the concerted action for the success. Below is provided a short analysis on the application of qualitative research in the rural development projects in Nepal.

2.0 Application of Qualitative Research in Project Design

The government of Nepal planned to implement a Rural Access Improvement and Development Project (RAIDP) to benefit the local farmers constructing an agriculture road for the marketing of agro-products with the World Bank assistance. The aim of the project was to improve the institutional capacity of the decentralized governance system for rural infrastructure development in line with government's decentralization policy. The investment areas included district roads, trails, tracks and footbridges. The project envisaged to strengthen the beneficiaries especially the community-based organizations (CBOs) for carrying out small-scale construction works instead of employing the contractors. The lesson learned from the past project for the same work called Rural Infrastructure Project (RIP) introduced community mobilization, which had been replicated for gaining the success of project. The volume of work was to prepare a baseline data of the project area, identification of likely affected people and severely affected households, the beneficiaries and the local level implementers as road construction groups.

Both the quantitative and qualitative methods were used. More specifically, the baseline information was collected administering survey questionnaire, which helped to count the number of households, collected demographic data, quantities of the loss of private properties, agricultural land, common property such as land, forest, water and cultural resources such as temples, idols, monuments, religious places, school buildings, drinking water taps and other sources, etc. But the inherent quality of those quantitative data was measured applying qualitative methods. The resource use pattern, ownership of communal resources, reason of poverty and illiteracy, need of employment and income generation activities, indigenous knowledge system, attitude of the people towards the development projects, gender issues and women empowerment, urgency of local road, and willingness to participate and to contribute for the road construction were analyzed using qualitative methods.

2.1 Tools Used for Data Collection

The major tools that were used for this project were: (i) social screening; (ii) semi-structured interview; (iii) focused interview, and (iv) field observation.

2.1.1 Social Screening:

Screening is a process of detailed work and collection of comprehensive information of the project. While designing RAIDP, following tools and parameters were adopted for social screening:

Socio-economic screening: identification of project site, project type (new or existing or upgrading), the area of project influence, beneficiary settlements, nature/quality/entitlement of land and natural resources passing through the road (private, government, community forest, conservation area/natural forest), type of ethnic/cultural groups settled along the road alignment, major occupation/source of livelihood, religious/cultural sites, etc.

Economic screening: information consisting of land use pattern in the alignment of community, land ownership issue and tenure right, use of resources such as community forest, grazing land natural forest, water (drinking and irrigation) sources, etc; private public buildings/houses, sheds and other construction, subsistence pattern and livelihood.

Demographic screening: Enumeration of total number of households/population affected, caste and ethnicity of the population, total women headed households, tentative no. of vulnerable individuals/households and community.

Social service and development status screening: access to education, health service, drinking water, irrigation system, market and trade centers.

Negative impact screening: The assumed negative impact of the project such as land acquisition, involuntary resettlement, social cohesion, loss of occupational profession, loss of existing trade/service centers due to road alignment.

Development potentialities screening: agriculture, trade and commerce, health, education, communication and other development possibilities.

Managerial and organizational potentiality screening: The responsibilities of the procurement/mitigation of the project impacts on land acquisition, resettlement, compensation, income generation or incentives (by whom?).

Information dissemination to District Development Committee (DDC), Village Development Committee (VDC), and Community-based Organizations (CBOs) or Non-governmental Organizations (NGOs):

Method of Screening: Review of literature, field survey, key informant interview, and focus group discussion.

2.1.2 Semi-structured Interview:

The semi-structured interview was used to collect the information from the major stakeholders of the road project such as District Road Coordination Committee (DRCC), Village Road Coordination Committee (VRCC), Local Road Users Committees (LRUC).

A semi-structured, semi-standardized interview checklist was prepared for interview to facilitate informants to participate in the interaction and was applied in the group and in the institutions like DRCC, VDRC and LRUC. It played an important role to generate data and develop further methodologies. This is a sort of public debate where people from the multiple cultural groups participated. This helped to construct new questions about gender relations, income generation, and women's property right, social empowerment of excluded groups. This method was more productive in the interpretation of local behavior of the people through their own interpretation of the situation. The local stakeholders were free to express their views about the DoLIDAR road and its significance. The DRCC as an institution seemed to be a mediator to channelize the resources received from DoLIDAR. DRCC was a committee formed by the locally elected representatives in (DDC) whose election manifesto explicitly spells out about the development of the district and the semi-structured interview bound them to agree on the DoLIDAR terms and conditions for the development of agriculture roads.

