Pathways out of ultra-poverty:
A mixed methods assessment of layered interventions in coastal Bangladesh

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Motivation

Households who have escaped ultra-poverty remain **vulnerable** to re-impoverishment.

Impoverishment is driven by climate-related shocks, ill-health and its expenses, poor access to agricultural markets and services, and recently, by the COVID-19 pandemic.

Multi-sectoral programmes have the potential to address these challenges.

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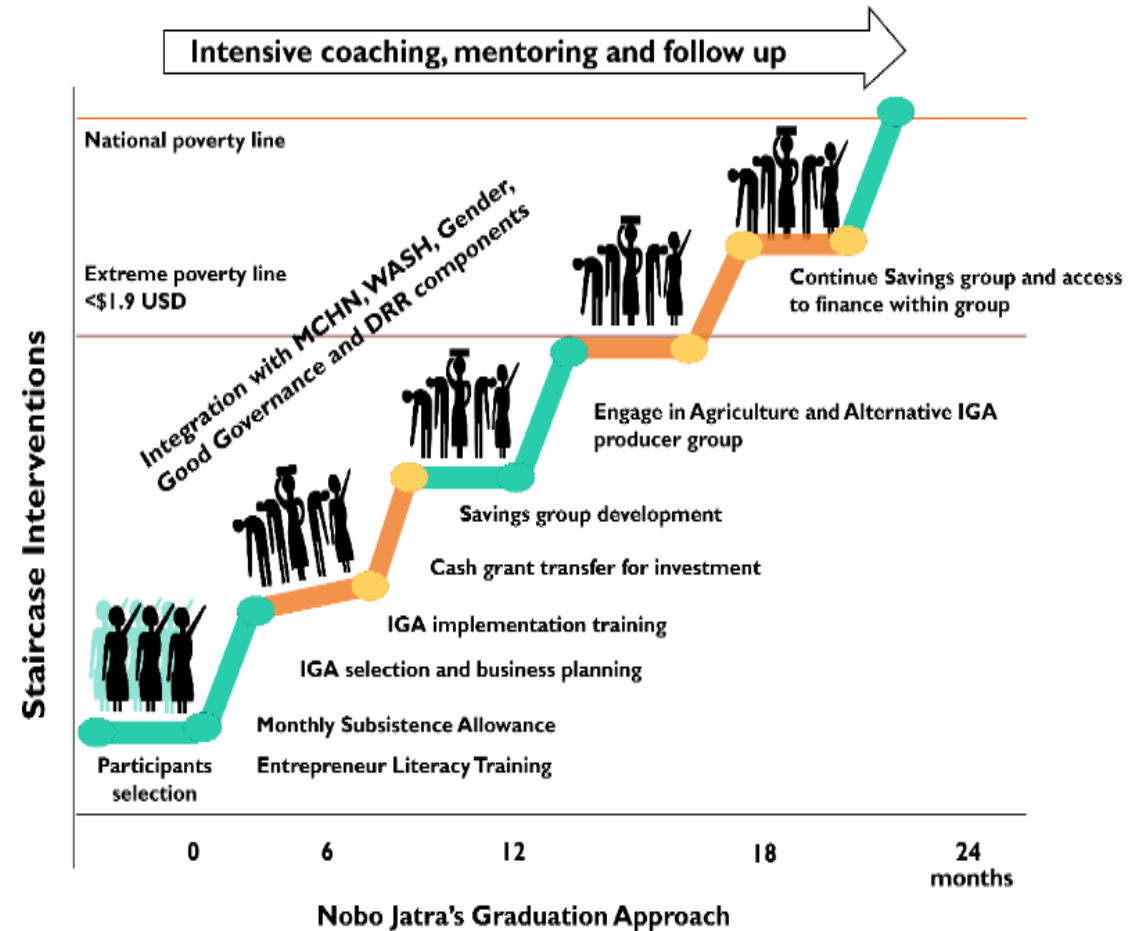
Research questions

1. How and to what extent, if at all, does the layering of UPG with inclusive market systems development, DRR, and WASH interventions impact households' resilience and sustained escapes from ultra/extreme poverty amid health and climate-related shocks and risks?

2. What WASH and DRR specific interventions (or services) are associated with improved resilience capacities? How do these relate to broader resilience capacities contributing to poverty escapes among people in ultra poverty, and to limiting impoverishment in rural Bangladesh?

