MICROFINANCE FOR DISASTER RECOVERY
Lessons from the 2015 Nepal Earthquake

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ABSTRACT

Disasters often affect the poor more than other segments of society. Once a disaster strikes, the poor have to allocate their scarce resources to cope with the disaster's effects. With the limited financial resources they rely on after a disaster, the poor often sink deeper into poverty. Microfinance institutions (MFIs) can assist the poor's disaster recovery by providing emergency microcredit and other relief services. MFIs are well positioned to assist the poor's recovery because of their close association with rural communities, as well as their commitment and mandate to serve the poor. This report assesses the impact of the livelihood restoration microcredit provided to the affected households after the earthquake in Nepal in April 2015. The assessment found that access to finance after a disaster has a critical positive impact on the affected households' recovery. The report also provides recommendations on how MFIs can play a role in supporting rural communities' disaster risk mitigation and preparedness efforts.

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ABBREVIATIONS

ADB – Asian Development Bank

MFI – microfinance institution

NGO – nongovernment organization

SFAC – small farmers' agriculture cooperative

SFG – small farmers' group

SFDB – Small Farmers Development Bank

PKSF – Palli Karma Sahayak Foundation

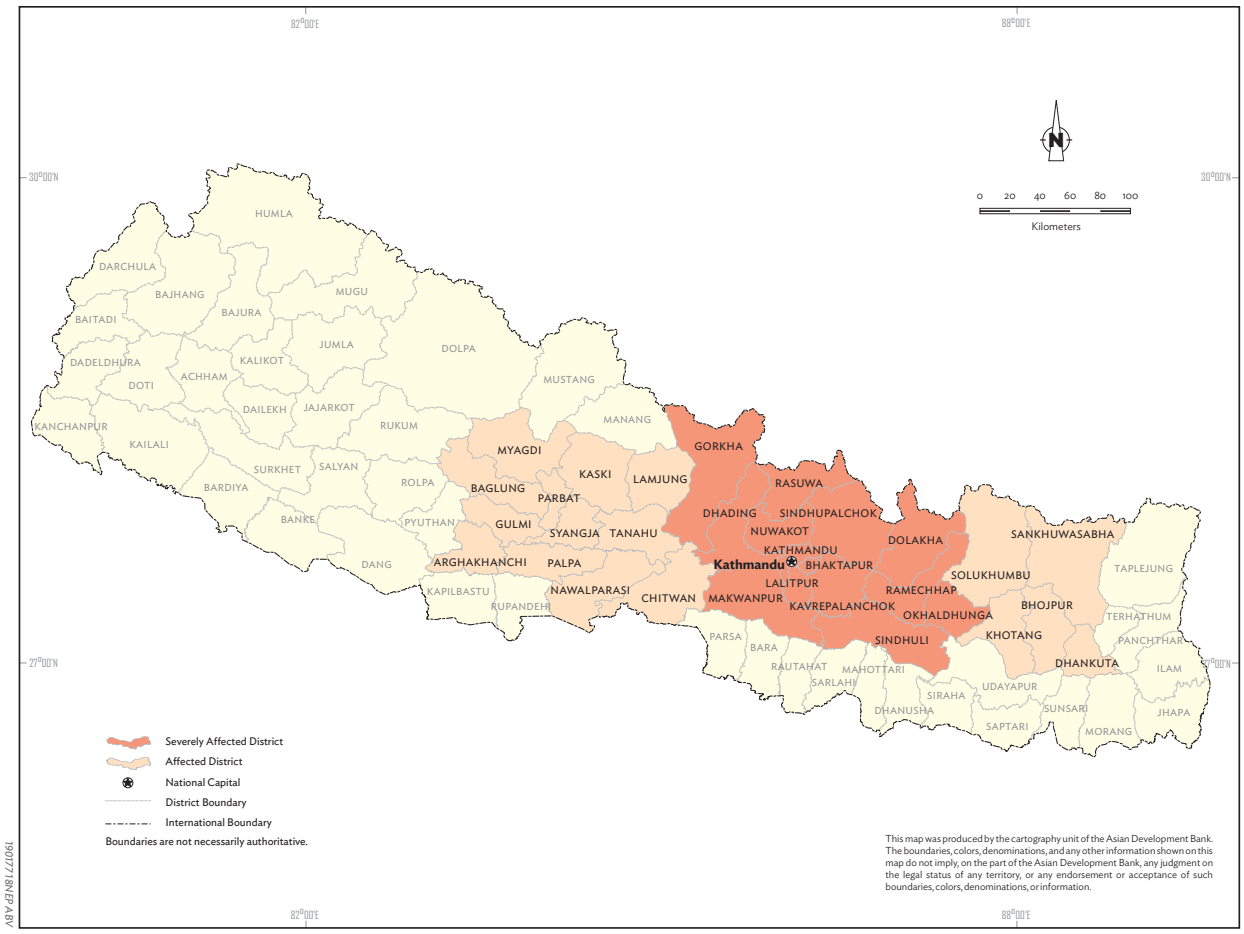
VDC – village development committee

CURRENCY EQUIVALENTS

(as of 14 March 2019)

Currency unit	–	Nepalese rupee (NRe/NRs)
NRe1.00	=	$0.00896
$1.00	=	NRs111.513

MAP: Districts in Nepal Affected by 2015 Earthquake



Source: Asian Development Bank.

I. INTRODUCTION

1. Disasters can hit anybody, but it is often the poor who are the most affected. The poor have little financial resources they can rely on during emergencies. Due to their low social and economic status, they tend to live in disaster-prone areas or places which lack essential infrastructure resilient to disasters. They often have limited knowledge and capacity for disaster risk management, preparedness, and mitigation.

2. Once hit, the poor must allocate their scarce resources to cope with the disaster, sometimes by reducing essential spending for food, education, and health. Also, as most of the poor depend on agriculture and farming as their means of livelihood, natural hazards such as floods, cyclones, and droughts may cause considerable damage to their farming activities, thus severely affecting their income-generating capacity. Without proper post-disaster coping mechanisms, the poor often sink deeper into poverty.

3. After a disaster, governments, international relief agencies, donors, nongovernment organizations (NGOs), and the private sector often provide relief and rehabilitation assistance. However, in most cases, such post-disaster relief and rehabilitation assistance is insufficient and hardly compensates for the actual damage from the disasters. Also, such assistance takes a long time to reach the affected households—missing critical time to minimize the immediate disaster impacts. Generally, post-disaster relief and rehabilitation assistance is phased out over a few years after the disaster; however, actual recovery takes much longer, especially for the poor.

