



Southern African Social Policy Research Insights

Adaptive Social Protection in Indonesia

Stress-testing the effect of a natural disaster on poverty
and vulnerability

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Adaptive Social Protection (ASP)

- Indonesia among the countries with highest exposure to natural disasters
 - Climate change expected to exacerbate risks in the future
 - Government's financial strategy to prepare for such events includes focus on protection of households and communities affected by disasters with specific focus on low-income groups
- International and national organisations advocate for 'Adaptive Social Protection' systems (ASP) (Bowen et al. 2020)
 - Links social policy with strategies on disaster risk reduction and climate change adaptation (Davies, 2013)
 - Main idea: support poor and vulnerable households to be resilient to shocks
 - 3 dimensions: prepare for shocks, cope with shocks and adapt to shocks



Stress-testing the adaptiveness of the Indonesian social protection system

Apply ASP lens to study the role of the Indonesian tax-benefit system in improving households' ability to prepare for and to cope with an economic shock caused by a natural disaster:

- How comprehensive are Indonesia's current social protection arrangements to prepare for shocks?
- How adequate are the social protection arrangements to cope with shocks?
- What additional policies or modifications could help ensure that people can better prepare for and cope with shocks?



Country context and social policy situation

- Over 270 million inhabitants, country consists of 17,000 islands
- Social insurance schemes: health, old-age, survivors and unemployment
- Social assistance schemes: Family Hope Programme (PKS), Electronic Food Voucher / Basic Food Programme (BPNT), Smart Indonesia Programme (PIP)
- Eligibility assessed using 'Integrated Database on Social Welfare' (DTKS)
 - Covers about 38 percent (but varies in different regions) → not large enough for COVID-related vertical and horizontal expansion
 - Ranks households based on proxy-means test (household composition, educational status, housing conditions, asset ownership and others) → determinants of welfare differ between districts/cities
 - Last update in 2015 although local governments should update regularly but not all have a budget for it (TNP2K 2020)



INDOMOD

- Developed by SASPRI for use by Indonesian government in collaboration with UNICEF Indonesia (Barnes et al., 2021)
- Runs on EUROMOD platform (Sutherland and Figari, 2013)
- Analysis based on
 - pre-COVID March 2020 policy system
 - SUSENAS (National Socio-Economic Survey Indonesia) data for March 2020 (BPS, 2020) which covers 1.3 Million individuals
- Per-capita consumption information in data used to rank households (proxy for DTKS)
- All results are based on equivalised household consumption levels using per-capita equivalent scale and 2020 national poverty line (province and area specific)



El Niño as a showcase for a natural disaster

- Climate phenomenon with the ability to change the global atmospheric circulation
 - Causes droughts in several regions of Indonesia, a disruption of established crop patterns, harvest losses and forest fires
 - Affecting the livelihood of those working in agriculture, forestry, transportation, tourism, and public health sector
- Simulation of income shock
 - by income source and sector based on information from past El Niño (WFP, 2016)
 - in regions more likely to be severely affected by El Niño (Setiawan, Lee & Rhee, 2017)



Simulated policy scenarios

Preparedness to shock → assessed at the national level

Scenario	Applied shock	Applied policy reform	
National baseline	No shock	None	
National baseline plus augmented benefits	No shock	Augmented benefits	<ul style="list-style-type: none"> • Benefit for poorest 70% of elderly and disabled • Higher benefit amount (PKH) for families with more children • Extension of coverage of BPNT and PKH to poorest 40%

Coping with shock → selected provinces likely to be more severely affected

Scenario	Applied shock	Applied policy reform	
Regional baseline	No shock	None	
Regional shock	Income losses	None	
Regional shock plus augmented benefits	Income losses	Augmented benefits	
Regional shock plus reactive benefits	Income losses	Reactive benefits	<ul style="list-style-type: none"> • Pre-employment Card for unemployed • Cash transfer similar to Village Fund Cash Transfer • BPNT amounts reflect household size