The VRCC as a next gateway to DoLIDAR project coordinates in the local or village level aiming at empowering women, generating income, and creating self-employment. The interview reduced the chance of domination of privileged groups, which normally occurs in Participatory Rapid Appraisal (PRA) method. The presence of heterogeneous group helped to triangulate the information at site because this was a narrative interview, and thus the information collected was closer to reality. The LRUC was a construct of DRCC and VRCC. The concept of LRUC was one of the measures to create local employment. The Local Road Construction Committees were organized to construct local roads by the use of local laborers. This concept discouraged to employ outside contractors. These all committees functioned as an institution by their own constitution. All these institutional set ups were activated through semi-structured interview, which was more transparent, unbiased and practical.

2.1.3 Focused interview:

The focused interview was developed in the 1940 in relation to communication research and propaganda analysis, by Robert Merton,

Patricia Kendall and others (Merton et. al. 1946 cited in Hopf: 2004). This interview was applied to collect information from Local Development Officer (LDO), District Transport Officer (DTO) and District Development Committee (DDC) overseers using semi-structured interview guide. These personnel were involved in Rural Infrastructure Project Rural Infrastructure Project (RIP) implementation. The focused interview was conducted to understand the previous experience on patterns and problems of RIP implementation. RIP was the earlier stage of RAIDP. The RIP was the pre-RIDP that has created a guideline for implementation of RAIDP. The LDO, DTO and DDC overseers were asked to share the procedure of RIP implementation, benefit sharing, conflict resolution, income generation, and women empowerment issues. They were asked about the beneficiaries' perception towards the ownership over road. It was concentrated on the biography of the project to gain access to the history of RIP and formulate new strategies for RAIDP. More flexible questions were asked to the interviewees to feel free to summarize their experiences. It was learned that implementation of construction project like road is not an easy work albeit it was a development work for the local people. The local people lose their land and other properties along with getting transport facilities but the road itself has not been considered as public property since people are not benefited directly and immediately. The findings of conversational interview encouraged employing social mobilizers to reduce local conflict and encourage community participation in road construction.

2.1.4 Field Observation.

It was an empirical investigation of the human behavior. The grievances against loss of property due to road construction and happiness to have access to road were observed using walkthrough survey. A small observation checklist was prepared and used to collect the observation data. Primarily, the alignment and physical condition of the road and the public eagerness and willingness to take ownership over the road was observed. The observation was used to monitor the pattern and feeling of responsibilities of minor maintenance of local road by the Local Road Coordination Committees (LRCCs), road construction committees and the institutions like VDCs. The meeting of the LRCC was observed, and some notes were made on the issues raised by the committee members. Photographs of the physical condition of road were snapped (e.g. sleeps, edge erosion, standing water in the potholes). The function of LRCC was observed during post construction period. At least, one meeting was held with the LRCC in each road section and major issues and problems were noted down and analyzed.

2.1.5 Data Analysis:

The field level qualitative data collected through various tools were thematically categorized in the process of analysis. The data obtained from the semi-structured interview and focused interview were checked with the reports prepared earlier on by different committees and compared with project documents. The discussion reports were triangulated during field observation. The procedural aspects of the DRCC, VRCC, and LRCC mentioned during communication were verified in the field and the report was prepared mentioning some of the corrective recommendations.

3.0 Qualitative and Quantitative Research Techniques Used in Feasibility Study:

A feasibility study of proposed international airport was conducted applying qualitative and quantitative methods. The proposed international airport site at Lumbini area affects some of the wards of the VDCs, viz. Rudrapur, Suryapura, Sandhi and Vishnupura of Rupandehi district. The major alignment of the airport lies into the Ward No. 1, 6, 7, and 8 of the Rudrapur VDC, 6 settlements of the Suryapura VDC's Ward No. 5, a small cluster (consisting of about 4 families) of Sandhi VDC Ward No. 1 and a very small patch of land of Vishnupura VDC. Observing the above-mentioned geographical as well as political boundaries of the area, wards and some of the clusters were sampled following the area sample method and the households within the area were further sampled to conduct field survey. Household survey was conducted using survey questionnaire, but major part of data collection was done through PRA (semi-structured interviews, observation, and case study).

PRA was used to explore the historical information of the settlement where the airport proposed to be constructed and the settlement was needed to be translocated. Following tools were used to collect data:

3.1 Household survey:

It was conducted using survey questionnaire for the collection of quantitative information on socio-economics and demographics.