4. To help the poor recover from the disasters, microfinance institutions (MFIs) can play an important role.[1] In the Asia and Pacific region, there is a relatively dense network of MFIs, including cooperatives. Generally, MFIs have in-depth knowledge on the poor households, and frequently interact with the local communities. More importantly, most MFIs have a strong commitment and mandate to serve the poor. MFIs provide mainly savings and credit services, but at the time of disasters, they can also provide emergency relief, concessional loans, and other relief services to their members. Recently, the growing number of MFIs has started providing microinsurance and other emergency financial services. MFIs can be an effective channel to deliver disaster relief and rehabilitation support, as well as to promote disaster risk reduction among rural poor communities.

5. The objective of this report is to assess the impact of microfinance to the disaster-affected households based on experiences in the 2015 earthquake in Nepal. After the earthquake, Asian Development Bank (ADB) provided assistance for the livelihood restoration microcredit to enable the affected households to recover their means of livelihood damaged by the earthquake. The microcredit was channeled through the Small Farmers Development Bank (SFDB), an apex microfinance bank of small farmers' agriculture cooperatives (SFACs), to its affected small farmer members in the three districts: Dhading, Nuwakot, and Rasuwa. The report also tries to identify ways to promote disaster risk management among the rural communities through MFIs.

6. The impact assessment is based on three surveys: (i) earthquake-damaged household assessment conducted on 130,444 SFAC members in the 24 affected districts during April–May 2015; (ii) focused group interviews with 110 affected SFAC members during May–June 2017; and (iii) household impact

[1] In this report, MFIs mean all types of financial institutions which provide financial services to poor and low-income people; and include banks, nonbank financial institutions, NGOs, savings and credit cooperatives, and government or donor-sponsored programs.

survey conducted on 700 SFAC members who are microcredit borrowers (the beneficiaries) and 175 nonborrowers (the nonbeneficiaries) during March–July 2018.

7. The survey results indicate that, in July 2018, beneficiaries of the livelihood restoration microcredit had higher household incomes, and person-days of employment as compared to nonbeneficiaries. It was assessed that the beneficiaries' income level recovered and exceeded the pre-earthquake level; however, the nonbeneficiaries' income level had yet to reach the pre-earthquake level. Those results may indicate that post-disaster access to finance is highly useful for the affected households' livelihood recovery. The assessment also found that nonfinancial support, such as skills training for income-generating activities, has a positive impact on the affected households' recovery.

II. 2015 NEPAL EARTHQUAKE

8. On 25 April 2015, a 7.8 magnitude earthquake struck Nepal. The initial earthquake was followed by many aftershocks, including one with a magnitude of 7.3 on 12 May 2015. The initial shock and aftershock caused severe damage in 31 of 75 districts in Nepal. Among the affected districts, 14 in the central and western regions with a total population of 5.4 million were most severely affected.[2]

9. The overall damage in all the affected districts include 8,790 deaths and over 22,300 injured. Nearly 500,000 houses were destroyed and 250,000 damaged. Other losses include collapses or damage of government buildings, health facilities, schools, and heritage sites. The earthquake affected 8 million of the country's total population of 26 million.

10. The total value of disaster effects, including direct damage and indirect losses, is estimated at NRs706 billion. The most affected sector, housing and settlements, sustained about 50% of the total destruction; followed by production decline at about 25%, and tourism at 11% (Table 1).[3]

Table 1: Summary of 2015 Nepal Earthquake Effects
(NRs million)

	Disaster Effects		
	Damage[a]	**Losses[b]**	**Total**
Social Sectors	**355,028**	**53,597**	**408,625**
Housing and human settlements	303,632	46,908	350,540
Health	6,422	1,122	7,544
Education	28,064	3,254	31,318
Cultural heritage	16,910	2,313	19,223
Productive Sectors	**58,074**	**120,046**	**178,121**
Agriculture	16,405	11,962	28,366
Irrigation	383	–	383
Commerce	9,015	7,938	16,953

continued on next page

[2] The 14 most severely affected districts were Bhaktapur, Dhading, Dolakha, Gorkha, Kabhrepalanchok (Kavre), Kathmandu, Lalitpur, Makawanpur, Nuwakot, Okhaldunga, Ramechhap, Rasuwa, Sindhuli, and Sindhupalchowk. Government of Nepal. Central Bureau of Statistics. *National Population and Housing Census 2011.* Kathmandu.

[3] National Planning Commission. *The Government of Nepal. 2015. Nepal Earthquake 2015: Post Disaster Needs Assessment. Vol. A: Key Findings.* Kathmandu.

Table 1: *continued*

	Disaster Effects		
	Damage[a]	**Losses**[b]	**Total**
Industry	8,394	10,877	19,271
Tourism	18,863	62,379	81,242
Finance	5,015	26,890	31,905
Infrastructure Sectors	**52,460**	**14,323**	**66,783**
Electricity	17,807	3,435	21,242
Communications	3,610	5,085	8,695
Community infrastructure	3,349	–	3,349
Transport	17,188	4,930	22,118
Water and sanitation	10,506	873	11,379
Cross-Cutting Issues	**51,872**	**1,061**	**52,933**
Governance	18,757	–	18,757
Disaster risk reduction	155	–	155
Environment and forestry	32,960	1,061	34,021
Total	**517,434**	**189,027**	**706,461**

– = not relevant, NRs = Nepalese rupees.

[a] Damage refers to the destruction of physical and durable assets.
[b] Losses represent the losses and higher costs of production of goods and services arising from the disaster.

Source: National Planning Commission. The Government of Nepal. 2015. *Nepal Earthquake 2015: Post Disaster Needs Assessment. Vol. A: Key Findings.* Kathmandu.

11. The earthquake pushed down Nepal's economic growth from 5.1% in 2014 to 3.0% in 2015 due to infrastructure damage and production disruptions.[4] It was estimated that 3.0% of the total population or 5.4 million people were pushed into poverty, in addition to 6.8 million people who were already living below the poverty line (footnote 3).[5]

12. The 14 most affected districts are in Nepal's hills and mountain areas. Except for the Kathmandu Valley, the affected districts are basically rural, agriculture-based, and poorer than the districts in the lower southern plain areas (*Terai*). The 2015 earthquake had disproportional impacts on the poorer and rural communities, than the urban and better-off communities.

13. The rural households in the affected districts suffered not only physical damage such as collapsed houses, but also damage on farmland and livestock. Because the rural households depend on farming and livestock as their main income sources, the earthquake's damage on farmland and livestock had considerable impact on their income-generating capacity. The total damage for all affected districts for crops, livestock, and irrigation was estimated at NRs28.3 billion (footnote 3). Based on the assessment SFDB conducted immediately after the earthquake, the average per household damage was estimated at NRs0.8 million, which is over 10 times of Nepal's per capita gross national income (GNI) in 2015.[6]

[4] In this document, damage is defined as direct physical losses as a result of the earthquake and include quantifiable losses such as monetary values of household assets. Indirect effects such as lost employment days and reduced incomes due to the cost escalation, and others are referred to as losses.

