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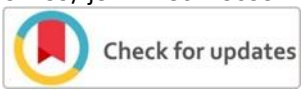

Comparison of Community based Projects and Community Owned Projects

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***Abstract*—** Community development projects (community projects) are established in the communities to enhance the lifestyle and living situation of the communities. In the area under observation, some of these community projects that were established for the welfare of the communities get failed or were not sustainable, despite having heavily foreign funding, state of the art construction and astonishing infrastructure. But, some of these projects which are locally funded, have some vague structures that are well operated and give effective outcomes for the community. This research is investigating the reasons for the failure or success of these community projects.

The objective of this study is to examine the failure of community-based and highlight the success of community-owned micro hydro power projects in the northern areas of the Khyber Pakhtunkhwa Province of Pakistan. This research is based on both qualitative and quantitative approaches. A survey has been conducted based on questionnaires and interviews. The outcome of this research will help the development authorities and other funding donor agencies to provide guidelines and strategies for better improvement of their future community project development.

***Keywords*—** Community projects, Project failure, community based and community owned projects, community involvement, Micro Hydro Projects in KP.

I. INTRODUCTION

Billions of dollars have been spent in rural areas around the globe to upgrade the living situations of the communities [1]. A number of projects are working to facilitate the communities with health, power, food, education, water and other essentials of life. These projects are normally driven by public sector organizations or by Non- government organizations (NGOs) as a strategy to fulfil the needs of the community and create more opportunities for the locals to better identify their problems and challenges and creates opportunities to better respond to their future needs [3]. Despite, these approaches of wellbeing to the communities, the dilemma with some of these projects are that most of these projects are experiencing major hurdles to sustain their life cycle, besides having effective construction and state of the art infrastructure. In most cases, these projects are terminated after a few years of operations. According to the study, almost 40 % of the community projects did not continue after their first few years of operations [5]. It is due to the fact that most of these projects are built with the focus on technical aspects of the projects without paying sufficient attention to its social and long term sustainability factor, thus causing failure of the project [5]. For the sustainability of any project, it is necessary to give enough importance to the social aspects and community acceptance of the project [5].

This research is focused on the MHP's Projects in North-West region of Pakistan, Khyber Pakhtunkhwa Province. The purpose of this research is to identify and analyze the factors influencing the community projects, to highlight those issues and manners which causes the failure and success of the projects. The outcome of this research will help the Pakhtunkhwa energy development organization (PEDO), Asian Development Bank (ADB) and other funding donor agencies, who are working on different community projects across the northern region of the province to better understand the root causes of the project success and failure.

II. LITERATURE REVIEW

This chapter reviews the literature on the community based and community-owned projects, community involvement and participation in the community projects, social impact of the project on the community, its management, causes of success and failure of different community projects, and interpersonal skills and monitoring as a contribution to the success and failure of the projects.

A. Need of Rural Community Projects

The majority of the communities of rural areas in different parts of the world are living without having access to clean and green electricity. Around 1.6 Billion People in the world, living in rural areas doesn't have access to electricity [9]. The reason is, it is too costly to provide electricity to the rural areas due to the remote locations and low populations. Moreover, due to the poverty in rural areas, and low income of rural inhabitants, it

seems too expensive for them to get access to the main grid. Conventional sources of energy (wood, oil, natural gas, coal etc.) are used for decades for the provision of electricity in these rural areas. [10].

B. Success and Failure of community Projects (MHP's)

With this scenario, MHPP's are well adopted in the rural areas across the world, where there is no access to the grid connection or it has been considered expensive to afford the conventional source of energy. The funding and donor agencies always find it a better option for the communities to uplift the social and economic condition of the rural communities with the help of investment in the energy sector as MHPP's community mini-projects. Thus globally billion dollars have been spending by the donors' agencies to build MHPP's for the local communities and these investment is increasing day by day [1].

With the case of Kenya, where there is huge potential for micro hydropower projects in the rural areas, the sustainability of these projects are big challenge for the donor agencies. A lot of money has been invested on the community projects in rural areas where such MHPP's are the only hope for energy, yet majority of these projects have generally failed or struggling to bring sustainable benefits to the community. It has been observed that although some projects add the element of sustainability in their proposal stage, but the actual implementation of those elements seems to lack emphasis on sustainability.

