

Report on Disaster Risk Reduction

For the project titled

“Creating a Bio-Engineering Social Enterprise: Socio-Economic Development of Tribal Communities through Logistic and Technical Support for Cash Crop plantation in Landslide Prone Areas”

Project designed and implemented by



**BIGHNA
HARTA
NEPAL**

Major donor

JTI Foundation, Switzerland

Introduction

Bighnaharta Nepal, a Kathmandu based non-profit organization, conducted a project titled **“Creating a Bio-Engineering Social Enterprise: Socio-Economic Development of Tribal Communities through Logistic and Technical Support for Cash Crop Plantation in Landslide Prone Areas”**. The project was undertaken to holistically address and tackle the issues of the communities living in hazard prone areas and are economically weak.

With the vision of using nature-based solutions, the project was initiated by encouraging and engaging the tribal communities in the project areas to plant Broom Grass (*Thysanolaena maxima*), in landslide prone, degraded hills, by providing them food supplies under “food for work” modality. And so, throughout the period of plantation and harvesting the households engaged were provided with enough food for their household, so that they would not have to search for other works to buy food. Once the plant yielded, training was organized where they were provided with professional training on making the brooms as well as how to run a social enterprise to earn a living from selling the brooms. Once the brooms were made, Bighnaharta Nepal connected the finished products to the distributors in the market allowing the tribal communities to earn a living from making the brooms.

This report presents the success of this project by adopting a nature-based solution in preventing and mitigating the impacts of landslides, as well as providing the opportunity for the tribal communities to earn a living which doing so. The success of the project was monitored and evaluated through community survey and inspection by the organization.

Context

The lowland hilly ranges in Nepal are geologically young and tectonically active, posing a huge threat of hazards such as earthquake, flood, landslides, soil erosion and environmental degradation. Every year especially during the rainy season, areas and communities living in these ranges are largely impacted by these hazards especially landslides, soil erosion, and flood. Rakshirang Rural Municipality of Makwanpur district of Bagmati province falls under one of such areas.

The area is home to the tribal community named Chepang. Chepang are an indigenous Tibeto-Burman ethnic group and is one of the most backward indigenous groups in Nepal. Living at high risk of environmental hazards these communities experience range of livelihood challenges shaped by long-historic socio-economic and political marginalization, poverty, under-utilization of natural resources among others.

As a solution, Bighnaharta Nepal, adopted nature-based solution and demonstrated that this multifaceted issue can be mitigated by using the local resources, mobilizing the community as the manpower and by using bioengineering means of interventions to create sustainable solutions. Hence, Bighnaharta Nepal along with the Chepang communities planted Broom Grass

(*Thysanolaena maxima*) on degraded lands and landslide prone areas with the aim of saving the households from potential landslide hazards as well as creating a source of living that can help the communities to come out of poverty. It has been proven, broom grass and bamboo possess strong root and grab the soil preventing hazards such as landslides and soil degradation¹. Cultivation of these cash crops is comparatively easy and requires only small financial inputs. It is grown on marginal lands and wastelands and grows well on a wide range of soils from sandy loam to clay loam.

Project area

The first phase of the project a pilot was conducted in Rakshirang Rural Municipality, ward 5 and 7, Makwanpur District, with the participation of 510 local households as beneficiaries. This area is situated at the Mahabharat Range hills, where landslides are frequent that have hindered the infrastructural development of the region and hence making livelihood hard for the local tribal communities living there.

Community

This region is mainly inhabited by the indigenous ethnic group called Chepang who are semi-nomadic and tribal. As mentioned above, Chepang are one of the most backward indigenous communities of Nepal. Nepal Federation of Indigenous Nationalities (NEFIN) has categorized them as the second most backward/marginalized community of Nepal. People of this community are mostly landless and depend of forage on food. Apart from facing extreme dangers of landslide since they live in the vicinity of the dense forest in the isolated rugged hill ranges, which is a critical space for land degradation, they also face deep social problems such as mass illiteracy, extreme poverty, dependence on primitive agricultural methods, high incidence of malnutrition, child marriage, absence of clean drinking water, food scarcity etc².