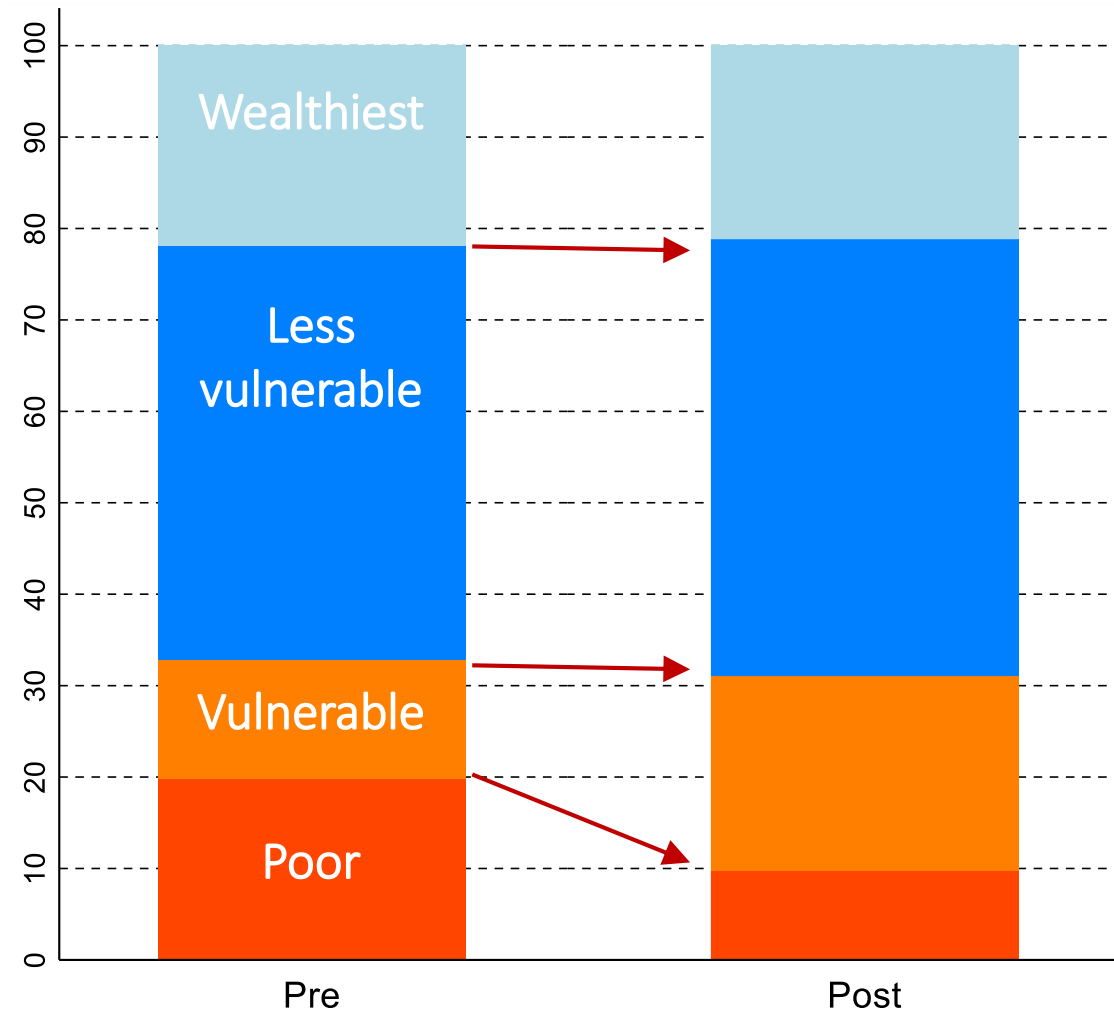
Analysis

- Focus on four consumption groups
 - Poor with consumption levels below the national poverty line
 - Vulnerable with consumption levels 1.5 times below the poverty line
 - Less vulnerable with consumption levels below 3.5 times the poverty line
 - Wealthiest with consumption levels of 3.5 times the poverty line or more
- Outcome measures
 - Share in each group (share in poor = poverty head-count rate) and transition to other groups
 - Benefit coverage rate: proportion within each group receiving support
 - Relative Welfare Resilience Indicator: average post-event consumption as a proportion of the pre-event consumption
 - Predicted probabilities of being poor or vulnerable by socio-demographic characteristics



How well does the current tax-benefit system increase consumption levels to lift individuals out of poverty or vulnerability?

Distribution of groups before and after taking the tax-benefit system into account