C. Community Involvement in Community Projects

Community involvement is also an essential factor for a sustainable community project as it is the genuine involvement of the community people as active participants and partners in the project, whose concerns and local experience are important for the project's sustainability. It is the sociological process by which residents of the targeted community gather themselves and get involved in a community project at a different level of the project to improve the condition of daily life. It consists of various degrees of the individual or collective community involvement (Physical or financial contribution, political or social will) at different stages of a project [20].

N2 Gateway Housing pilot project, which is a massive housebuilding project in Cape Town, South Africa was affected due to noninvolvement of the community, because the housing department and local government were not willing to involve the community in the project and the community was also not interested to take participation in the departmental project meeting. Which ends up delaying in the project progress and success ratio [22].

D. Management in Implementation of the Commuunity Projects

Management of the project is considered as most dominant factor for any project, which contributes to project success and failure [26]. it is the set of tools, knowledge and techniques that when applied, will help you to get better outcomes for the project. Managing projects without management are the same as playing soccer without any gameplay, which results in nothing but failure [27]. The Project manager does planning from the top level, and then forward tasks to the other project members, and then follows it up to make sure the team members are doing their duties and completing their tasks on time. When the Management of a project is not well managed and well planned it leads to mismanagement in the projects, which results in failure of the project either it is during an implementation stage or operational stage.

E. Access and Management of Funds

Funding is the factor that could actively contribute to the failure and success of the community project [29]. While calculating the success and failure of the project, the availability of the funds should be importantly considered especially focusing on comparing an amount that has been proposed and the amount that has been received [30]. The fund's availability, the faithfulness of the members of the management of the project are also considered as important factors in the project sustainability. Lack of funding, ill-transparency and mismanagement could impact badly on project success. The success ratio in this regard for the community-owned project is a bit better than that of community-based projects. As there is some limited funding for the community-owned projects, but the ratio of transparency and faithfulness in community-owned projects are higher than community-based.

F. Monitoring and Evaluation

When the project is approved, the management and planning become the base for the project implementation stage, which captures the implementation process and monitoring and evaluation process [32]. It has been observed that many community projects failed to sustain their activities because they are not well monitored. In many such cases, when some abnormalities occur in the project activity, and if it has not been monitored, it creates major hurdles in the project sustainability. And if it has been monitored properly, the project will successfully deliver its objectives

G. Interpersonal Skills

Human resources should be treated in a professional manner and strictly in terms of labour prescription and the manager needs interpersonal skills of high level with his employee during the communal project implementation. They should be able to face problems, can analyze and solve the problems faced during the community project implementation [34]. One of the important factor of the management of the community project is to build understanding between manager and employees and manager should be able to maintain good human behaviour with other employees, been humble, flexible, friendly, accessible and can be able to give guidance and make decisions on personal problems faced by the employees can also affect the project.

H. Selection of Beneficiary Areas for Community Projects

A North West region of Pakistan, particularly Khyber Pakhtunkhwa (KP) and Gilgit Baltistan (GB) provinces are blessed with abundant hydropower potentials, which is yet to be materialized. According to the Feasibility Study report, 2015 of Pakhtunkhwa energy development organization (PEDO), the

total identified hydropower potentials in Pakistan is estimated to be more than 60,000 MW [20]. But unfortunately, only 6900 MW hydropower potential has been exploited throughout the country, which is just 11.5% of the total available potential, while the rest of the potential remains unharnessed [20]. To explore and develop the hydropower potential at the provincial level, PEDO with the help of the Asian Development Bank (ADB) and other donor agencies, are implementing hundreds of Micro Hydropower Projects at the community level for the electrification of rural areas of this province, where local community has no access to the main national grid, and are dependent on these community projects. However, the construction of these projects cannot help these communities, if they fail after a short span of time. In order to make these projects sustainable and more effective for the communities, project failure rates of these systems should be reduced.