[5] Nepal's economic growth further declined to 0.2% in 2016 due to the earthquake's prolonged effect and shortage of fuel and other trade commodities during September 2015–January 2016. Growth rebounded to 7.4% in 2017 and is estimated to be 5.9% in 2018. Asian Development Bank. *Asian Development Outlook 2018 Update: Maintaining Stability Amid Heightened Uncertainty.* Manila.

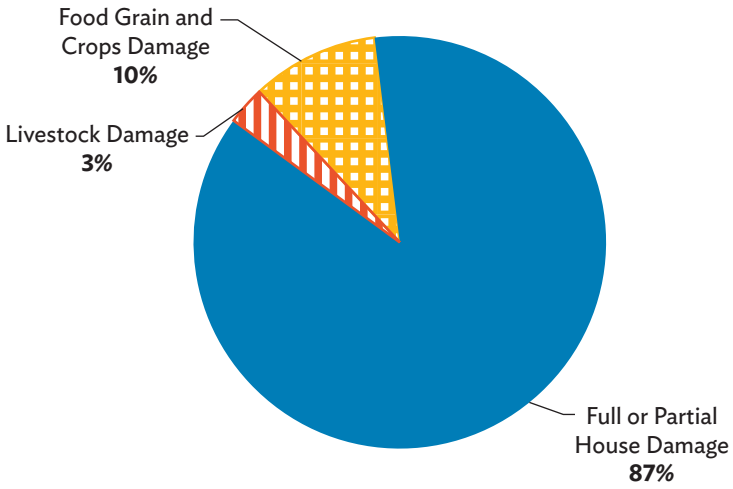
[6] Nepal's per capita GNI in 2015 was NRs76,065. Ministry of Finance. 2015. *The Government of Nepal. Economic Survey Fiscal Year 2014–2015.* Kathmandu.

III. EARTHQUAKE EFFECTS ON HOUSEHOLDS

A. Types of Household Damage

14. The surveyed households' major earthquake damage is largely categorized into physical damage on (i) houses (partially damaged, or fully collapsed); (ii) stored food grains and crops; and (iii) livestock. In terms of the financial value of damage per household, damage on houses takes the majority share (87%), followed by food grain and crop (10%), and livestock (3%) (Figure 1).[7]

Figure 1: Type of Household Damage *(%)*



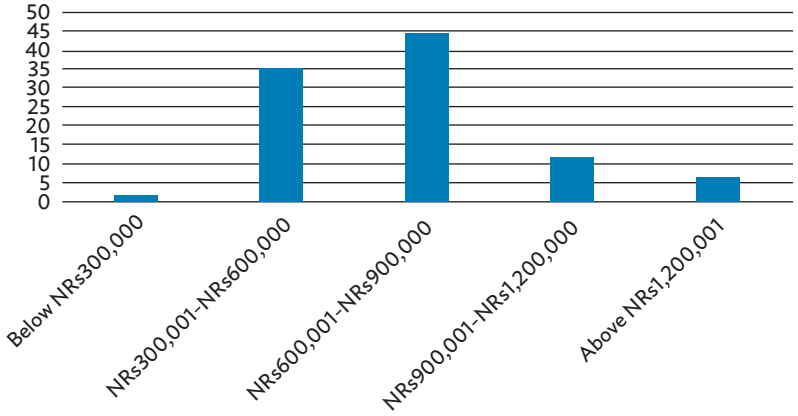
Source: ADB. Impact Study of Microcredit Component of the Project on Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

B. Value of Household Damage

15. The estimated financial value of per household damage from the earthquake ranges between NRs0.2 million and NRs2.1 million, with an average of NRs0.8 million. Nearly half (44.5%) of the households had estimated damage between NRs0.6 million and NRs.0.9 million; and 35.5% had damage ranging from NRs0.3 million to NRs0.6 million (Figure 2).

[7] The financial value of household damage was estimated based on the cost for replacement of each item (replacement value).

Figure 2: Financial Value of Household Damage (%)



NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of the Project on Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

C. Pre-Earthquake Household Income

16. The assessment also estimated a household's income before the earthquake. Generally, a rural household's income comprises main and supplementary income-generating activities. The main income-generating activity of the household is either farming, livestock, or microenterprise. Supplementary activities include sale of house garden crops and livestock, as well as income from seasonal labor migration.

17. The estimated pre-earthquake average annual household income from the main income-generating activity was NRs54,533 (Table 2). The composition of main and supplementary income-generating activities varies depending on the household. However, because Nepal's per capita gross national income in 2015 was NRs76,065, it is estimated that a rural household generates approximately 30% of its total income from supplementary income-generating activities.[8]

Table 2: Estimated Pre-Earthquake Annual Household Income from Main Income-Generating Activity

District	Estimated Pre-Earthquake Household Income from Main Income-Generating Activity (NRs)
Dhading	59,062
Nuwakot	56,036
Rasuwa	48,500
Average	**54,533**

NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of the Project on Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

[8] Ministry of Finance. *The Government of Nepal. Economic Survey Fiscal Year 2014–2015.* 2015. Kathmandu.

D. Initial Relief Assistance

18. Immediately after the earthquake, affected households received relief assistance from various sources including the government, and local and international NGOs. In June–December 2015, it was estimated that surveyed households received, on average, NRs75,000 relief assistance comprising NRs66,700 from the government; and NRs8,300 from local and international NGOs. The government's assistance includes winter clothes assistance of NRs10,000 which was distributed during November–December 2015. In May 2015, the government announced it would provide a NRs200,000 grant to each household whose house was damaged by the earthquake. The government made the first installment (NRs50,000) of the grant for house reconstruction during August–October 2015. Assistance from NGOs was mostly in kind, such as food and shelter materials (Table 3).[9]

Table 3: Initial Relief Assistance to Affected Households

Source	Purpose	Amount (NRs)
Government	Immediate relief	6,700
	Winter cloth assistance	10,000
	First installment of house reconstruction grant	50,000
Local NGO	Immediate relief	3,500
International NGO	Immediate relief	4,800
Total		**75,000**

NGO = nongovernment organization, NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of the Project on Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

IV. DISASTER RISK REDUCTION AND LIVELIHOOD RESTORATION FOR EARTHQUAKE-AFFECTED COMMUNITIES PROJECT

A. Small Farmers Development Bank

19. SFDB was established in July 2001 and licensed by Nepal Rastra Bank—the central bank—as a class "D" (microfinance) institution. It is an apex microfinance bank owned by SFACs. Its main objective is to improve the lives of the rural poor and promote access to finance to small farmers, especially those in the hills and mountain areas.

20. SFDB's activities include (i) wholesale loans to SFACs and MFIs to further on-lend to their members; (ii) technical assistance to SFACs and MFIs for institutional strengthening and capacity building; (iii) technical support and training for members' business- and income-generating activities; (iv) replication program to expand microfinance services to the underserved and unserved areas, especially targeting women; and (v) support and advisory services for community development. SFACs are the major shareholders of SFDB (39%), followed by the general public (30%), Agriculture Development Bank Limited (a state-owned bank) (22%), and commercial banks (9%).