3.2 Semi-structured Interview:

The intention and perception of the people was measured through group interview because the Rudrapur VDC was illegally occupied by migrant squatters and they were not ready to be evaluated since the land belonged to a Rana oligarch. The local politicians illegally captured it after the commencement of *Panchayat* system (a party-less political system that was abolished in 1990). Therefore, the case of the area was complicated, and was not easy to obtain

reliable data applying personal interview and household survey. People were aware of their displacements because the land was not registered on their names and intended to get full compensations from the government against land and other property. In such case, PRA method was used to gather and triangulate information at a time. In PRA, a diversified group was invited for group interview focusing primarily on the status of land ownership of the occupant, history of migration from hill districts and illegal trespassing and the attitude of the people to leave the area. The open interview in a group discourages the respondents to exaggerate the facts and was immediately corrected if somebody misreports. In fact, the interview also triangulated the household level personal information. The drawbacks of personal interview during household survey include less accuracy and estimation. The respondent does not become serious to provide actual information while s/he is enumerated privately.

3.3 Field Observation:

The field observation was another tool of data collection and verification. Basically, the physical area was observed and the group was asked to prepare social map to locate settlement, concentration of resources, development and basic infrastructures, market area, educational and health service centers, and so on. All data mentioned in social map were used for triangulation. The behavioral pattern of the community, social composition, use of natural resources and access to social services including transportation and communication system were observed.

3.4 Case Study:

The case studies were conducted among some of the economically prosperous and marginal households as extreme cases. Both the types of households were the trespassers in the area.

3.5 Data Analysis:

The quantitative data were analyzed by using computer excel program. The qualitative data were thematically analyzed. The pattern of data was different though they were collected in a common place. The personal impression of the informants was reflected in the interviews and these impressions were categorized according to their socio-economic and educational level.

4.0 Use of Qualitative Data in Project Evaluation:

In modern scientific communities (Stehr 1991, 1994), there is a growing need for scientifically underpinned proof of the effectiveness, efficiency, quality and acceptance of political programs and measures in all areas of society. The

demand is increasing for information relevant to decision making, aids to planning and evaluations because of the scarce resources of public budgets which lead to intensified monitoring of efficiency and costs, and because of an increased awareness of quality on the part of a critical public (Kardorff: 2004).

Evaluation research is an applied research which checks the effectiveness, efficiency, and goal-attainment of political, social, and ecological programs, measures models and laws of intervention of social, cultural and technical innovations and organizational changes in complex environment. Qualitative evaluation research is characterized by a constructivist paradigm, a naturalistic research methodology, and a consistent practice of negotiating goals, by means of openness, transparency, and fairness towards participants, and pluralism of values within a democratic society (Guba and Lincoln 1998; House 1993 cited in Kardorff 2004).

Qualitative evaluation research is concerned with non-statistical representation. This is formative (process-oriented) and summative (outcome-oriented). It aims at specificity and plays an important role in historical aspects of environment and target groups, local traditions, influence of local dignities, and so on. It provides a recursive learning and teaching process with many feedback loops using group discussions, external audits, and so on.

Methods of qualitative evaluation research include different kinds of interviews, participant observation, network maps, sequence documentation, document analysis, fieldwork, and personal records made by investigators. Sometimes a descriptive statistics is also used focusing on shared learning from citizens thorough conversation (Kardorff 2004).

The above-mentioned theory and method were used in evaluation of middle Bagmati watershed management project in Nepal. The watershed management project required assessing impact of the program on human life, its implementation procedure, strengths and weaknesses of the project, and recommending future plan with prescribed program policy.

The research area was selected in southern Lalitpur and Kabhrepalanchok district as a sample. The watershed management programs were soil conservation through tree plantation, terrace and trail improvement, and grazing control. All these programs were effective measures for watershed management. The program was focused for the farmers. The procedure of implementation was participatory. Farmers were advised to plant tree seedlings and cuttings in their land. The plantation was a sort of incentive. The project used to provide the financial support for transportation, pit digging, planting, manuring, and guarding. The priority of the project was plantation to control soil erosion and landslide. The hidden objective of plantation was to control tree cutting for firewood. Farmers keep cattle and sell *Khuwa* (the milk cake) because there is

no market for raw milk. The nearest market center is Panauti situated at about four hours walking distance, and transporting milk was impossible. Therefore, milk was condensed into *Khuwa* for which a higher quantity of firewood (at least ten kilograms) is required to convert five liters of milk into *Khuwa*. Each and every household prepares *Khuwa* ranging from one kilogram to ten kilograms and hence, accelerated deforestation took place. The project aimed to control the deforestation but after five years, the whole program failed. The trail improvement was welcome. Terrace improvement was also not acceptable because of the lack of irrigation facility. Choice of dry crop was the limitation of the farmers'. The subsistence economy was supported by animal husbandry, the dairy product was a year round source of cash income.