TABLE I. AREA WISE MHPP'S POTENTIAL IN PAKISTAN

S. No	Area Wise MHPP's Potential in Pakistan				
	Area	**No.of Potential Sites**	**Potential Range**	**Total Potential**	**Remarks**
1	Khyber Pakhtunkhwa	125	0.2 to 32 MW	750	Small / Micro Based on Natural fall / flow
2	Punjab	300	0.2 to 40 MW	560	Canals
3	Gilgit Baltistan	200	0.1 to 38 MW	1300	Natural Falls
4	Sindh	150	5 to 40 MW	120	Canal falls
5	Azad Kashmir	40	0.2 to 40 MW	280	Natural Falls

In northern areas, installation of MHPP's are supported by the GoP with the help of different non-government organizations such as Agha Khan Rural Support Program (AKRSP), Sarhad Rural Support Program (SRSP), National Rural Support Program (NRSP) funded by Pakistan Poverty Alleviation Fund (PPAF), Malakand Rural Development Project (MRDP), Welt Hunger Hilfe (WHH) funded by Germany and European Union (EU) etc [36]. Northern areas of Pakistan has an estimated potential of 3000 MW for Micro Hydro Projects [37].

III. RESEARCH METHODOLOGY

This Chapter is focusing on the methods of research to be followed in the research study. It contains aspects such as research methodology, research design, target population, sampling, data collection and data analysis.

A. Research Design

A descriptive survey was used in this research study to explore factors that causes the successful implementation of the community-owned projects and explore factors that causes failure of the community-based projects. A descriptive survey is the kind of survey that uses a method of gathering information by interviewing and administering a questionnaire to an individual sample [40]. Data has been collected through designed questionnaires about the impact of community-based and community-owned project from the individual interviews. Hence our research was about two different types of community projects, so two questionnaires were designed. One for community-based MHP's and other one for community-owned MHP's project. The questionnaire was designed to collect data regarding both the projects, which will then be analyzed and concluded to better identify the problem.

B. Sampling Design

Hence the research study has been taken for the northern areas of KP, for which four locations has been chosen for the sampling to be taken. For this purpose, Upper Dir, Chitral , Charsadda and Kalam have been selected, where a number of community-based and community projects have been selected for the research study. The following criteria were followed for sampling from community projects:

- Each type of project must be represented.
- Preference has been given to the literate people i.e. Degree holder, diploma holder etc.
- Technical persons and community leaders will be intervene regarding projects progress.

C. Target Communities

The target communities for this research are the northern areas of Pakistan, where the MHPP's projects have been implemented either community based or community-owned. Target communities include the northern areas are. i.e. Chitral, Swat, Upper Dir, and Charsadda where there is a huge potential for the MHPP's projects and a number of Communities Projects are implemented there. The study was composed of data collection and surveys of projects in these areas.

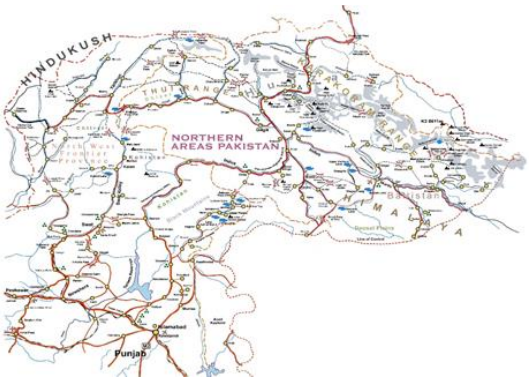

Figure 1. Detailed Map of Northern areas of Pakistan

D. Research Instrument

This research used questionnaires and interviews from individuals as a research instrument for collecting data. Questionnaire was structured and a number of copies have been distributed among the participant's and it has been ensured that each participant is asked the same, precise and simple clear questions that are understood by the participant. Interviews have also been taken from the local people of the target communities regarding project capabilities, its economic, environmental, and social impacts on community. Departmental officials have also been interviewed to get their views and opinions on the community project, people's opinions and involvement in the

projects. Community leaders and elders are also interviewed regarding this matter, and their opinion, perceptions and suggestions for improvement have been recorded. Sufficient data were collected from the questionnaire and interview, which were recorded in the files.