Study Programme Area
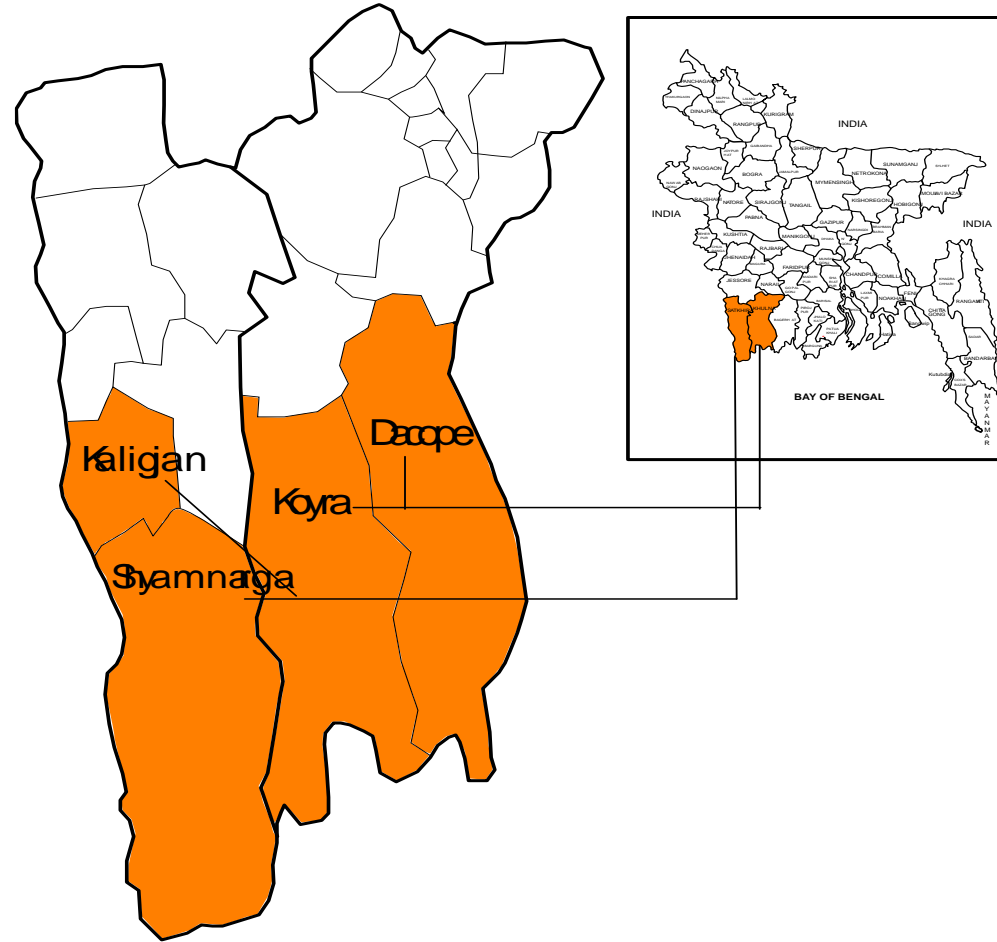
Nobo Jatra Ultra-Poor Graduation programme

