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Agriculture



Impacts of National Rural Livelihoods Mission

Results from a quasi-experimental study

New Delhi, 9-Jan-2020

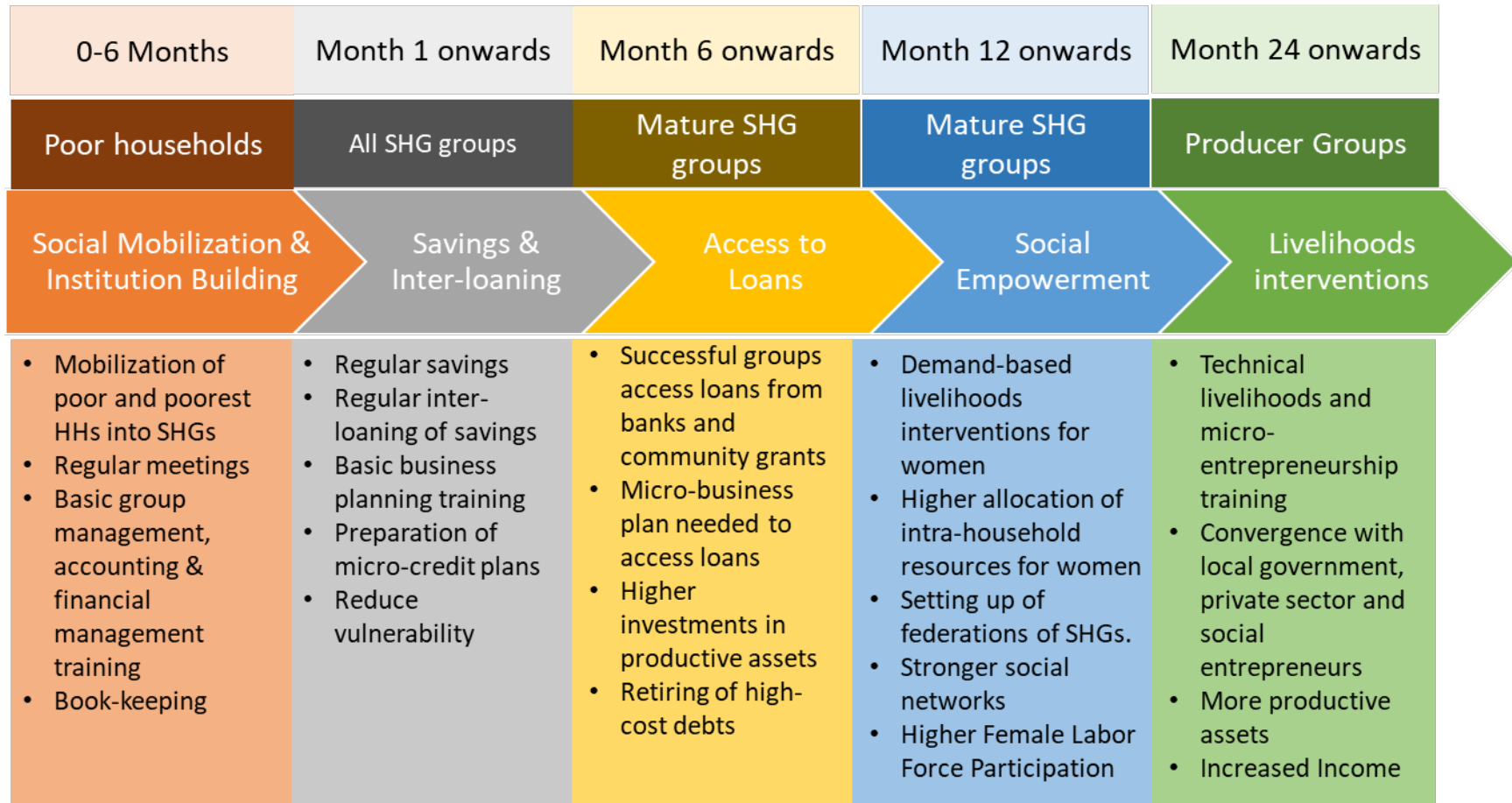
History of Indian Rural Livelihoods

- In early 1980s, several NGOs and development agencies launched SHG-based interventions
- The approach was scaled-up under SGSY but there was lack of focus on institutional building, capacity building and livelihoods
- National Rural Livelihoods Mission was setup with a focus on institutional building and livelihoods activities
- Incorporating lessons from successful large scale projects in Andhra Pradesh and Bihar