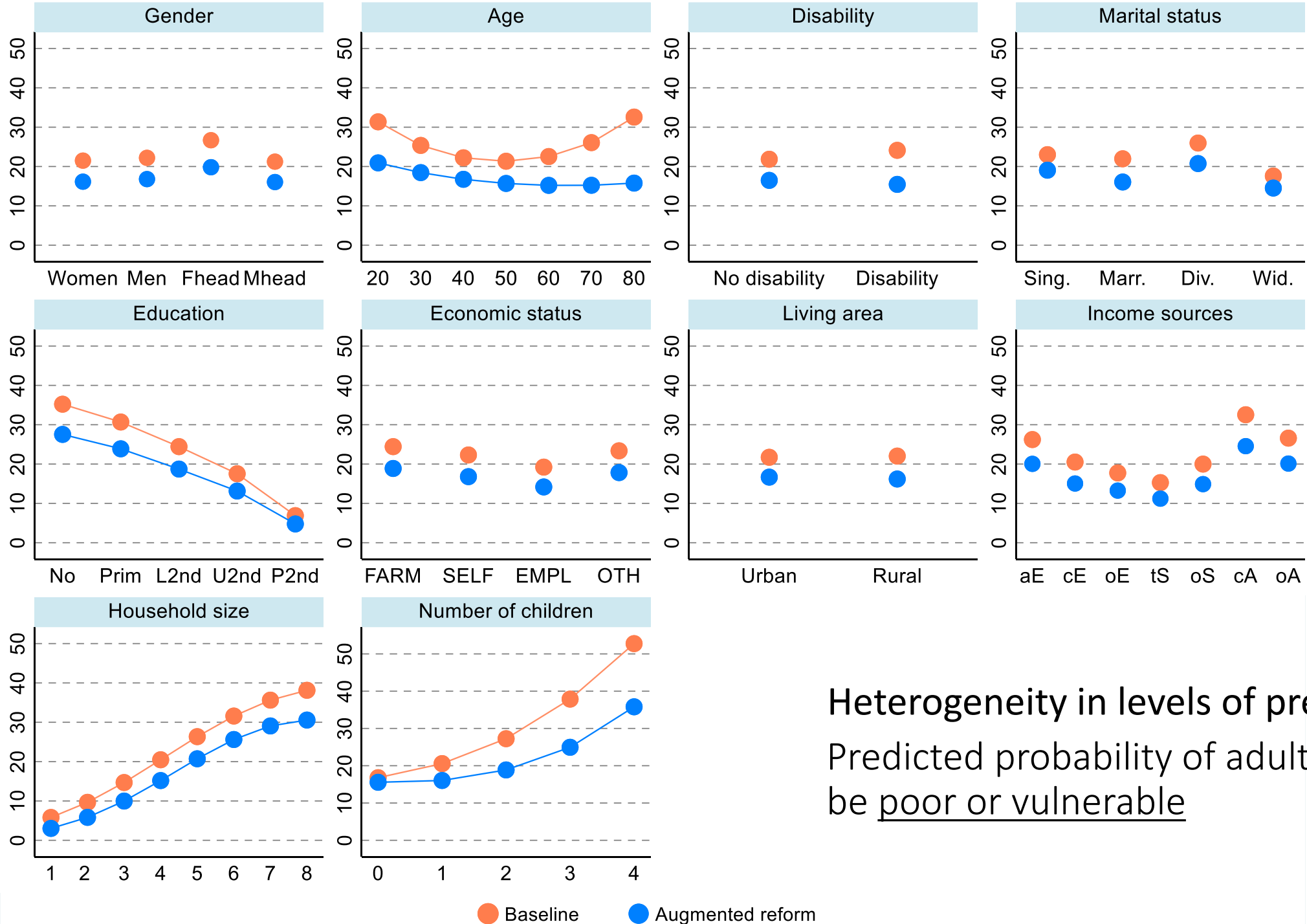




Improving preparedness of the current tax-benefit system?

Overview of indicators: baseline versus augmented reform scenario by group

		(A) Baseline				(B) Augmented reform			
		PO	VU	LV	WE	PO	VU	LV	WE
Share of group		9.8	21.3	47.8	21.2	8.8	14.3	55.7	21.3
Transition of	Poor	-	-	-	-	90.1	9.2	0.7	0.0
	Vulnerable	-	-	-	-	0.0	62.8	37.2	0.0
	Less vuln.	-	-	-	-	0.0	0.0	99.8	0.2
	Wealthiest	-	-	-	-	0.0	0.0	0.0	100.0
Coverage rate	Total	100.0	100.0	3.9	0.8	100.0	100.0	41.0	0.8
	PKH	89.1	45.8	0.0	0.0	89.1	87.3	25.7	0.0
	PIP	72.9	71.1	3.0	0.8	72.9	71.1	21.3	0.8
	BPNT	100.0	100.0	2.7	0.0	100.0	100.0	30.7	0.0
	Disabled	-	-	-	-	1.4	1.0	0.7	0.0
	Elderly	-	-	-	-	26.5	21.4	15.4	0.0
RWRI		-	-	-	-	104.9	109.4	107.1	100.0