- **7-year** USAID activity. Implemented by consortium of NGOs led by WV Bangladesh
- **21,000 women** direct participants in the graduation program
- **Multi-sectoral** programming: UPG, iMSD, WASH, DRR, MCHN, gender governance, citizen voice
- **3 cohorts** of women living on less than $1.90 per day
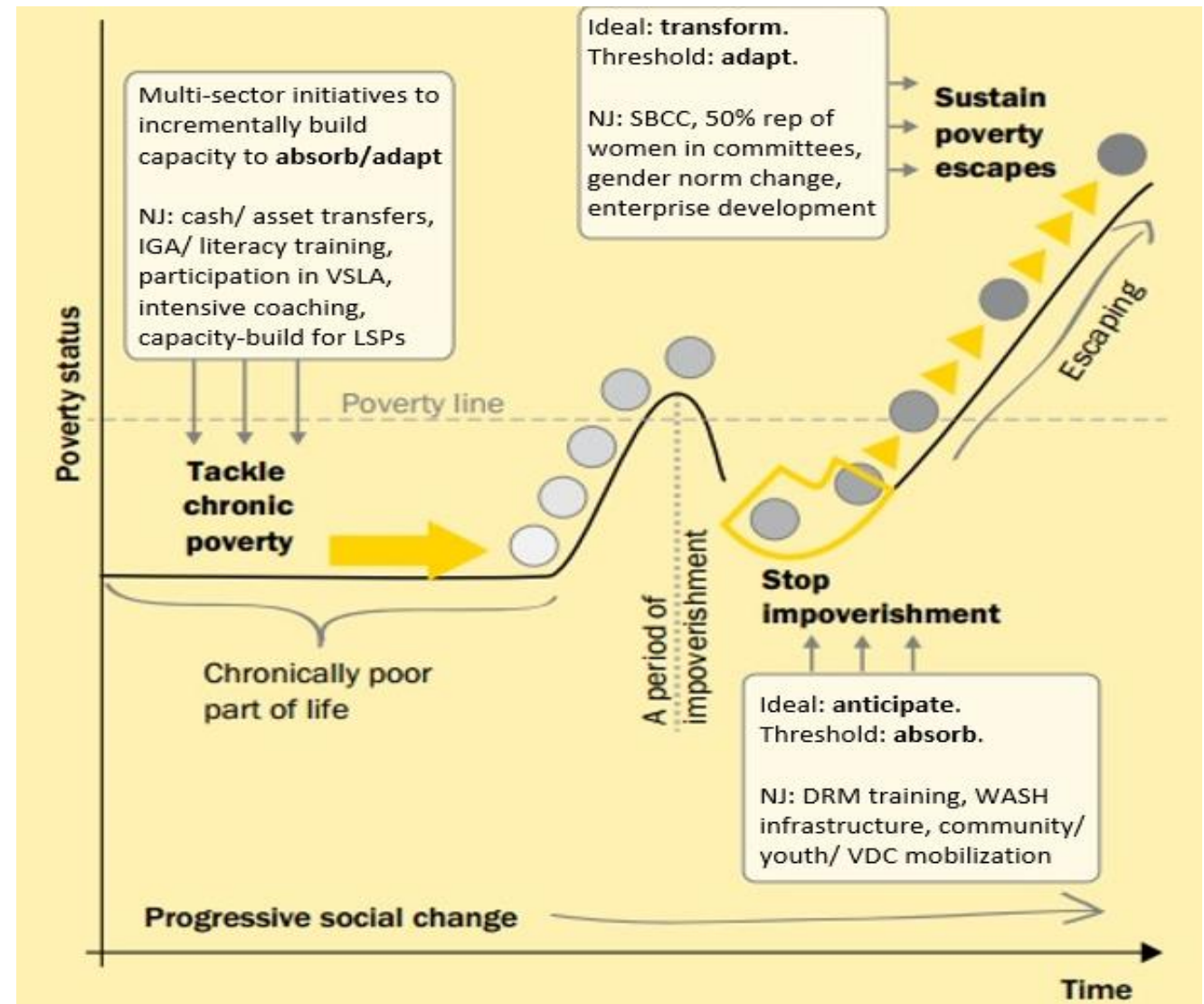- **Learning and adaptation** between cohorts, esp. cohort 3 (modified standard, group, empowerment approach)

Intensive coaching, mentoring and follow up

National poverty line

Extreme poverty line <$1.9 USD

Integration with MCHN, WASH, Gender, Good Governance and DRR components

Staircase Interventions

Continue Savings group and access to finance within group

Engage in Agriculture and Alternative IGA producer group

Savings group development

Cash grant transfer for investment

IGA implementation training

IGA selection and business planning

Monthly Subsistence Allowance

Entrepreneur Literacy Training

Participants selection

0   6   12   18   24 months

Nobo Jatra's Graduation Approach

Nobo Jatra interventions examined

Intervention	Activities
UPG (all F)	· Entrepreneurial literacy training- basic literacy/ numeracy, core business skills. IGA training relevant to skills/ context. · Cash transfers of $12 per month for nine months (monthly allowance). Cash grant of $188 for asset development. Cash. · Village Saving and Loan Association (VSLA)- savings group with active savings account in formal financial institution. · Intensive coaching, mentoring, and following up during the programme period.
iMSD	· Entrepreneurial literacy training – enterprise development (almost 100% women). · Climate smart agriculture – lead farmers manage plots and generate demand. · Capacity building for local service providers (LSPs) in the community. Link smallholders to extension services LSPs), etc. · Linkages with lead firms for both crop and livestock services (inputs).
DRR	· Youth mobilisation– Risk Reduction Action Plan (RRAP) development, training, orienting local communities. · Community mobilization and training/sensitization – household level preparedness. · VDC mobilization – DRR activities, links with other groups, oversight of RRAP. · Disaster Management Committee training- including appraisal tools beyond NJP.
WASH	· WatSan committees (50% female) – plan, monitor, report on WASH progress. · Social and behavior change – messaging on baby WASH, handwashing, safe drinking water, water treatment, waste fecal management, latrine maintenance, exclusive breastfeeding, antenatal care, and nutrition. · Access to water and sanitation facilities, including their infrastructure development.