World Bank and Rural Livelihoods

- In early to late 2000s, large scale rural livelihoods pilots were launched in five states
- Projects in AP, Bihar, and TN were highly successful
- An `intensive' approach of focusing on additional resources for mobilization and capacity building was piloted through a World Bank project - NRLP
- The intensive model has already reached scale with 59 million women as members of SHG groups
- This model is now being scaled-up across India

Key activities of NRLM



Impact Evaluation of NRLM –Evaluation Questions

- What is the impact of NRLM interventions on intermediate outcomes such as labor force participation, savings, access to loans and migration?
- What is the impact of NRLM interventions on final outcomes including assets, entrepreneurship, and household income ?
- What is the extent of distributional impacts of NRLM interventions?
- Should the intensive model be scaled-up?

Impact Evaluation of NRLM – Study Sample

	Jharkhand	Madhya Pradesh	Maharashtra	Total
Districts	4	12	7	23
Blocks	10	27	13	50
Villages	212	208	307	727
Self-help Groups	858	550	893	2301
Households	1260	1237	1819	4316
SC/ST Households	1051	946	1069	3066

Impact Evaluation of NRLM –Methodology

- Self-selection and program placement biases needed to be addressed
- Non-experimental approach was followed-
Matching algorithms
 - Selection Model
 - Balancing Tests
 - Robustness Checks
- Quasi-experimental approach: Instrumental Variable Methodology
 - Village level enterprise index on 2012
 - Village average cultivable land net of own
 - Mechanisms, Exclusion restrictions, Placebo, Robustness

Key Indicators of Interest

- Intermediate outcomes:
 - Female labor force participation
 - Household savings
 - Access to loans and cost of borrowing
 - Migration trends
- Final outcomes
 - Assets ownership
 - Rural entrepreneurship
 - Household income

Results on Female WPR

- The study has looked at Working Participation Rate(WPR) as per the Census:
 - Counts any paid or unpaid work (0-3 months) as marginal worker
 - Any paid or unpaid work for more than 3 months as main worker
- Baseline values of treatment and control villages for WPR were exactly the same at around 49% (un-matched) according to the population census
- Although it is hard to compare census data to sample survey data but here the trends for the general population from the sample:
 - For the whole sample Female WPR has fallen to 43% in 2016
 - In the treatment group the fall is much narrower than the control group
 - After the matching, the Female WPR in treatment group has fallen from 49% to 46%
 - In control group, the Female WPR has fallen from 49% to 40%

Results on Female WPR (contd...)

- Overall, NRLM has been able to bring **7.7%** women of productive age in the village back to work in just 2.5 years (or a ~14% increase when compared to control group)
- Largest gains have been in women participating in high value agriculture, self-employment (farm and non-farm) and salaried jobs
- Large gains in paid livelihoods as well.
- Overall, these trends signify shift away from casual and unpaid work to formal and better paid work