[9] In January 2017, the government increased the grant amount to NRs300,000 per household.

21. SFAC is a community-managed, community-based organization. Normally, there is one SFAC in one village development committee (VDC).[10] Each SFAC has a three-tiered structure: (i) small farmers' groups (SFGs) in the lowest tier; (ii) intergroups in the middle tier; and (iii) main committee in the top tier. In the lowest tier, 5–12 SFAC members form an SFG which makes decisions on savings and credit activities and other operations at the village level. In the middle tier, two or more SFGs form an intergroup at the ward level that coordinates SFGs' activities. There are normally nine intergroups in one SFAC. In the top tier of each VDC, there is a main committee comprising the intergroup chair from all nine wards in the VDC. The main committee is the board of directors and the governing body of the SFAC. It develops the SFAC's plans, policies, and other operational matters; and is accountable to the SFAC members at the general assembly.

22. SFAC members are primarily marginal and small farmers. In July 2018, SFDB had 680 SFACs in 68 districts with a total of 670,866 members, of whom 77% were women. In the fiscal year 2018, SFDB's total loan outstanding to SFACs was NRs17 billion, and SFACs to end-borrowers was NRs44 billion. In asset size, SFDB is the largest class D (microfinance) institution in Nepal.

23. The earthquake affected 167 SFACs in the 24 districts with 130,444 members. In response to the earthquake, in April 2015, SFDB conducted an initial damage assessment on all SFACs in the 24 affected districts. Based on the assessment, SFDB developed a livelihood restoration microcredit scheme to mitigate the earthquake impact and support the members' livelihood recovery.

B. The Project

24. To accelerate livelihood restoration and enhance disaster resilience of earthquake-affected communities, ADB approved the Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities project in October 2015.[11] The project was to provide the livelihood restoration microcredit to at least 12,500 affected households in three districts: Dhading, Nuwakot, and Rasuwa. The project also supported the affected communities' capacity development, including disaster-resilient house construction training, and community-based disaster risk management training. The project allocated $7.0 million for livelihood restoration microcredit, and $1.9 million for capacity development.[12] The project started on 8 January 2016.

25. SFDB, through SFACs, channeled the microcredit to affected SFAC members. In April 2015, SFDB had 55 SFACs with 36,340 members in Dhading, Nuwakot, and Rasuwa. The three districts were selected based on the severity of earthquake damage and number of the affected households.

26. The livelihood restoration microcredit's purposes were to provide quick financial assistance for the affected households to (i) revive microenterprises; (ii) restore livestock, agricultural, and other livelihood activities; and (iii) cover essential expenses during the rehabilitation period.

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[10] A village development committee was the lowest administrative unit by the Ministry of Federal Affairs and Local Development. There were 3,157 VDCs prior to federal restructuring. In 2017, the VDCs were dissolved and replaced by rural municipalities. Currently, there are 481 rural municipalities of the total of 744 municipalities. SFDB maintains the three-tiered SFC structure at the VDC level even after the VDC dissolution.

[11] ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Administration of Grant to Nepal for the Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project.* Manila. https://www.adb.org/projects/documents/disaster-risk-reduction-and-livelihood-restoration-earthquake-affected-communities-rrp.

[12] The total allocation for the microcredit comprises $5.5 million from an ADB grant, and (ii) $1.5 million contribution from SFDB.

27. ADB provided the grant to the Government of Nepal. In turn, the government provided an interest-free loan to SFDB; then, SFDB on-lent to SFACs. Subsequently, SFACs sub-lent to their affected member households. The interest rates are 2.0% per annum (p.a.) from SFDB to SFACs, and 5.0% p.a. from SFACs to the affected households. The microcredit has 3 years maturity, including a grace period of 6 months. The principal repayments are quarterly in 10 installments, while the interest payments are monthly. The maximum loan size is NRs50,000 (Table 4).

28. SFACs select microcredit borrowers (beneficiaries) based on the eligibility criteria of (i) good credit history, (ii) vulnerable members by classified SFGs and SFAC, and (iii) households that lost family members or cattle or were severely affected by the earthquake.

Table 4: Key Features of Livelihood Restoration Microcredit

Lending Term between the Government of Nepal to SFDB; and SFDB to SFACs	
MOF to SFDB	$5.5 million loan at 0% to be paid in 9 years half-yearly, with a 3-year grace period
SFDB to SFACs	2% p.a. and 3 years maturity
Lending Term for the Affected Households	
Maximum loan amount	NRs50,000
Interest rate to affected households	5% p.a. interest to be paid monthly
Loan term	3 years
Grace period	6 months
Number of installments	10 installments to be paid quarterly
Fees	No fees for loan processing and pre-payment
Lending procedure	• SFAC assesses the member's damaged livestock, crops, and enterprises in the VDC, and collect loan demand. • The loan application must be completed properly and signed by SFAC's concerned authority. • If eligibility criteria are met, SFDB disburses loan to SFAC in a lump sum or by installments. • SFAC regularly monitors and follow up its members loan utilization. • SFAC collects the principal and interests per the repayment schedule.
Eligibility criteria	• Must be a member of SFAC. • Those who are not members are encouraged to join SFAC. • SFG approves the loan application. • Good credit history. • SFG and SFAC assess applicants as being the most needy members. • From a family that lost family members or livestock or was severely affected by the earthquake.

ADB = Asian Development Bank, MOF = Ministry of Finance, NRs = Nepalese rupees, p.a. = per annum, SFAC = small farmers' agriculture cooperative, SFDB = Small Farmers Development Bank, SFG = small farmers' group, VDC = village development committee.

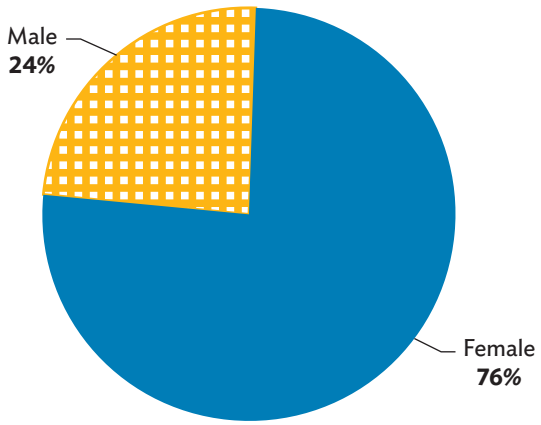
Source: Small Farmers Development Bank.

V. OUTREACH, DISBURSEMENT, AND PERFORMANCE OF LIVELIHOOD RESTORATION MICROCREDIT

A. Outreach

29. The livelihood restoration microcredit was disbursed from July 2016 to October 2017 to 15,700 affected households through 53 SFACs in Dhading, Nuwakot, and Rasuwa. Of the total borrowers, 76% were female and 24% were male (Figure 3).