Conceptual framing: linking resilience and poverty dynamics

- **Resilience capacities**: anticipatory, absorptive, adaptive, transformative
- **Poverty dynamics**: chronic poverty, impoverishment, sustained escapes from poverty

Figure source: Poverty dynamics from Shepherd et al. (2014), merged with NJP interventions and resilience capacities framing

Multi-sector initiatives to incrementally build capacity to **absorb/adapt**

NJ: cash/ asset transfers, IGA/ literacy training, participation in VSLA, intensive coaching, capacity-build for LSPs

Ideal: **transform**.
Threshold: **adapt**.

NJ: SBCC, 50% rep of women in committees, gender norm change, enterprise development

Sustain poverty escapes

Escaping

Poverty line

Poverty status

Tackle chronic poverty

Chronically poor part of life

A period of impoverishment

Stop impoverishment

Ideal: **anticipate**.
Threshold: **absorb**.

NJ: DRM training, WASH infrastructure, community/ youth/ VDC mobilization

Progressive social change

Time

Study hypotheses

Hypothesis 1	Hypothesis 2	Hypothesis 3
• Participation in **UPG programme with iMSD** is associated with absorptive and adaptive resilience capacity development to tackle chronic poverty.	• **Disaster Risk Management** (DRM) training and mobilization and access to **WASH** services contribute to improving absorptive and anticipatory resilience capacities.	• **Social and behavioural change** components in WASH and **women's gender equality and empowerment** can help support sustained escapes from poverty.

Research design, data collection and analysis plan

Intervention groups

- Category 1: **UPG iMSD** as 'control'/ reference group
- Category 2: UPG iMSD **DRR**; **or** UPG iMSD **WASH** (grouped, and examined separately in analysis)
- Category 3: UPG iMSD **DRR WASH**
- Category 4 (qualitative data only): **No** intervention

Data collection

- *Quantitative*
- Phone interviews (CAPI)
- Sample frame of participants, stratified random sampling
- 1924 women
- *Qualitative*
- 40 life history interviews
- 3 FGDs per site
- 10 non-site KIIs

Analysis

- **Qualitative**: coding; content analysis; process tracing for sequences, layering; attributions
- **Quantitative:** data cleaning, regression analysis- outcomes (1-asset wealth, 2-PPI, 3-subjective wellbeing, 4-food insecurity) and pathways
- **Mixed methods** integration

Summary of key findings

Tackling chronic ultra-poverty

UPG activities such as coaching, business development training enabled:
- *diversified livelihoods*
- *productive or protective livestock rearing*
- *stronger market links helping households to escape chronic ultra-poverty*

Preventing impoverishment

Participation in DRR training, receiving information about early warning, access to WASH all key to improving absorptive and anticipatory capacities that prevent impoverishment.

Yet challenges remain amidst multi-sectoral sources of risk.

Sustaining poverty escapes

Women's independent or joint decision making, engagement in community savings group all associated with increases in self-reported income and sustained poverty escapes.

Challenges persist especially around adverse gender norms.

Quantitative analysis

Three regression models were estimated to analyse whether the wellbeing outcomes of respondents (measured through the wealth index), probability of being poor (measured through the PPI) and self-reported income change, varied across the three study groups (UPG+DRR; UPG+WASH; UPG+DRR+WASH) relative to the reference arm (UPG). In the regression model:

$$y_i = T_i\theta + X_i'\beta + \varepsilon_i \quad (1)$$

y_i is any of the continuous wellbeing outcome variables (**probability of poverty, and asset wealth index**) for individual i, and T_i represents the treatment group (thus individual participation in the layered interventions). X_i' is a vector of correlates including other socioeconomic and demographic variables, and β and θ are scalars of coefficient to capture the correlation between dependent variables and independent variables. The measurement error is represented by ε_i. Equation (1) is estimated as OLS.