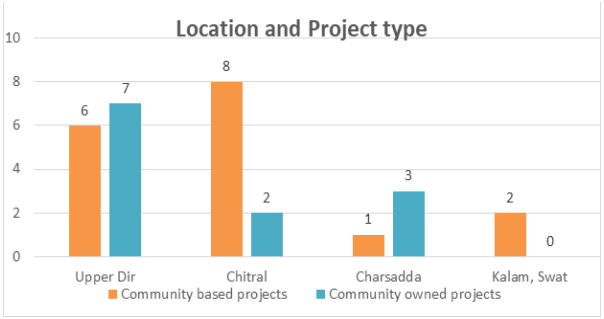

Figure 2. Location and project type of Mhp community projects considered for research study

E. Data Analysis and Interpretation

Data analysis is the searching and arranging the data extract from questionnaires and interviews, field notes and other helping material in some order to increase better understanding of the data, which will enable the researcher to better present, what has been discovered [43].

Figure 3. Jungle Inn MHP Kalam (Swat)

Figure 4. Gharibabad MHP Upper Dir

Figure 5. Jungle Inn MHP Project Site view

The collected was analyzed by using statistical methods. Data was first to be cleaned at the point of collection by ensuring the completeness of the information. As we have taken two samples, one for the community-based projects and other for community-owned projects, both type of Data is then be organized into different categories. SPSS V.20 (Statistical package for social sciences) tool is used to analyze the arranged data for both the samples separately by using descriptive statistical measures in order to answer the research questions and objectives.

IV. Results & Analysis

Two types of questionnaire have been distributed among the community members, technical persons, operators, project owners and community leaders. A number of questionnaires issued to the respondents were 100, In which 50 has been distributed to respondents regarding community-owned projects and 50 was about community-based projects, from which 91 questionnaires have been returned back and selected as reliable data information, and 54 interviews have been conducted. The collection of data was both qualitative and quantitative, which will be presented in this chapter using tables.

Two types of community projects have been selected for the research study, and a comparative analysis has been made to better identify the success and failure of these projects. A total of 4 Places has been visited, and 29 community projects have been identified and examined. Among the 29 community projects, 13 Projects were located in Upper Dir (7 Community Owned Project, 6 Community Based Projects), 4 in Charsadda (3 Community-owned projects, 1 Community-based project), 10 in Chitral (2 community-owned projects, 8 community-based projects), and 2 in Kalam (2 Community-based projects). The distribution of all these community projects are shown in the Table II below:

TABLE II. Location and Project type in Northern areas.

S.No.	Location	No. of Projects	Community Owned Projects	Community Based Projects
1.	Upper Dir	13	7	6
2.	Chitral	10	2	8
3.	Charsadda	4	3	1
4.	Kalam, Swat	2	0	2
Total		29	12	17

All of the 17 Community-based projects were funded by the Funding donor agency. e.g. SRSP, Hashaar, DADO, DOST, AKRSP and PEDO and the 12 Community-owned projects were funded and implemented by the local People, or by funding organization which is then handover to the community. The questionnaire has been distributed among the operators, managers, technical persons, community leaders and other respondents. Project Implementers, project owners, technical persons and local people were also interviewed for the challenges they have faced during the implementation, management and operation of the project.

A. Descriptive Analysis

The collected data was, first of all, entered into a statistical package for social scientists (SPSS) tool. As we have collected data from two types of projects, community-based projects and community-owned projects from which a total of 50 questionnaires each has been collected from both types. The data has been analyzed separately for each project type through SPSS

tool. The information of project management, community involvement, Technical issues, billing mechanisms, interpersonal skills, people satisfaction on the project, and maintenance etc. was analyzed. This was done to capture the comparison of both the community based and community-owned projects. Moreover, the Causes of success and failure have been figured out. The analyzed data has then be presented with the help of tables for better understanding, which will be discussed in the sections ahead.

TABLE III. STATUS OF THE COMMUNITY PROJECTS

S. No	Type of Project	No. of Projects	Operational	Non-Operational	In %
1	Community Owned Project	12	11	1	9
2	Community Based Projects	17	14	3	19

B. *Comparative Analysis of Community Projects*

1) *Upper Dir:*

According to the report from SRSP, there are total of 37 micro-hydropower projects in district Dir, in which 32 were installed in Upper Dir, and 5 in Lower Dir [44]. These 32 micro power plants in upper Dir are jointly implemented by SRSP and EU are community-based projects for the welfare of the community. Among these projects, six projects have been taken into a research study and seven are community-owned projects, which has been owned by the local residents.