Figure 3: Livelihood Restoration Microcredit Borrowers by Gender



Source: Small Farmers Development Bank.

B. Disbursement

30. By October 2017, NRs745.3 million was disbursed to the borrowers. The average loan size in all the three districts was NRs47,433. The average loan size was highest in Dhading (NRs48,862), followed by Rasuwa (NRs43,093), and Nuwakot (NRs39,904). In terms of value, women received 75% of the total microcredit (Table 5).

Table 5: Livelihood Restoration Microcredit Disbursement by Gender
(NRs'000)

		Disbursement of Microcredit by Gender		
District	**SFAC**	**Female**	**Male**	**Total**
Dhading	38	463,865	169,935	633,800
Nuwakot	12	76,176	6,624	82,800
Rasuwa	3	16,397	12,303	28,700
Total	**53**	**556,438**	**188,862**	**745,300**
% of Total		**75**	**25**	**100**

NRs = Nepalese rupees, SFAC = small farmers' agriculture cooperative.
Source: Small Farmers Development Bank.

C. Portfolio Performance

31. In July 2018, the on-time recovery rate at the SFAC was 100% and beneficiary level was 99.13% (Table 6). This may indicate that with immediate access to finance, beneficiaries could continue their income-generating activities and maintain their debt repayment capacity.

Table 6: Portfolio Performance of Livelihood Restoration Microcredit

Total loan disbursement	NRs745 million
Total loan collection	NRs408 million
Outstanding loan balance	NRs337 million
On-time recovery rate (from SFACs to SFDB)	100%
On-time recovery rate (from the beneficiaries to SFACs)	99%

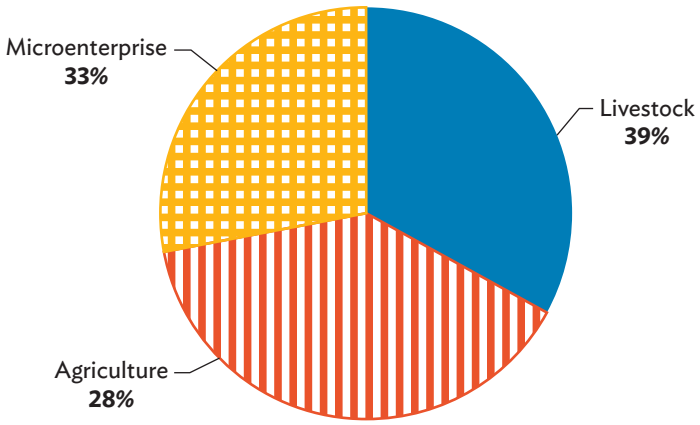
NRs = Nepalese rupees, SFAC = small farmers' agriculture cooperative, SFDB = Small Farmers Development Bank.

Source: Small Farmers Development Bank.

D. Types of Income-Generating Activities

32. The livelihood restoration microcredit borrower—the beneficiaries' income-generating activities—are largely categorized into (i) agriculture or the primary production of crops, (ii) livestock or the primary production of animals, and (iii) microenterprises. Microenterprises are all types of household income-generating activities other than primary production of crops and animals, and include small manufacturing, food processing, transport, and services. Most of the beneficiaries (67%) invested in agriculture and livestock, and 33% of the beneficiaries owned various types of microenterprises, such as dairy processing, tailoring, retail shops, and restaurants (Figure 4).

Figure 4: Beneficiaries' Income-Generating Activities by Number



Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

VI. IMPACT OF LIVELIHOOD RESTORATION MICROCREDIT

A. Survey Sampling

33. The survey was conducted on 700 beneficiaries selected from 15,700 livelihood restoration microcredit borrowers. The sampling tried to ensure the proportional representation of borrowers by ethnicity, gender, and borrowers' types of income-generating activities.

34. The survey also included 175 households who are non-SFAC members and nonbeneficiaries but were equally affected by the earthquake. The nonbeneficiaries were assessed to have almost identical social and economic status as the beneficiaries before the earthquake.

35. The survey was conducted in eight SFACs: five SFACs in Dhading, two in Nuwakot, and one in Rasuwa. By gender, 66% were female and 34% were male.

B. Impact on Access to Finance

36. After a major disaster, affected households need cash for essential expenses such as food, as well as for rehabilitation of their livelihoods. However, access to finances is not readily available for many poor and low-income households, even during normal times. In Nepal, 61% of the adult population report using at least one financial service from a formal financial service provider.[13]

37. All the beneficiaries, being SFAC members, could borrow from the project as well as SFACs' regular microcredit services. However, not all the nonbeneficiaries were able to borrow from formal financial service providers. Only 78% of the surveyed nonbeneficiaries borrowed from MFIs or cooperatives. The nonbeneficiaries' loan amounts were also significantly less than those of the beneficiaries. After the earthquake, the beneficiaries, on average, availed of NRs64,000 in loans, but the nonbeneficiaries could borrow only NRs36,000.

C. Types of Income-Generating Activities

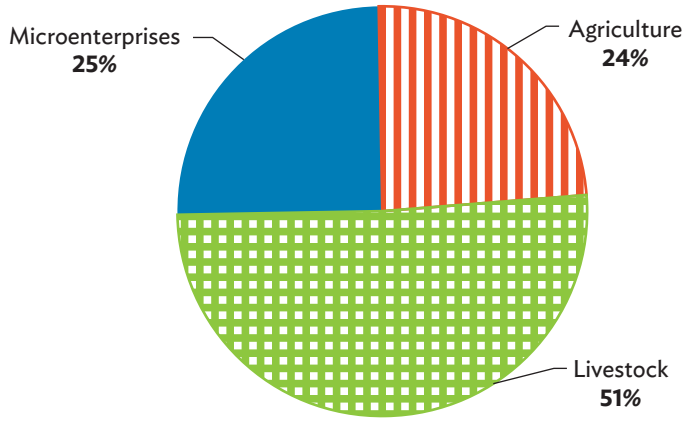
38. The affected households reinvested in their income-generating activities which were damaged by the earthquake. For both beneficiaries and nonbeneficiaries, only households whose income-generating activities were 3 years old or more were included in the study. Newly established income-generating activities after the earthquake were not included.[14]

39. Of the beneficiaries, 75% reinvested in agriculture and livestock activities, and 25% reinvested in microenterprises. Among the surveyed nonbeneficiaries, 83% reinvested in agriculture and livestock; and 17% in microenterprises (Figures 5 and 6).

[13] United Nations Capital Development Fund. 2016. *Making Access Possible – Nepal. Detailed Country Report.* Kathmandu.