The **income change outcome variable** was recorded to take values of 1 for a response of income increased and 0 for a response of no change or income decreased. The analysis employed a probit model to examine the relationships and differences, if any, across the study groups. The probit dichotomous model is specified as:

$$Pr(\rho_i = 1 \mid X) = F(X_i'\beta) \quad (2)$$

where $Pr(\rho_i = 1 \mid X)$ is the probability of a respondent saying that their income had increased or decreased given, or conditional on, a set of variables X. F is the functional form that is assumed to be a cumulative standard normal distribution.

Association of Layered intervention with wellbeing

Outcome:	Asset Index	PPI	Income increase	Income decrease	HFIAS
UPG+DRR	0.086	-1.668**	-0.239**	0.207	-0.040
	(0.072)	(0.818)	(0.108)	(0.127)	(0.185)
UPG+WASH	0.008	-0.765	-0.089	0.183	-0.040
	(0.061)	(0.753)	(0.102)	(0.118)	(0.171)
UPG+DRR+WASH	0.224***	-1.999**	-0.231**	0.105	0.135
	(0.085)	(0.879)	(0.117)	(0.139)	(0.203)
Cohort 2	0.037	0.437	-0.060	0.234**	-0.405***
	(0.053)	(0.614)	(0.082)	(0.098)	(0.140)
Cohort 3	-0.008	-1.040	-0.151	0.283*	-0.476**
	(0.090)	(1.016)	(0.128)	(0.152)	(0.223)
Controls	Y	Y	Y	Y	Y
Constant	-0.724***	16.715***	0.294	-1.098***	4.472***
	(0.135)	(1.971)	(0.247)	(0.287)	(0.426)
Observations	1563	1558	1563	1563	1563

Summary statistics

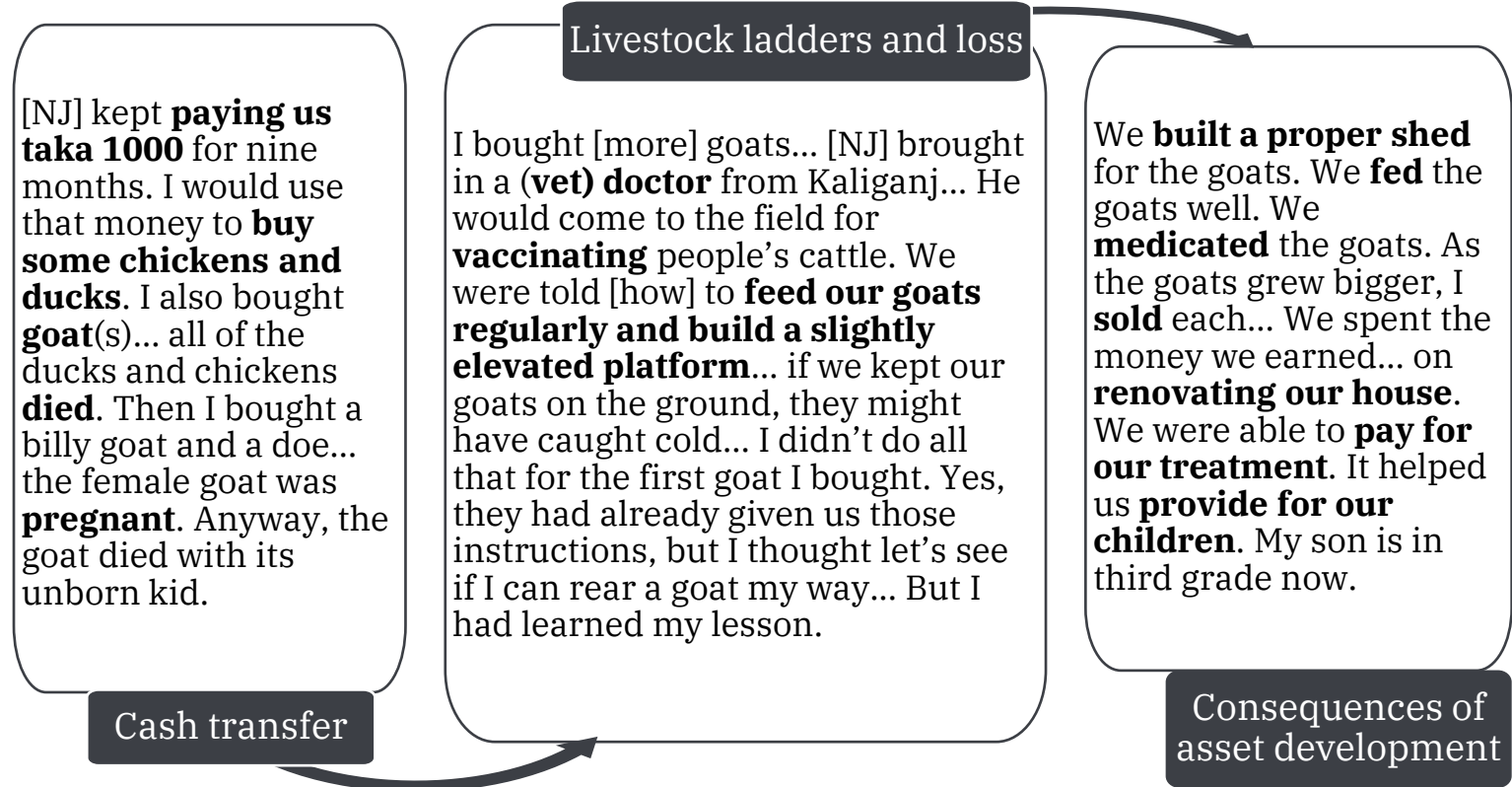| Variable	UPG+iMSD		UPG+iMSD+ DRR		UPG+iMSD+ WASH		UPG+iMSD+ DRR+WASH	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Avg Poverty Likelihood (national threshold, 75.61 Bangladeshi taka per day in 2016 values)	37.94	19.24	36.68	18.77	35.79	18.31	37.07	18.31
Asset index	-0.09	0.80	0.06	1.03	-0.08	0.88	0.12	1.19
% HH- reported income increased	0.81	0.39	0.73	0.44	0.78	0.41	0.72	0.45
% HH- reported income remained same	0.09	0.28	0.13	0.34	0.10	0.30	0.15	0.35
% HH- reported income decreased	0.10	0.30	0.13	0.34	0.12	0.33	0.13	0.34
Household Food Insecurity Access Scale (HFIAS)	4.52	2.44	4.33	2.58	4.56	2.59	4.37	2.65
Improved water source (% HH)	0.31	0.46	0.38	0.48	0.35	0.48	0.39	0.49
Improved sanitation facilities (% HH)	0.92	0.27	0.93	0.26	0.96	0.20	0.98	0.14
Preparedness actions for current shocks (% HH)	0.79	0.41	0.76	0.43	0.78	0.41	0.75	0.43
Preparedness actions for future shocks (% HH)	0.95	0.22	0.95	0.22	0.94	0.23	0.96	0.21
Observations	483		474		482		485	