Figure 6. Detailed Map of Upper District

TABLE IV. COMMUNITY PROECTS IN UPPER DIR

S.No.	MHPP	Implemented by	Installed Capacity (KW)
1.	Yarkhun	AKRSP	800
2.	Laspur	AKRSP	500
3.	Jingiret Gol	Local	7.5
4.	Jingiret Gol 2	Local	50
5.	Garamchashma	AKRSP	100
6.	Shaghore	AKRSP	50
7.	Shishi	AKRSP	100
8.	Torkhow	AKRSP	25
9.	Lotkoh	AKRSP	25
10.	Golin Paye	AKRSP	50

Table IV shows the details of the selected community projects of both Community based and community owned projects in Upper Dir.

C. *Comparison of the Projects:*

It can be observed from above-listed projects in table X, the projects that are implemented by the community itself are low capacity power projects in comparison with those projects that are implemented by the donor agencies. Community-owned projects are not properly designed and were not in good condition, while that of community-based projects are well structured, having proper mechanisms for voltage and frequency control. Community owned projects have no powerhouse building, but that of community-based projects have well-structured civil work made for the project, including powerhouse building, channel designing etc. All the projects were installed on the irrigation canals, except Patrak bazar project which was installed on the natural flow.

2) *Chitral*

Located among Hindukush Mountains in the northwest, Chitral is the north-most district of Pakistan. AKRSP with the help of Swiss agency of development cooperation and Pakhtunkhwa energy development organization implemented more than 55 micro hydro power projects in the Chitral district.

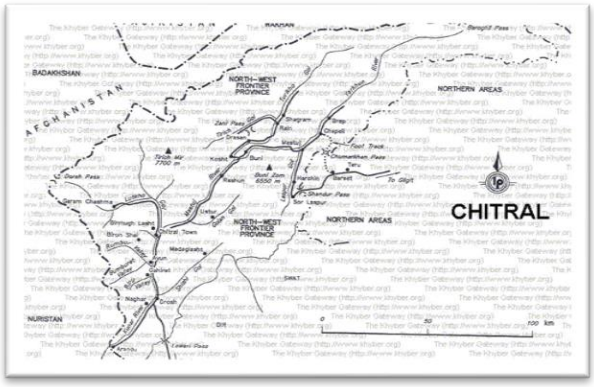

Figure 7. Detailed map of Chitral District

These 55 MHPP's are community-based projects, which has been built for the welfare of the community. Among these 55 MHPP's, 8 projects has been selected for the research study, which are located in different areas of the district Chitral. While that of 2 Community owned projects have been considered for the study. Community owned project that has been considered for the study are; Jingiret Gol, and Jingiret Gol 2. These projects has been implemented by the local people, to fulfill their needs and run their business machinery.

TABLE V. DETAIL OF MHPP'S PROJECT IN DISTRICT CHITRAL.

S.No	MHPP	Implemented by	Capacity (KW)
1.	Sangar	SRSP	100 (Not Operational Yet)
2.	Shahi Bagh	Local	24
3.	Kachalo	SRSP	25
4.	Dobando	Local	24
5.	Jungle Inn	Local	24

6.	Garibabad	SRSP	100
7.	Amrait	DADO	15
8.	Panakot	Local	24
9.	Jabber	DADO	30
10.	Patrak Bazar	Local	15
11.	Sananbal	SRSP	30
12.	Khas Kali Patrak	Local	24
13.	Khas Kali 2, Patrak	Local	24

D. Comparison of the Projects:

The number of Community owned projects is less in comparison with the projects that have been implemented by the donor agencies. Jingiret Gol project has been owned by the local resident who was trained to install and operate the MHPP's by Chinese and Korean Personnel during his Job with FC (Frontier Corps). Another community-owned project, Jingiret Gol 2 has been owned by the local resident named Asad Ullah Qureshi. These Community project has been managed and operated by their owners. Which provides electricity to the surrounding households. The Technical work has been done with the Local mechanic. The projects has some vague structure and not well designed infrastructure, but yet works fine since 1997 of Jingiret Gol 2 Project and 2001 of Jingiret Gol Project.