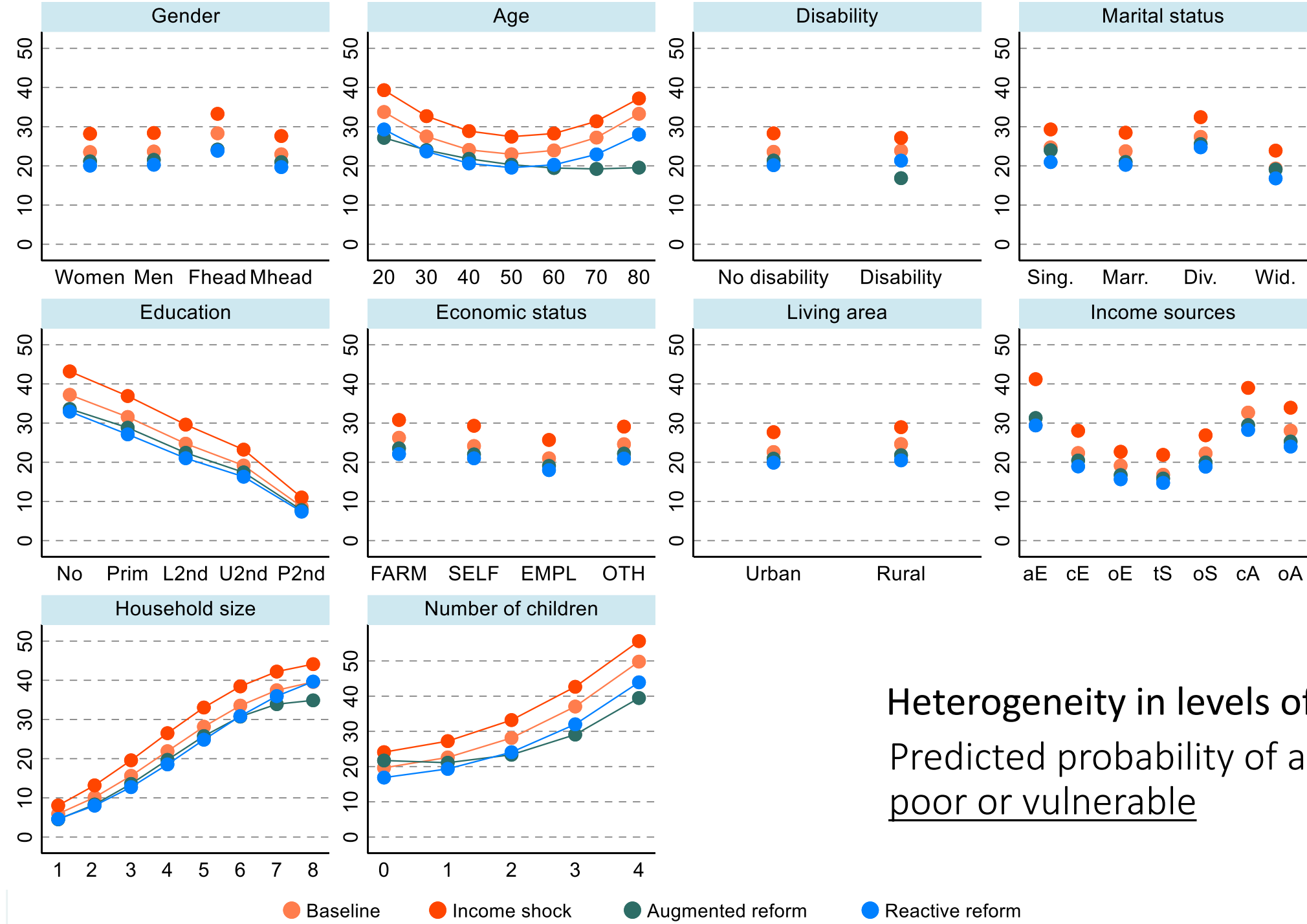
Heterogeneity in levels of preparedness
Predicted probability of adults to
be poor or vulnerable



Improving coping in selected provinces?