Qualitative data collection

Three villages of Kaliganj Upazila were selected for the qualitative interviews based on the presence of an adequate number of participants across intervention groups especially in cohorts 1 and 2 to align with the quantitative survey: Bazargram from Kushuliya union, Tarali from Tarali union and Paniya from Moutala Union. In total, the following interviews were conducted, balanced across intervention arm:

- 12 key informant interviews (KIIs) were conducted, including with World Vision staff, local service providers, Nobo Jatra facilitators, and village agents, along with local knowledgeable people.

- 9 focus group discussions (FGDs) were conducted: one female, one male, and one knowledgeable person FGD in each of the three villages, with representatives from different age and wealth groups and social classes.

- 35 life histories interviews were conducted with female Nobo Jatra programme participants and five with female non-participants from study areas with similar socioeconomic and demographic profiles to households in the study sites. Women were chosen because the Nobo Jatra UPG programme participants by design were all women. In all interviews, there was a particular focus on the last five years to allow for overlap with the project period.

Hypothesis 1: Participation in UPG with iMSD is associated with absorptive and adaptive resilience capacity development to tackle chronic poverty.

- **Quant**: Positive association (+) of engagement in most UPG/iMSD activities and perceptions that income increased
- **Qual**: diversified farming, livestock ladders, VSLA
- **Challenges**: absorption, space, mentorship

Livestock ladders and loss

Cash transfer

[NJ] kept **paying us taka 1000** for nine months. I would use that money to **buy some chickens and ducks**. I also bought **goat**(s)... all of the ducks and chickens **died**. Then I bought a billy goat and a doe... the female goat was **pregnant**. Anyway, the goat died with its unborn kid.