On other hand community based projects are well designed and implemented by AKRSP with the help of Swiss agency of development cooperation. The generation capacity of the CBP projects are comparatively higher than that of COP project. It is due to the fact that CBP are well designed with the art of civil engineering while that of community owned projects has not properly designed civil works. Community owned project are low generating capacity projects, which tends to provide electricity to the limited number of households, which doesn't require a bigger management mechanism to manage it, while that of community-based project requires proper managing protocols to manage the project as it provides electricity to the higher number of households in comparison with community-owned as currently no Proper billing mechanism has been made.

3) Charsadda

Charsadda is located 17 miles from the Provincial capital Peshawar in the west of KP . There are three rivers flowing in the district: the River Jindi, the Kabul River, and the Swat River. The river Jindi and River Swat form as distributed water canals in the district and then merged with the Kabul river. The Canals in Charsadda district is used for the irrigation purpose which provides feasible spot for the Mini and micro hydro power plants.

Number of MHPP's has been installed on this canals, in which some of the projects are community based, which has been implemented with the help of PEDO, and some are Community owned projects, which are owned and operated by the community or local resident by self. Four sites has been selected for the research study in Charsadda, in which three projects are owned by the locals, and one is implemented by PEDO, which is handed over to the community for commissioning.

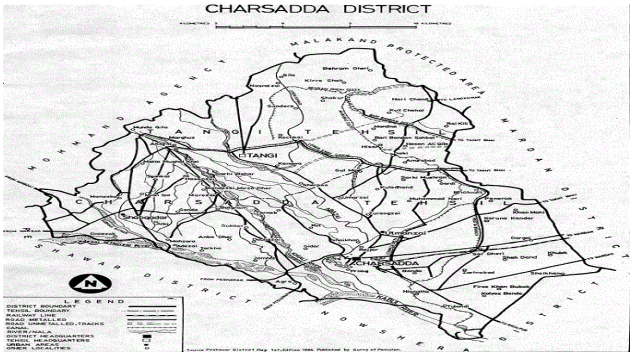

Figure 8. Detail Map of Charsadda District

TABLE VI. DETAILS OF COMMUNITY PROJECTS IN CHARSADDA

S. No.	MHPP	Implemented by	Installed Capacity (KW)
1.	Zyam	Local	20
2.	Hafeez G Killi	PEDO	15
3.	Utmanzai Palay	Local	15
4	Sarki	Local	2

Table VI. Shows the Details of the project selected for the research study. Three of the projects are community owned and one is community based project.

E. Comparison of the Projects:

Except Sarki MHPP, which is owned by the local, all other MHPPs were not operational. The reason behind the instability of the projects is to not undertaking communities in the project feasibility study. Which is certainly the flaws in management of the project. Local Community people use the canal water for the irrigation of their fertile land, and their first priority is to water their irrigated land. Due to which water flow rate available for the MHPP's are not enough to run the turbine at its designed RPM. The water flow issue has been reported at Hafeez G Killi MHPP also, which is community based project. The water flow issue created a rift between the operators and community, as when the MHPP's is operated the water level is decreased. That's why communities avoids being involved in project activity or utilize the power generated by the plant. No business model has been made to generate revenue from the facility for the community-based project, due to which rift occurs often between community and operator. While that of Community owned projects are implemented for the beneficiary own needs, which doesn't require any business model. Local available technical person is approached in case of technical problem in a project. All the operators were unaware of the technical knowledge regarding micro hydropower generation.

4) Kalam – SWAT

Different MHPP's has been implemented by PEDO and SRSP by working together in this region, in which most of them are in good condition and delivering power to its consumers. The residents of the valley are mostly poor and uneducated, that's

why community owned projects are in very few numbers that has been installed by owners itself. This part of the country is mostly cold and the people does not need electrification for fans and refrigeration purpose. For the Lightening purpose they use conventional source e.g. Kerosene oil, woods, generators etc. That is why trends of community-owned projects was not been very welcomed by the community until the community based projects has been implemented, which changes people mindset and social life, as they gain the importance of MHPP's for the community. Meanwhile, two such projects have been selected for the survey, which was implemented by PEDO with the Help of SRSP. Both the projects are community-based projects that were installed for the welfare benefits of the communities.