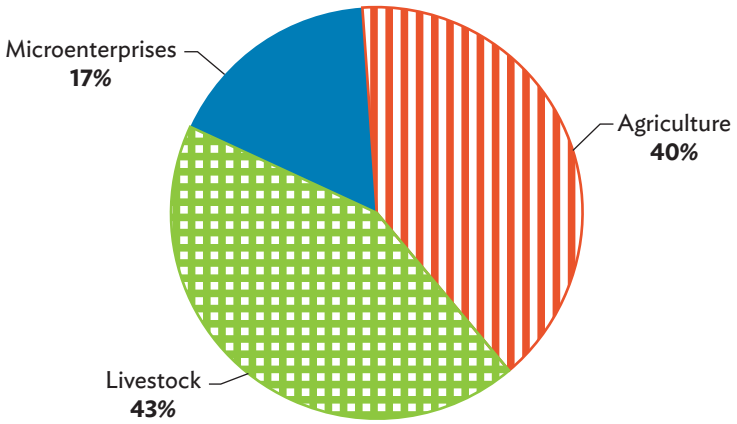
[14] Many households have multiple income-generating activities, such as farming, livestock, microenterprises, and others. This report focuses on main income-generating activities using livelihood restoration credit, as well as other resources from cooperatives and MFIs in a control group.

Figure 5: Beneficiaries' Types of Income-Generating Activities



Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

Figure 6: Nonbeneficiaries' Types of Income-Generating Activities



Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

40. The higher percentage of microenterprises among the beneficiaries may indicate the effect of SFAC's nonfinancial services, such as skills training. Microenterprises require more skills to operate compared to agriculture and livestock activities. Beneficiaries who are SFAC members had better access to skills training, marketing support, and other capacity development services than the nonbeneficiaries.

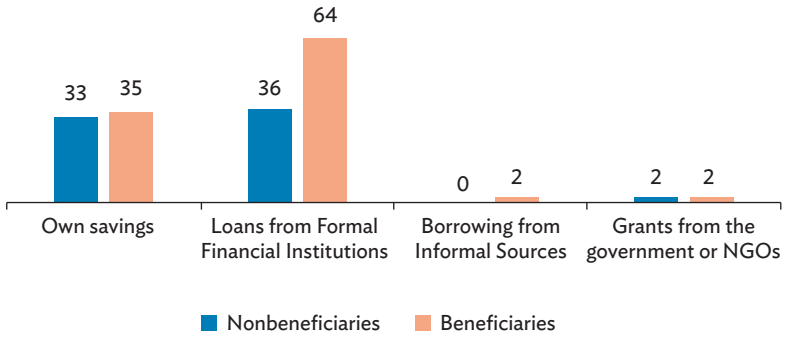
D. Impact on Household Income

1. Sources and Value of Investments in Income-Generating Activities

41. The affected households mobilized resources from various sources to recover their income-generating activities including: (i) their own savings, (ii) loans from formal financial institutions, (iii) borrowing from informal sources such as friends and relatives, and (iv) grants from the government or NGOs. The surveyed beneficiaries, on average, mobilized NRs103,000, while nonbeneficiaries were

able to secure only NRs71,000. The difference between beneficiary and nonbeneficiary groups is largely due to the beneficiaries' access to loans from SFACs. Figure 7 shows surveyed households' fund sources and amounts for their reinvestments.

Figure 7: Beneficiaries' and Nonbeneficiaries' Sources of Investment (NRs '000)



NGO = nongovernment organization, NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

2. Net Income from Income-Generating Activities

42. The survey found that beneficiaries' net income was much higher than nonbeneficiaries' net income. The net revenue from the income-generating activities for March 2017–February 2018 was NRs84,000 for beneficiaries and NRs39,000 for nonbeneficiaries (Table 7). The income discrepancy between the two groups can be attributed to the beneficiary group's larger investment resources, including loans from SFACs which resulted in higher gross incomes. Also, beneficiaries spent more resources to invest in fixed assets, such as equipment and machinery, than the nonbeneficiaries, which may have contributed to lower operating expenses and higher productivity.

Table 7: Average Net Income from Income-Generating Activities
(NRs)

Item	Nonbeneficiaries	Beneficiaries
Operating income	254,000	291,000
Operating expenses	215,000	207,000
Net income	39,000	84,000

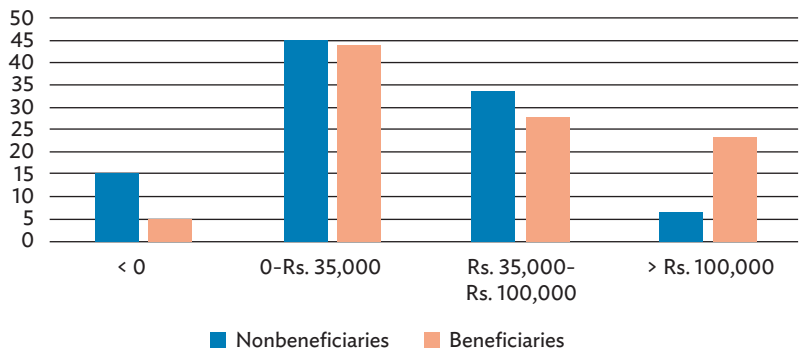
NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

3. Net Income Distribution

43. In income distribution, 23% of beneficiaries have an average net income above NRs100,000 as compared to 6% among nonbeneficiaries. The income level above NRs35,000 but below NRs100,000 has almost equal distribution between the beneficiary and nonbeneficiary groups (Figure 8).

Figure 8: Distribution of Income



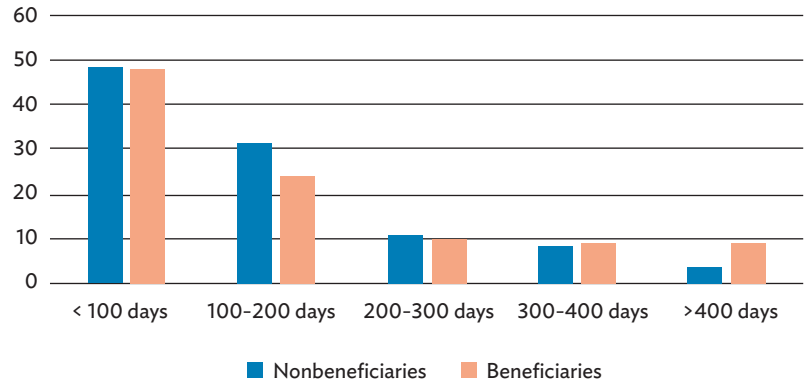
NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

E. Impact on Employment Generation

44. Most of the surveyed household income-generating activities are operated by the household members. Very few households (5.2%) employ full-time external workers; while 9% hired part-time laborers. Beneficiaries' income-generating activities generated, on average, 184 person-days employment per year; while nonbeneficiaries' income-generating activities generated 155 person-days employment. The difference between beneficiaries' and nonbeneficiaries' person-days employment was because among beneficiaries, 9% (66 households) have enterprises which generate 400 person-days or more employment; while only 3% of nonbeneficiaries have such size of enterprises (Figure 9).