I bought [more] goats... [NJ] brought in a (**vet) doctor** from Kaliganj... He would come to the field for **vaccinating** people's cattle. We were told [how] to **feed our goats regularly and build a slightly elevated platform**... if we kept our goats on the ground, they might have caught cold... I didn't do all that for the first goat I bought. Yes, they had already given us those instructions, but I thought let's see if I can rear a goat my way... But I had learned my lesson.

Consequences of asset development

We **built a proper shed** for the goats. We **fed** the goats well. We **medicated** the goats. As the goats grew bigger, I **sold** each... We spent the money we earned... on **renovating our house**. We were able to **pay for our treatment**. It helped us **provide for our children**. My son is in third grade now.

Hypothesis 2: DRM training and mobilization and access to WASH services contribute to improving absorptive and anticipatory resilience capacities

- **Access to WASH and DRR services:** households better prepared to face a disaster today and in the future (+)
  - **DRR preparedness:** income increase (+)
- **Improved water source: income decline (-)**

'*They trained us about food – during cyclone or disasters **how to be safe, save dry foods and save houses from destruction**. Houses should be tied down to earth, then we have to go to cyclone shelters*' (Nusrat, SE)

'*The **rate of diarrhoea and acidity** was high back when there was no plant. Now it is comparatively lower. My brother owns a pharmacy and I have observed that the sales rate of acidity medicine has reduced... We now understand that water is the source of all the diseases.*' (KI, water plant)

Hypothesis 2: DRM training and mobilization and access to WASH services contribute to improving absorptive and anticipatory resilience capacities

but challenges remain

COVID-19
• "At the fish market… they used to pay my husband BDT20-50. But they would also give him some fish, which we could then sell… [During lockdown] they **couldn't transport** the fish to distant areas… you couldn't get a good price for your fish at that time. How the price of other things such as **oil, grocery items, and spices spiked**!"

Source: Jasmine (UPG+WASH, TE)

Ill health
• "I had gotten **ill**. After that, my **husband died**… I worry about how I would provide for my children now. I am overwhelmed with my **anxieties**… I **can't memorize** anything due to all my tensions. I can't sleep at night. I feel **dizzy** due to lack of sleep and my anxieties… Don't we have 6 members in the family? But there's **not a single person to earn income**."

Source: Jannat (UPG+WASH, TE)

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Hypothesis 2: DRM training and mobilization and access to WASH services contribute to improving absorptive and anticipatory resilience capacities

but challenges remain

We were doing **well during the year before the corona outbreak**. NJP started its programme, so we received some **financial support** from them. Thus we got to **rear goats, ducks, and chickens**. This helped us better our condition...

NJ intervention and cash transfer

Collaborative income-generation

Things were going well for us as my husband was earning income, and I too was earning some additional income. **We both contributed to the family**.

Source: Sadia (UPG+DRR, TE)

As the corona outbreak started, our **income decreased** as my husband couldn't go outside to work. Also, there was **no flow of cash** either. On top of that, I got **pregnant** with my son at that time... He had **pneumonia** too. We couldn't bear all the expenses of our family and thus I **sold the goats**...

Covid-19 and livestock sales

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- **Access to WASH and DRR services**: <u>women participate</u> in major household decisions (+)
  - Women who participate in making **major household decisions**: <u>increase in income</u> (+)
- **Membership in savings/credit groups** (with perceived ability to rely on group for support) and **membership in farmers groups**: <u>increase in income</u> (+)

> *"Since I was a member of the 'village development committee,' **I learned to speak out loud**. I am also a member of 'city working group' formed by the union parishad…. They taught us about **race discrimination**. I am from Rishi community. We could not eat or drink from the same place as other Hindu people. They said that we should protest this… we **can take legal help**." (Ritu, UPG+DRR+WASH, SE)*

Layering with iMSD: training, quality of market and extension services

'*They said that we do not have to go from house to house to sell things, rather the* **wholesaler will come to our house**.'

'*We had some lacking in our knowledge before about these issues. Nobo Jatra gave us training in Khulna about these and the trainers taught us a great deal. We learned about* **how to help the Khamari (livestock farmers) to make more profit**, *and some basic ideas of how to* **treat the diseases of livestock**.'

'*For example, it is better to have* **food and water in separate bowls for cows**. *It is a simple change that many village people don't know about. This is an example of the kind of things we learn at training and in the end,* **reaps a notable result**.'