Figure 9. Detailed Map of Swat Valley (Sub-Valley Kalam)

TABLE VII. DETAILS OF THE TARGET PROECTS IN KALAM (SWAT)

S. No	MHPPS	Implemented by	Installed Capacity (MW)
1.	Jungle Inn	PEDO + SRSP	0.4
2.	Ashuran	PEDO + SRSP	1.2

Analysis:

A. Comparison of the Projects:

Both the Projects are implemented four years ago with the zest to fulfill the need of people of Kalam, which are operating in a good condition till date. There is no such issue in the project, except the Billing mechanisms and minor technical issues. There is no business plan for revenue generation from the consumers. Due to the maintenance, the projects get down for few days, then the consumers refuse to pay the bills. Which creates a rift between community people and operators. Floods are reported at the location, but yet no damage has been reported.

B. Degree of Satisfaction

This analysis deals with the people's perceptions about the project success and failure of CBP projects and COP projects in the selected places mentioned above in the northern areas of Pakistan. This analysis is based on the collected data through questionnaires, Group discussions, and interviews from the project beneficiaries. Total Number of Participants that responds to the research study are 145, with 91 questionnaires return and 54 interviews that have been conducted from over all 29 mhp projects of northern areas. The results pertaining to the hypothesis made are presented in the fig 10 below:

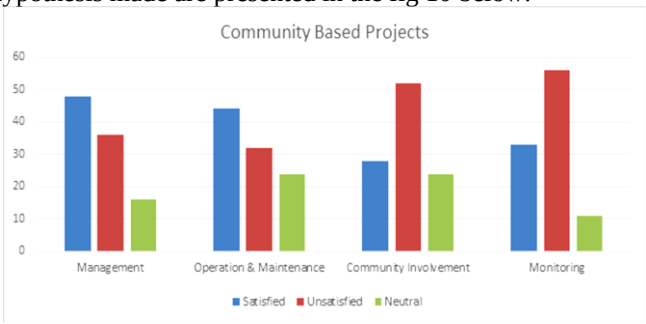

Figure 10. Degree of satisfaction for community based projects

Figure 11. Degree of Satisfaction for community owned projects

C. Main Issues

1. Management Flaws:

It has been observed that most of the project that are non-operational are due to the flaws in project management. During the discussions with the communities, people point out some mis-management in projects implementation. e.g.

- Community participation has not been considered in project activities, due to which mostly people lost interest in projects.
- No Awareness campaigns, Incentives and motivation for the Community for the Social implications of the project.
- In some CBP projects, No such business model were made for revenue generation, due to which sometimes a conflict occurs between beneficiaries and operators Lack of skill training for the operational and maintenance staff in project. Mostly technical staff are uneducated with some adequate skill for the specific activity.
- In some of the projects, there are no data record for the project activities. No manuals are available for the project maintenance and operations.

2. Unskilled Operators:

Most of the project operators have no prior skills and experience in operating and maintaining the project. Among the survey of 29 projects, only 6 operators have little experience in operating the power plant equipment.

3. Low Education Level:

Most of the operators are illiterate or have low education. They don't have any technical skills.

4. Risk of Floods:

Most severe problem that occurs with most of the projects are the risk of floods. As the study has been taken in northern areas, which is the mountainous region. So in the summer season, most of the plants become damaged with the flood. As there is no protection walls or stone crates for the projects, the projects become badly affected by the flood.

5. Community Involvement:

If a Project is not well understood, appreciated or adopted by the community, the sustainability of the project could be challenging. The worst scenario is that some of the hardware, which is implemented by the external donor agencies, are designed and have some technical features, which is new to the beneficiaries and then don't know how to use it. Study shows that in some of the projects, the hardware is left to deteriorate after project implementation, because the community is not interested or committed to the project, or doesn't have financial or technical capability to maintain it. Due to this, a well-designed, and well-structured project can be unsuccessful in reaching its overall objectives because the community was not involved from the beginning of the project.

6. Low Flow Rate:

In the winter season, when the temperature goes down, and the snow freezes on hills, the water flow rate reduces, which affects the power generation from MHPP's. In Charsadda where people use canal water for irrigation purposes, this low flow rate of water only usable for their irrigation and daily life purpose causes the shutdown of the project for a whole season.