Figure 9: Employment Generation from Income-Generating Activities



NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

F. Effectiveness of Livelihood Restoration by Sector

45. Among the surveyed households' income-generating activities, microenterprises are the most gainful in terms of annual net income for both beneficiary and nonbeneficiary groups. Agriculture and livestock generate significantly lower income than microenterprises. Net incomes from beneficiaries' microenterprises are significantly higher than net incomes from non-beneficiaries' microenterprises (Tables 8 and 9). This may indicate that SFACs' nonfinancial services, such as capacity development for income-generating activities, enabled the beneficiary households to engage in higher value-added and more productive income-generating activities.

Table 8: Beneficiaries' Income-Generating Activities by Sector

Item	Agriculture	Livestock	Microenterprise
Annual net income (NRs)	52,000	75,000	134,000
Employment (person-day)	77	170	309
Sample size (number)	165	357	178

NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

Table 9: Nonbeneficiaries' Income-Generating Activities by Sector

Item	Agriculture	Livestock	Microenterprise
Annual net income (NRs)	39,000	34,000	51,000
Employment (person-day)	170	134	175
Sample size (number)	70	76	29

NRs = Nepalese rupees.

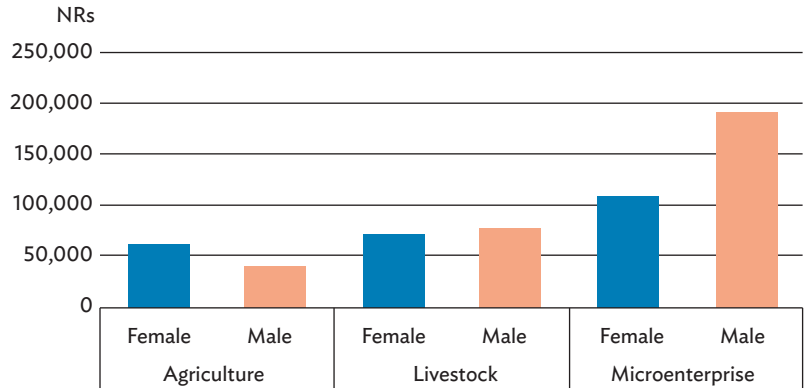
Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

G. Effectiveness of Livelihood Restoration by Gender

46. For income-generating activities by gender, no significant difference was observed in net income between female and male members among both beneficiaries and nonbeneficiaries for agriculture and livestock income-generating activities (Figures 10 and 11). However, major discrepancies were noted in the net income from microenterprises between females and males for both beneficiaries and nonbeneficiaries. For beneficiaries, annual net income for females' microenterprises was NRs108,000 and for males' microenterprises was NRs194,000. For nonbeneficiaries, the relationship is reverse. The nonbeneficiaries' females' microenterprises earned NRs61,000, while males' microenterprises earned only NRs38,000.

47. The results indicate that male beneficiaries (that is male SFAC members) have the most value-added income-generating activities. It is assumed SFACs' skills training and capacity development services promoted microenterprise activities for both male and female members. However, without any substantial external training support, among nonbeneficiaries, those who already have strong entrepreneurships are engaged in microenterprises. It is believed that among nonbeneficiaries, women tend to be better skilled for commercial activities due to social and traditional reasons. The results highlight the importance of promoting nonfarm microenterprises for rural households' recovery, as well as the need for better gender-focused enterprise development support, such as skills training for women.

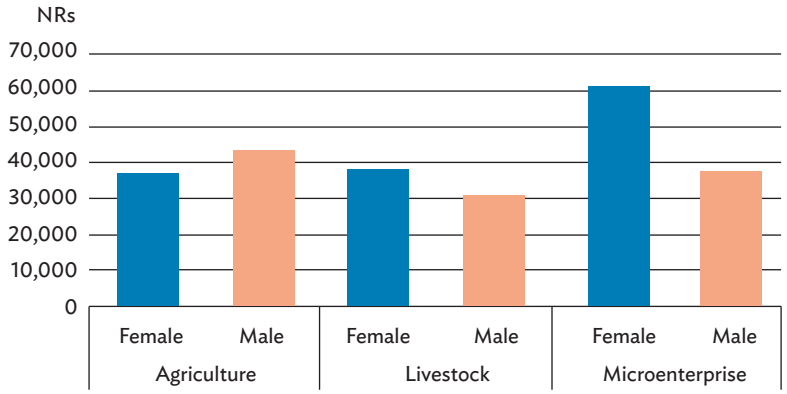
Figure 10: Beneficiaries' Annual Net Income by Sector and Gender



NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

Figure 11: Nonbeneficiaries' Net Income by Sector and Gender



NRs = Nepalese rupees.

Source: ADB. Impact Study of Microcredit Component of Disaster Risk Reduction and Livelihood Restoration for Earthquake-Affected Communities Project (Grant 9180-NEP). Unpublished.

H. Result of Livelihood Restoration Microcredit

48. Access to finance is critical to support the poor and low-income people's economic activities. However, access to finance is even more needed during emergencies. After a major disaster, affected households' income-generating capacities are severely impaired due to the damage to farmland, livestock, and other productive assets. Affected households need immediate access to finance to maintain their livelihoods.

49. Access to finance from formal financial institutions made a significant difference in the affected households' livelihood recovery. Beneficiaries, who are SFAC members, were able to access larger financial resources for rehabilitation, which resulted in quicker recovery of their income-generating activities, better employment opportunities, and higher household incomes compared to nonmembers.

50. It was also noted that beneficiaries who run microenterprises were better off than those engaged in agriculture and livestock activities. This implies SFAC's nonfinancial services—such as skills training, business development support, and entrepreneurship capacity development—enabled SFAC members to run more value-added microenterprises than primary production of crops and animals.

51. In terms of the impact on gender, no significant income disparities were observed between males and females engaged in agriculture and livestock activities for both beneficiaries and nonbeneficiaries. However, differences in income were noted among those engaged in microenterprises. The beneficiary males' microenterprises earned significantly higher incomes compared to other types of income-generating activities.

52. Overall, the impact of microcredit on livelihood restoration was apparent and contributed to the affected households' economic recovery. However, continuous support will be needed to support the affected communities' full recovery. The initial rehabilitation period after the 2015 earthquake is over, but the affected rural households need continuous support not only to recover from the shocks from the disaster, but also for sustainable improvement of social and economic well-being.

53. After the first cycle of the livelihood restoration microcredit, SFDB is revolving the fund to extend microcredit to other affected communities. As found in this survey, access to finance during normal times makes a critical difference for rural households once disaster strikes. SFDB is encouraged to expand its microfinance outreach to other disaster-prone and vulnerable communities.

VII. MICROFINANCE AND DISASTER RISK MANAGEMENT

54. In many countries, MFIs provide essential financial services to poor households who otherwise have no access to formal financial services. MFIs mainly provide savings and credit services, however, when disasters strike, many MFIs also engage in relief activities, such as in-kind relief or emergency assistance loans. However, responding only after a disaster is not an efficient way to manage disaster risk. Disaster management involves not only immediate responses, but requires a more comprehensive approach, including mitigation, preparedness, emergency response, rehabilitation, and reconstruction.[15] For disaster risk mitigation, MFIs can provide disaster risk management training and awareness creation. For disaster risk preparedness, MFIs can offer disaster contingency savings and insurance.