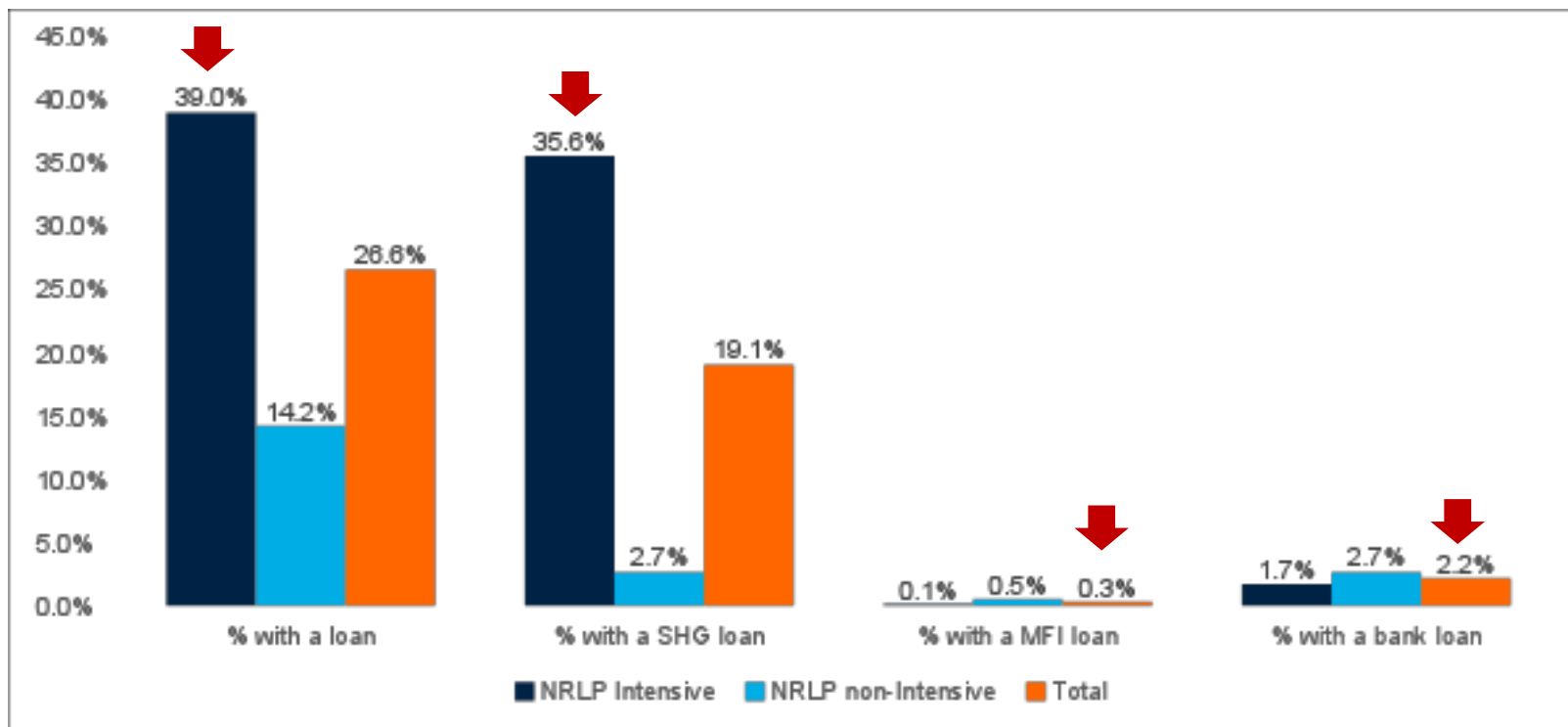
Mechanisms, Placebo, and Robustness

- Mechanisms
 - Productive assets specially livestock (5 more livestock and INR 1300 higher livestock income)
 - Access to and use of formal credit (0.77 more loans and 0.84 less unproductive loans)
- Placebo
 - No impact on male WPR
- Threats to identification
 - Matching and IV
 - Alternative data generating processes

Borrowings, savings & assets

- Overall savings by households
 - Increase of **18.6%** in treatment versus control areas (coming mainly from formal sources)
- Extent and nature of household borrowing
 - **4.9%** reduction in the cost of borrowing (annual interest rate)
 - **24%** more households have an outstanding loan in the treatment areas compared to control areas
 - Average increase in loan size by almost **2** times
- The average loan size for an SHG loan is only Rs. 12,830 and the median is only Rs. 10,000
- Assets status of the households
 - Due to the small loan sizes, there is limited impact on productive asset ownership (except livestock)

Borrowings, savings & assets (contd...)



- Penetration of MFIs and commercial banks remains to be very low in rural areas but NRLM has made a significant difference (expanding the reach of SHG financial services in treatment areas)
- In intensive areas, combined reach of MFI and commercial banks in the survey areas is less than 3%, compared to NRLM's reach of 35% HHs having SHG loans
- In non-intensive areas, access to loans and in particular formal loans is very low, with only 6% (vs 36% in treatment areas) having any formal loans

Migration, Entrepreneurship & Income

- Seasonal Migration
 - Large increase in the number of nights that household members from program areas spent outside their village (9.35 versus 4.80)
 - Mostly to take up 'better employment' (Rs. 1636 versus Rs. 718)
- Enterprise level outcomes
 - Small but significant increase in intensity (more households have started non-farm businesses)
 - Increased borrowing, treatment households were able to invest around 15 percent more funds in enterprises

Migration, Entrepreneurship & Income (cont...)