During the qualitative evaluation of this project, a PRA method was used. Focus group discussion, personal interview, case study, social mapping, preparation of transects, walk through survey, open interview, and observation were used as PRA tools. The PRA helped to share the experience of the decision making processes on the selection of seedlings, plantation, monitoring of the activities, and interest of the farmers. The farmers were asked to prepare the social map of the area, in which the resource condition, location of available social service center, schools and market, farm land, forest, settlement area, trail, sources of water, etc; were presented. The findings were categorized into different themes such as the use of forest resources, farming systems, seasonal farm activities, and division of labor between male female and children (according to the socio-economic and educational hierarchy of the households). The data were analyzed applying simple statistics such as tabular presentation of the demographic data, wealth ranking, education and occupational information, etc. It was concluded that the reason of failure of the project was none participation of farmers in the process of decision making, planning and monitoring. The project was planned in Kathmandu. The Kathmandu stationed foresters decided the types of trees to plant in the land of the farmers in the project areas, and the terrace improvement program was designed by the survey engineers and implemented without visualizing the possibility or availability of irrigation.

A number of learnings were generated from the survey. These included: (i) the average land holding size was below 0.5 hectare; (ii) the average family size was 6 and animal holding per household was 5; (iii) annual food sufficiency from their own production was for less than 6 months; etc.

The PRA generated a number of other findings: (i) highest education facility was primary level; (ii) primary level school teachers were also employed from distant villages, and (iii) lack of veterinary, and agricultural service centers in the settlement. The indigenous knowledge system preferred dry crops, emphasized on more animals for dairy products, small and bushy types of trees

and fast growing fodder plants. The project provided mostly the pine trees and large timber trees to plant in the slopy areas where farmers used to grow millet and wheat. Thus, the plantation program failed as unwanted pressure to farmers. Money for terrace improvement was accepted and some of the terraces were improved and leveled but there was the lack of irrigation. Earlier, farmers used to grow dry crops but after the intervention, they demanded for irrigation, which was not in the program of the project.

The demand of the farmers was broom grass plantation, which had triple benefits; it was a good quality grass for cattle, flower is used as broom and the straw was used as firewood. The broom is a cash crop so it helped to control soil erosion, and helped stall feeding of the cattle, and there was no problem of shed in the farmland where there was the big tree's shadow and its dry leaves could damage the crop yields. The next demand and solution of controlling deforestation was construction of ropeway from the settlement to the roadhead. All these practical solutions were recommended to the project in the evaluation report and project followed it in second phase planning. The project helped distribution of broom grass to the farmers, and constructed three kilometers of ropeway from the settlement to the roadhead from where a vehicle carries goods to Lalitpur city areas. It helped farmers to sell their milk, vegetables, fruits, and any other surplus from household consumption. Thus, the project got success applying the recommendations obtained using qualitative evaluation.

5.0 Conclusions:

The qualitative research method is a comprehensive research method. It guides the researcher to look at the point of view of the people who are studied. Qualitative research method explores the factual reality with reasoning of the social events and happenings. It helps to understand the meaning of every behavior of people, since it requires in-depth study of the subject primarily observing and participating in the field. The tools are less structured and more open type and the respondents may feel easy to answer the research questions, and at same time, the researcher can be acquainted with the behavioral pattern of the respondents by facilitating to answer the questions. In this paper, the use of qualitative research method helped the researcher to understand the need of the development intervention in the life of rural people. The reasons for it were poverty, illiteracy, ignorance, and reluctance. The case of RAIDP was feeling of urgent need of the transport facility in remote areas, which was out of access of the people. In case of feasibility study of international airport, it was a sort of reluctance, and ignorance, and avoidance of rules. The qualitative research method helps to study any type of social problems related to crowd behavior, social problems, economic issues, political propaganda or psychosocial problem of an individual or group. It covers the cultural, ecological,

social, environmental and any types of developmental issues in the modern as well as in the postmodern world. It is, therefore, findings of different studies related to development issues presented in this paper are the outcome of the application of qualitative research method by which the respondents' opinions were reported and interpreted fairly. The beauty of qualitative research was noticed that it urges the researcher to enter into the respondents' perspectives, understand their problems and interests, communicate and clarify the problems and obtain answers, that needs less triangulation. In almost all cases of research conducted by the author using participatory method (in which focus interview, open interview, and observation were the major tools of data collection), he got more cooperation from the respondents, which helped to triangulate the information.

But qualitative research alone does not help to generate the data needed for the development project as indicated above. Though it helps to generate substantial amount of subjective data, there is also the need of the quantitative data for the baseline/feasibility, project design, and monitoring and evaluation studies. Therefore, as explained above, quantitative data are also to be used as per the need of the rural development projects. The combination of the qualitative and quantitative data helps to develop an integrated picture of the development-oriented projects.

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