55. MFIs normally offer compulsory and voluntary savings. Generally, the compulsory savings are like equity shares and members are not allowed to withdraw unless they fully repay the outstanding loan or when they quit their membership with the MFIs. However, some MFIs allow members to access the compulsory savings after a disaster. Apart from unlocking compulsory savings, some MFIs offer disaster-related savings.

[15] **Disaster mitigation**: activities that actually eliminate or reduce the probability of disaster occurrence or reduce the effects of unavoidable disasters. Mitigation activities include vulnerability analyses updates, zoning and land use management, preventive health care, and education. **Disaster preparedness**: to plan how to respond and involves preparedness plans; emergency exercises and training; warming systems; emergency communication systems; mutual aid agreement; and public information and education. **Disaster response**: efforts to minimize hazards created by a disaster and to provide immediate assistance to maintain life, improve health, and support the morale of the affected population. PreventionWeb. https://www.preventionweb.net/english/.

56. In most jurisdictions, MFIs are not allowed to provide insurance services. However, many MFIs provide informal insurance to their members. The most common type of that product is credit life insurance. MFIs collect part of the loan's interest as premium, and waive the outstanding loan in case of the borrower's death or inability to repay the loan. A growing number of MFIs also offer other types of products, such as crop and livestock insurance and disaster insurance.

57. Pallli Karma Sahayak Foundation (PKSF), a wholesale lender to MFIs in Bangladesh, offers several microinsurance products: credit life, livestock, hospital cash plan, and paramedic insurance. PKSF also established a Disaster Management Program under which it waives the entire loan amount if the household's income-earner is killed or disabled due to the disaster.[16] The program also provides a fund called SAHOS.[17] Under this fund, disaster-affected households have quick access to emergency credit to enable them to cope with the disaster. As of June 2017, PKSF had disbursed Tk5.6 billion (about $66.7 million) SAHOS loans to MFI members.

58. MFIs also must consider mitigating disaster risks in their financial health and portfolios. Disasters may affect clients' ability to repay their loans and severely impact MFIs' liquidity. To mitigate such risks, PKSF established a Co-variant Risk Fund to protect its partner MFIs from sudden liquidity crunch due to disasters. The Co-variant Risk Fund can provide a reinsurance type of coverage to MFIs in case of a major disaster that affects many of their members to ensure MFIs can maintain their liquidity to continue their credit operations.

59. MFIs not only provide financial services, but can also make an important contribution by collecting disaster damage data. Collecting household damage data will enable the government, NGOs, and relief agencies to plan their emergency relief activities more effectively. As in the case of the Nepal earthquake, SFDB's extensive network of SFACs enabled SFDB to quickly collect information from the ground, assess the damages, and roll out the livelihood restoration microcredit scheme to the affected households.

VIII. CONCLUSION AND RECOMMENDATIONS

60. The impact assessment of Nepal's livelihood restoration microcredit highlighted the importance of access to finance as a disaster response. However, affected households' immediate access to finance is possible only if the households are regularly serviced by formal financial institutions during normal times. In many developing countries, access to finance is limited, particularly for the rural poor.

61. Extending MFIs' services, especially to vulnerable communities, should be promoted not only for poverty alleviation, but also for rural disaster risk management. However, few MFIs have a clear mandate, skills, and resources to professionally organize disaster risk management.

62. There are a few prerequisites for MFIs to provide disaster risk management services. First, MFIs need to know disaster risks in their operating areas and raise their clients' awareness. Second, it is essential during normal times for MFIs to establish a proper financial management system to withstand the shocks from disaster, such as a surge in withdrawals of savings or increases in nonperforming assets.

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[16] PKSF. 2018. *Annual Report 2017.* Dhaka. http://pksf-bd.org/web/wp-content/uploads/2014/05/Annual-Report-2017.pdf.

[17] The name of SAHOS originated from the "Special Assistance Program for Housing of Sidr Affected Borrowers." "Sidr" is a major cyclone that affected Bangladesh in 2007.

Third, MFIs need to have a comprehensive management information system of financial and client data. Disaster responses are possible only if MFIs understand the degree of damage to their portfolios and clients.

63. Once they meet these prerequisites, MFIs should develop a disaster risk management plan with clear roles, responsibilities, processes, and decision-making authorities. For example, loan officers should know under what circumstances they can reschedule or waive loans or sanction emergency loans. Apart from rescheduling or waving loans, if regulations permit and the MFI has sufficient capacity and financial resources, it can develop emergency financial products such as emergency credit, insurance, or contingency savings. However, for many MFIs, developing disaster risk mitigation products, such as insurance, is difficult without external agencies' partnership or support. MFIs may seek partnerships with insurers, banks, government agencies, and/or donors to complement their disaster risk management operations.

64. Other specific recommendations include the following:

(i) During normal times, MFIs shall disseminate to their clients the options they can offer during an emergency. For example, MFIs can waive part of the loan, reschedule, or provide an additional emergency loan.

(ii) If regulations permit, MFIs could purchase portfolio insurance to have financial coverage for disasters to maintain their liquidity. If no such insurance is available or too expensive, MFIs could consider keeping a disaster contingency reserve internally, like PKSF's Co-Variant Risk Fund.

(iii) For the emergency loan, MFIs shall establish clear operational guidelines so the emergency loan can be distributed immediately after the disaster. For post-disaster relief and rehabilitation, timing matters and the emergency credit shall be provided within 3 months after the disaster. The emergency loan's marginal utility will decline significantly with prolonged delay in delivery.

(iv) When providing the emergency loan, nonfinancial services such as skills training, agriculture extension, business development, marketing, and other support could be offered to enhance the livelihood restoration impact. To facilitate this, MFIs could seek coordination with other agencies (government agencies, NGOs, and the private sector).

(v) Disaster rehabilitation support shall not be a one-off event, but continued, in case of a major disaster, for a few years at least. After a disaster, MFIs shall try to extend their membership outreach to nonmember affected households so they can have not only emergency relief, but also continued access to finance until they fully recover.

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Microfinance for Disaster Recovery

Lessons from the 2015 Nepal Earthquake

This report assesses the impact of microcredit provided to affected households after the earthquake in Nepal in April 2015 to help them restore their livelihoods. The 7.6-magnitude earthquake on 25 April 2015 caused not only human casualties, but also considerable damage to the livelihoods of the poor. The Asian Development Bank provided grant assistance for the livelihood restoration microcredit initiative. This assessment finds that post-disaster access to finance has a strong positive impact on the recovery of affected households. The report also recommends how microfinance institutions can promote disaster risk management for poor rural households.

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