- HH Income by various sources
 - Migration, agriculture, livestock, casual wages, non-farm enterprises, fisheries, full-time wage employment, public and private transfers and any other sources was collected.
- For most categories of income and total income, we did not find any significant change in mean of the overall sample
- However, median incomes have gone up significantly
 - And several other sub-populations (quantiles) have also witnessed an income increase due to program participation.

Distributional Impacts- Quantile Results

Percentile	(a) Total Income	(b) Income from migration	(c) Total amount borrowed for outstanding loan
20 th	1228.82 (1327.749)	5348.84 ^{***} (1656.53)	866.67 ^{**} (405.85)
30 th	3619.79 ^{***} (1334.27)	5000.00 ^{***} (1685.18)	803.85 (598.34)
40 th	3730.35 ^{**} (1541.42)	5973.79 ^{***} (2152.47)	0.00 (810.05)
50 th	4715.64 ^{***} (1420.70)	4860.74 (2980.30)	-1241.38 (1724.742)
60 th	4168.37 ^{***} (1580.20)	7213.87 [*] (4265.21)	-5000 ^{**} (2207.42)
75 th	5984.59 ^{***} (2264.57)	1080.00 (3943.17)	-10033.33 ^{***} (2839.16)
90 th	2653.62 (5923.55)	0.0 (451.26)	-15333.33 (12255.81)

Conclusion

- Initial results of NRLM's intensive model provide a promising solution to reduction in FLFP
- Primary objective of savings and loans have been met
- Small loan size when compared to other such previous state level interventions has resulted in limited impact on assets
- Median incomes have gone up but no significant results on mean income

Way Forward

- More research is needed to better understand the long-term impacts of SHG based programs.
 - Future studies should look at detailed FLFP effects of NRLM
- Should we do rural enterprise surveys to measure and analyze enterprises level impacts of SHG-based rural livelihoods program?
- Do these results suggest that female withdrawal from the workforce is being stemmed by these investments?



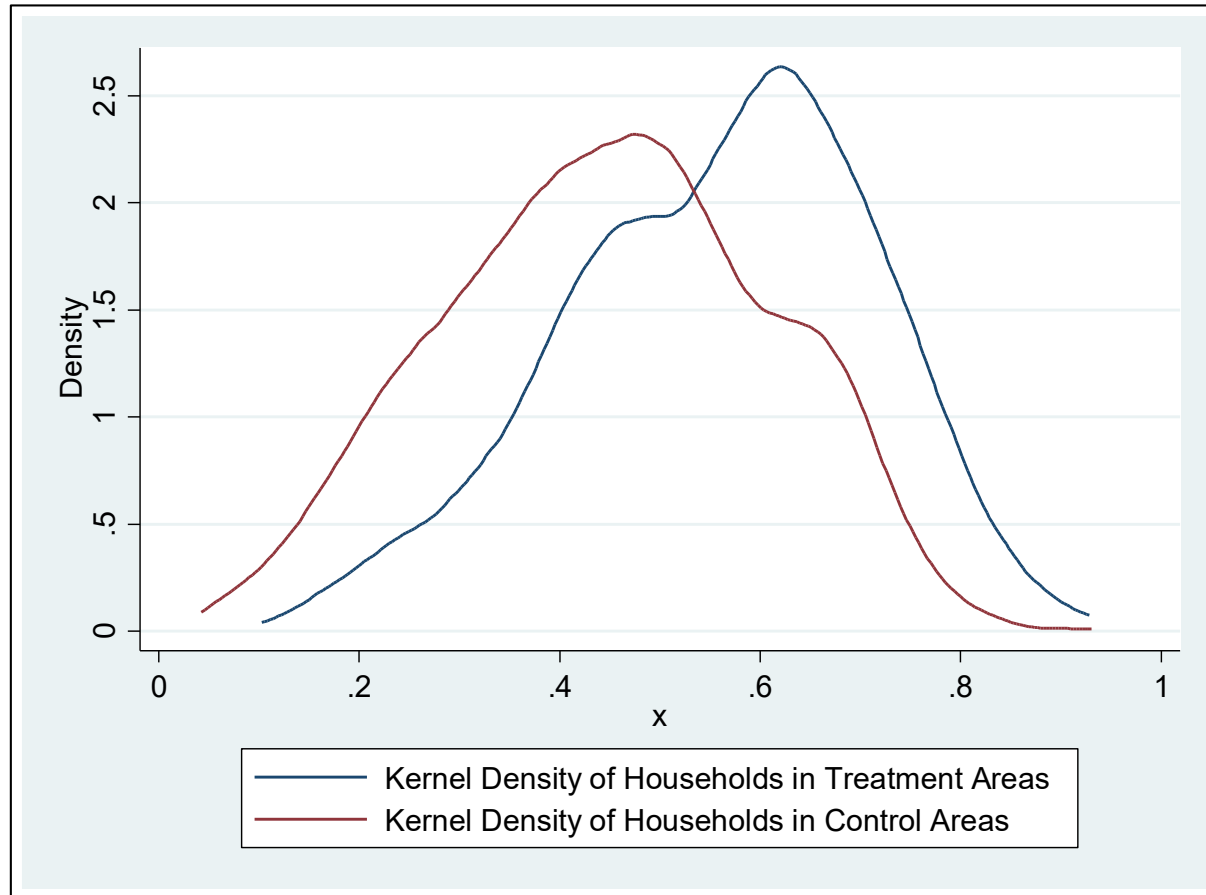
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Thank you