7. Financial constraints:

The owners or operators, whose plants are affected by disasters or if any other technical issue appears, they are mostly poor and cannot afford the cost of civil and technical problems. They mainly rely on the locally available technical person who has not that much technical knowledge of power plants. While that of community-based organization have the manpower with technical expertise and have protection protocols that they follow to prevent any disasters.

8. Institutional Arrangement:

There is no such mechanism for the institutional arrangement to address the repairing and maintenance after the disasters or when needed. The community people with their own efforts deal with these issues.

D. Key Findings

- All the participants after a detailed discussion agreed on the point that community-owned projects are successful than community-based due to their management and monitoring factor. But lack of funds and maintenance and operational cost makes it difficult for the owners to sustain the project. An incentive or motivational scheme from the government will allow the COP projects owner a better approach for their project, which will eventually help its sustainability.
- Respondents after a long discussion concluded that community involvement is key factor for the success of any project. As it was clear from the research study also that many projects were failed due to not involving communities in their project decision making decisions. All the respondents agreed on the point that members of the community should be included in decision making regarding collection bills, operation and maintenance of the projects.
- Regarding the issue of collecting bills issue, the community members said that there should be some rules and regulation for collecting bills from household and giving power connection to the bills for inducing transparency in the system. They said they will talk to the concern authorities regarding this matter.

CONCULSION & RECOMMENDATIONS

A. Conslusion

This Paper identified and analyze various factors that influence the community projects, with the comparative analysis between community based and community owned projects. For this purpose total of 29 projects has been selected for the research study in which 12 were community-owned projects and 17 were community based projects. Survey has been conducted for each project and people associated with the project and its beneficiaries are interviewed. Questionnaires has been distributed among the local communities. The Collected data has then analyzed with the help of SPSS tool and then be presented with the help of Tables. From the research study it has been concluded that the community based projects are more efficient than that of community owned projects, only if the projects are well managed.

While that of community owned projects are implemented by the community itself for their own needs and has been mostly managed and operated by themselves. During the study, it is observed that the community owned MHPP projects are not well designed but it has been well monitored and well managed by their owners, that's why community thought the COP project as more efficient than the CBP. But lack of funds and lack of education and skills, these community projects doesn't operational for long term. The maintenance from the local mechanic which are mostly unskilled and uneducated causes permanent damages to the structures. Flood and natural disaster also damages the project infrastructure, which sometimes causes the permanent shutdown of the project. Low flow rate is another issue which badly effects the project efficiency. Some of the project which are designed for the high flow rate of water, doesn't work on low flow rate, which causes to create a rift between community and project operators and people lose interest in the project and finding alternate for their needs.

The study also uses informal survey techniques. From the analysis it has also been concluded that there are some disputes

happens on land proposed, low capacity generation to meet the demand of the community and lack of awareness among the community members are issues which effects the project activities. However, for the project sustainability and success, the cooperation of the community is a key element. If the above-mentioned problems are solved for both the community-owned and community-based projects, then these projects will be the success in future to come.

B. Recommendations

Following are the recommendations and guidelines that derived from the research study, and should be considered for the successful implementation of both types of community projects:

- Government should support communities in implementing MHP community projects, until the community became independent in a way that they can maintain and operate the project themselves.
- Community involvement should be escalated by giving project related reports to the communities as project beneficiaries.
- Local people who have necessary skills in project activities should be recruited with priority to serve the project.
- MHP Projects are financially and environmentally feasible and have high return rate, therefore the government should motivate people by providing an incentive to the private investors.
- An arrangement of proper institution is needed to tackle the issue of flood, low flow rate, maintenance of projects hardware.
- Government should provide technical trainings to the operator for operating and maintaining the project activities.
- Funds management is key element for the successful implementation of any community project. Project leaders and implementers should emphasize and undertake training on funds management.
- Awareness workshops, seminars and training should be provided to the community inhabitants to raise social awareness regarding need of MHP Projects in the communities, and the use of energy in a sustainable manner.
- Enough funds should be provided to the community-based projects, so that operating and maintenance of the project could not be a challenge for the community.
- Monitoring must be intensified by government officials and community leaders.

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