Recommendations/ summary implications

H1: UPG+iMSD is associated with absorptive and adaptive resilience capacities to tackle chronic poverty.

- A best practice for design of poverty eradication programmes is to adopt **integrated, inclusive livelihoods** strengthening approaches.
- Nobo Jatra's **coaching** element is valuable, and can be built through assigned mentors and monitoring (perhaps relying on local mentors to promote sustainability)

H2: DRM+WASH is associated with absorptive and anticipatory resilience capacities to prevent impoverishment.

- Better targeting of **ill health is** critical.
- Further expanding DRM responses to focus on **livestock amid flood and cyclones** could also prevent other key sources of impoverishment.

H3: SBCC and gender empowerment is associated with sustained escapes from poverty.

- Activities to strengthen women's economic empowerment would benefit from a negotiated approach to **norm change**.
- A variety of factors beyond programme interventions can enable sustained poverty escapes, and could be considered in a **systems framing**.

Thank you
For suggestion or questions, please mail: V.Diwakar@ids.ac.uk

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Appendices
Relationship between activities and subjective increase in income

Outcome (Income Increases) Activities	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Cash or asset transfer	0.016 (0.074)									
Individual/group coaching		0.213*** (0.081)								
Entrepreneurial or financial literacy training			0.213*** (0.081)							
Business development				0.425** (0.176)						
Financial inclusion					0.035 (0.089)					
Training from pvt & govt						0.334*** (0.129)				
Market linkages							0.378*** (0.092)			
Input access								0.186 (0.125)		
Extension service access									0.169** (0.086)	
Climate smart ag. training										0.345*** (0.071)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Constant	0.705** (0.294)	0.599** (0.291)	0.500* (0.298)	0.295 (0.338)	0.684** (0.302)	0.698** (0.288)	0.563* (0.292)	0.688** (0.289)	0.621** (0.293)	0.479 (0.294)
N	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743

Notes: *each column represents a different logit regression with the variable of interest identified on the left-most column, and all controls remaining the same. Standard errors in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01*

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Relationship between DRR actions and reported income change

Variables	Outcome: Income increase (1)	Income increase (2)	Income decrease (3)	Income decrease (4)
Preparedness actions against current shocks	0.235*** (0.082)		-0.184* (0.094)	
Preparedness actions against future shocks		0.502*** (0.174)		-0.358* (0.194)
Controls	Y	Y	Y	Y
Constant	0.577* (0.297)	0.293 (0.338)	-1.248*** (0.340)	-1.090** (0.387)
N	1745	1743	1744	1746

*Standard errors in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01*

Appendices

Relationship between WASH actions and reported income change

Variables	Outcome	Income increase (1)	Income increase (2)	Income decrease (3)	Income decrease (4)
Improved sanitation facility		-0.001 (0.058)		-0.016 (0.048)	
Improved water source			0.030 (0.022)		-0.030* (0.017)
Controls		Y	Y	Y	Y
Constant		0.742*** (0.097)	0.743*** (0.083)	0.126 (0.080)	0.109 (0.069)
N		1729	1729	1730	1730

*Standard errors in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01*

Appendices

The effects of activities on women's economic empowerment

Outcome	Minor Decisions				Major Decisions			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Key Variables								
All activities	0.248 (0.241)				0.021 (0.223)			
All WASH		0.192 (0.127)				0.242* (0.126)		
All DRR			-0.056 (0.109)				-0.067 (0.106)	
WASH + DRR				0.181 (0.124)				0.268** (0.121)
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Constant	1.318*** (0.270)	1.157*** (0.294)	1.390*** (0.280)	1.166*** (0.294)	1.368*** (0.267)	1.153*** (0.293)	1.434*** (0.280)	1.128*** (0.291)
N	1743	1743	1746	1743	1743	1743	1746	1743

Standard errors in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01

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Relationship between group participation and reported income change

Outcome Variables	Income increase (2)	Income decrease (3)
Savings/credit group	0.441***	0.198
	(0.106)	(0.131)
Famers group	0.396**	0.350
	(0.164)	(0.218)
Market group	-0.176	-0.283
	(0.182)	(0.210)
Religious group	-0.083	-0.362*
	(0.168)	(0.196)
Women group	0.116	0.178*
	(0.081)	(0.104)
VDC	-0.081	0.191
	(0.130)	(0.175)
Controls	Y	Y
Constant	0.309	0.980***
	(0.248)	(0.314)
N	1557	1557

*Standard errors in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01*