Overlap Condition





First Stage Results

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Variables	Participation in NRLM
Simpson's Village Enterprise Index 2012	0.149** (0.06)
Village Land Net-of-Own	-0.0006*** (0.00)
Status of Primary Health Sub-Center in Village	0.080 (0.077)
Status of Veterinary Center/Hospital in Village	0.041 (0.09)
Status of Primary School in Village	0.26*** (0.07)
Observations	4250
Hansen J statistic (Instrument exogeneity)	0.399
Kleibergen-Paap LM Statistic (Instrument relevance)	38.87***
Kleibergen-Paap Wald F Statistic (Weak instrument)	19.82***
Wu-Hausman F Statistic (Exogeneity of regressor)	9.913***

Second Stage Results

Variables	Program	Standard Error	Observations
Number of Livelihoods of Female Household Members	0.812***	0.278	4,316
WPR for Female Household Members with Self-Employed Livelihood Activity	0.165*	0.087	4,250
WPR for Female Household Members with Self-employed livelihoods Farm	0.184**	0.085	4,250
WPR for Female Household Members with Casual Livelihoods Farm & Non-farm	0.105**	0.051	4,250
WPR for Female Household Members with Any Livelihood Activity	0.219**	0.095	4,250
WPR for Adult (15 to 65 years) Female Household Members with Any Livelihood Activity	0.298***	0.112	4,114
WPR for Adult (15 to 65 years) Female Household Members with Any Livelihood Activity (Paid Only)	0.280***	0.095	4,114
Total Number of Livestock Assets Owned Now	5.588*	2.896	4,316
Number of Members Migrated to Rural Areas for Employment or Search of Employment	0.074*	0.039	4,316
Households cultivating HVA crop (Non Paddy-Wheat-and-Millet)-(Y/N)	0.219*	0.123	4,316

Measurement of FLFP

- Two primary ways to measure FLFP:
 - **Working Participation Rate as per the Census:** Counts any paid or unpaid work (0-3 months) as a marginal worker and more than 3 months as main worker
 - **LFPR as per NSSO:** Measures labor force participation based on their principal and subsidiary status for paid and unpaid activities
 - **Worker Population Ratio as per NSSO:** Includes all paid and unpaid workers that have worked for at least 30 days in the last 365 days
- NRLM Household Survey:
 - Asks if a person done any paid or unpaid in the last 365 days
 - Closest to the Working Participation Rate of Census