Project implementation

Bighnaharta Nepal implemented this project in close coordination with the local authorities and the ward with support and endorsement from the member of Provincial Parliament. Following activities were carried out to implement the project:

Phases	Timeline	Activities
Community Sensitization	June 2019	Coordination with local authorities Community interaction and survey Enrolled 510 households in the project, mostly living under the poverty line Created a supervising committee among the beneficiaries to oversee the project at the local level

¹<https://www.wfnepal.org/?212732/Broom-grass--a-boon-for-communities-and-ecosystems>

² About Chepang community: https://reliefweb.int/sites/reliefweb.int/files/resources/Full%20Report_1021.pdf

Broom Grass plantation	July-Sept, 2019	Engaged each household to at least plant 500 scalping of broom grass on degraded and landslide prone lands
Food Distribution	11 th -12 th July 2020 16 th Jan, 2021	55 kgs Rice, 10 Kgs Lentils, 4 ltrs cooking oil, 2kgs Salt and Covid protection materials like 50 masks, 5 sanitizing soaps etc. for each household were distributed as a labor charge for planting broom grass under “food for work” modality that addressed the immediate food needs of the households being engaged in the project
Training	27 th -28 th Jan, 2021	Trained the women of each household to make brooms
Broom making and Marketing	Jan 2021- Ongoing	The beneficiaries are currently making the brooms and Bighnaharta Nepal is negotiating with the broom distributors to buy from them at the best rate
Monitoring and evaluation	June 2019- Ongoing	Conducted Disaster Risk Reduction assessment through survey and site inspection Is conducting the assessment to demonstrate if the livelihood of beneficiaries has changed after their product is sold Will be conducting joint and public monitoring and evaluation of the project where the local leaders, journalists, members of civil groups will participate

Disaster Risk Reduction Assessment

Since one of the primary objectives of conducting this project was to prevent or mitigate the impact of landslide, Bighnaharta Nepal conducted a community level survey to find out if this objective has been achieved.

Methodology

Bighnaharta Nepal carried out a brief survey with the locals in the area who were actively engaged in the project and who had planted broom grass in landslide prone areas. The survey was conducted in each ward with participants ranging from 5 to 17. Structured questions were asked regarding landslides scenario before and after the project implementation. Then the team from the organization visited the area to verify the answers.

The questions asked to the participants in the survey were as follows

1. Was the particular area landslide prone before broom grass was planted? (Q1)
2. Have broom grass been planted on those landslide prone areas? (Q2)
3. Have landslide occurred in that particular area after broom grass was planted? (Q3)

4. Have landslide occurred in other places in the area where broom grass was not planted?
(Q4)

Findings

Area	Q1 Answer	Q2 Answer	Q3 Answer	Q4 Answer	Verification by organization
Ward 5					
Dusarang	Yes	Yes	No	Yes, 10	True
Incharang	Yes	Yes	No	Yes	True
Churi Dada	Yes	Yes	No	Yes	True
Rawang	Yes	Yes	Yes	Yes	True
Sachak	Yes	Yes	No	Yes	True
Ranibang	Yes	Yes	No	Yes	True
Luina	Yes	Yes	No	Yes	True
Tirlyai	Yes	Yes	No	Yes	True
Jirkhe Dada	Yes	Yes	No	Yes	True
Sano Lapur	Yes	Yes	No	Yes	True
Bhumi Darsi	Yes	Yes	No	Yes	True
Ward 7					
Damrang A	Yes	Yes	No	Yes	True
Damrang B	Yes	Yes	No	Yes	True
Damrang C	Yes	Yes	No	Yes	True
Damrang D	Yes	Yes	No	Yes	True
Damrang E	Yes	Yes	No	Yes	True
Dhirang A	Yes	Yes	No	Yes	True
Dhirang B	Yes	Yes	No	Yes	True
Dhirang C	Yes	Yes	No	Yes	True
Darang A	Yes	Yes	No	Yes	True
Darang B	Yes	Yes	No	Yes	True
Darang C	Yes	Yes	No	Yes	True
Darang D	Yes	Yes	No	Yes	True

Conclusion

As per the findings, out of 23 places surveyed, only one area has had the instance of landslide after Broom Grass plantation. In all other areas, landslides have been prevented for the past two years since the plantations were done. These areas had landslides every year before the project implementation. Hence, through this project it has been proven that broom grass can prevent and mitigate the impact of landslide and is the most rooted and cost-effective way to do so as

scalping are found in abundance in the region. This finding proves that this project has been successful in its primary objective.

Bighnaharta Nepal will continue to monitor and evaluate the impact of this project, in landslide prevention and mitigation in years to come. We also intend to conduct baseline surveys to measure the effectiveness and sustainability of this solution. Furthermore, Bighnaharta Nepal will also seek to expand this project in other landslide prone areas in the region and experiment with other cash crops such as Bamboo, Banana, and fodder grass. We are open to sharing this solution to any other third-party organization, interest groups, researchers and the Government.

Project on national news media: <https://myrepublica.nagariknetwork.com/news/how-an-organization-is-planting-seeds-of-empowerment-in-rural-chepang-villages-of-makwanpur/>



Plantation of broom grass in landslide prone areas



Broom Grass Firmly holding the loose soil



Distribution of food supplies to the beneficiaries



Broom making workshop



Meeting for community survey