Overview of indicators for selected provinces by groups: baseline versus income shock and reform scenarios

		(A) Baseline				(B) Income shock				(C) Shock + augmented reform				(D) Shock + reactive reform			
		PO	VU	LV	WE	PO	VU	LV	WE	PO	VU	LV	WE	PO	VU	LV	WE
Share of group		11.4	21.2	46.6	20.7	15.3	21.5	44.2	19.0	13.6	14.6	52.7	19.1	9.9	20.0	51.0	19.0
Transition of	Poor	-	-	-	-	100.0	0.0	0.0	0.0	92.8	6.7	0.5	0.0	73.9	26.1	0.0	0.0
	VU	-	-	-	-	16.9	83.0	0.0	0.0	13.4	58.9	27.8	0.0	6.5	74.5	19.0	0.0
	LV	-	-	-	-	0.6	8.2	91.2	0.0	0.2	2.9	96.7	0.2	0.2	2.6	97.1	0.0
	WE	-	-	-	-	0.1	0.0	8.1	91.8	0.1	0.0	8.1	91.7	0.1	0.0	8.0	91.9
Coverage rate	Total	100.0	100.0	4.1	1.0	100.0	100.0	4.3	1.0	100.0	100.0	41.5	1.0	100.0	100.0	52.3	2.6
	PKH	87.6	45.9	0.0	0.0	87.6	46.2	0.0	0.0	87.6	86.1	24.7	0.0	87.6	45.9	0.0	0.0
	PIP	70.0	69.2	3.1	1.0	70.0	69.2	3.2	1.0	70.0	69.2	20.4	1.0	70.0	69.2	3.1	1.0
	BPNT	100.0	100.0	2.7	0.0	100.0	100.0	2.9	0.0	100.0	100.0	30.0	0.0	100.0	100.0	2.7	0.0
	DIS	-	-	-	-	-	-	-	-	1.4	1.0	0.8	0.0	-	-	-	-
	Elderly	-	-	-	-	-	-	-	-	27.7	24.0	17.1	0.0	-	-	-	-
	Rural	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	48.1	0.0
	UE	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	2.1	1.7
RWRI		-	-	-	-	91.1	92.7	94.6	96.4	96.0	102.0	101.7	96.4	107.6	104.1	102.0	96.4



Heterogeneity in levels of coping
Predicted probability of adults to be
poor or vulnerable



Main results

- System, prior to the COVID-19 pandemic, performs fairly well
 - Social protection system moves 50 percent of poor households from below the poverty line to the vulnerable group
 - But: benefits not sufficiently adequate to lift everyone out of poverty in normal times.
 - The risk of poverty is greatest for people in their 20s and 80s, for disabled people, for people in large households, and in households with more than two children.
- Coping with a disaster: current system does not protect adequately
 - Poverty increases and those in poverty become poorer
 - 17 percent of vulnerable fall into poverty and 9 percent of less vulnerable become vulnerable
- Both hypothetical reform scenarios reduce the impact of the shock
 - The reactive reform is more effective in reducing poverty
 - The augmented reform scenario is more efficient in reducing poverty and vulnerability risks for those identified as needing more support, i.e. households with children and elderly people.



Main policy conclusions

- High probability of households containing children being poor or vulnerable
 - further exploration of child-specific support needed
 - Benefit amounts need to take household size into account
- Key criterion of ASP is quick respond to emergencies → challenging with the current system of the integrated database
 - But the existing system can in principal support disaster-affected households if identification is improved
- Adequate financial planning for disasters by government → recently implemented mechanisms will help ensure fast and transparent flow of sufficient disaster funds when disasters occur
- BUT: need to identify ways to finance more comprehensive social security provision in normal times to improve level of preparedness



Thank you!

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Share affected by income shocks

By income source and sector	Severity of income shock			
	Severe >30%	Moderate 10-30%	Slight <10%	No change
Self-employment income from trade, hotel & restaurants	6	9	7	78
Other self-employment income	8	21	9	62
Employment income from construction & processing industry	10	11	9	70
Agricultural employment income	46	27	10	18
Other employment income	1	6	2	91
Agricultural income from rice crop & palawija	49	21	15	15
Other agricultural income	33	29	6	32

Source: Adapted from WFP (2016) Figure 3

Note: The analysis applies an income shock of 35 percent for severe losses, 20 percent for moderate losses, 5 percent for slight loss.



Fiscal impact of reforms

	INDONESIA		Selected provinces			
	Baseline	Augmented reform	Baseline	Income shock	Shock + augmented reform	Shock + reactive reform
PKH	59,240	118,362	21,120	21,120	39,305	21,120
PIP	12,254	16,923	4,188	4,188	5,660	4,188
BPNT	48,000	69,881	17,218	17,218	24,352	38,841
Disabled	-	1,338	-	-	466	-
Elderly	-	38,286	-	-	14,166	-
Rural	-	-	-	-	-	27,704
Unemployed	-	-	-	-	-	731
Total expenditure	119,494	244,790	42,526	42,526	83,949	92,584
Absolute increase	-	+125,296	-	-	+41,423	+50,057
Relative increase	-	105%	-	-	97%	118%

Source: own calculations using INDOMOD v3.1.

Note: Total expenditure in Billion IDR.