Example

Virtual Event 15-18 June 2020

2020 Asia-Pacific Statistics Week

Leaving no one and nowhere behind

Identification of poor households for targeting in Nepal

Action Area C.

Integrated statistics for integrated analysis (SC5)

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DECADE OF ACTION

UNITED NATIONS ESCAP Economic and Social Commission for Asia and the Pacific

UKaid from the British people

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Poverty Measurement Practices in Nepal

- Cost of Basic Needs (CBN) approach of poverty measurement from LSMS methodology developed by the WB (Caloric requirement of food and other non-food components)
- First scientific poverty measurement after NLSS 1995-96 (follow up at 2003-04 and 2010-11)
- Results at National, Urban-Rural, Eco-Belt , Dev. Region, Geographic group
- Poverty Results at District, Ilaka (Sub-district), Municipality & large VDC derived from Small Area Estimation using Census and NLSS (2006 & 2013)

Organization of Poor Households Support Program

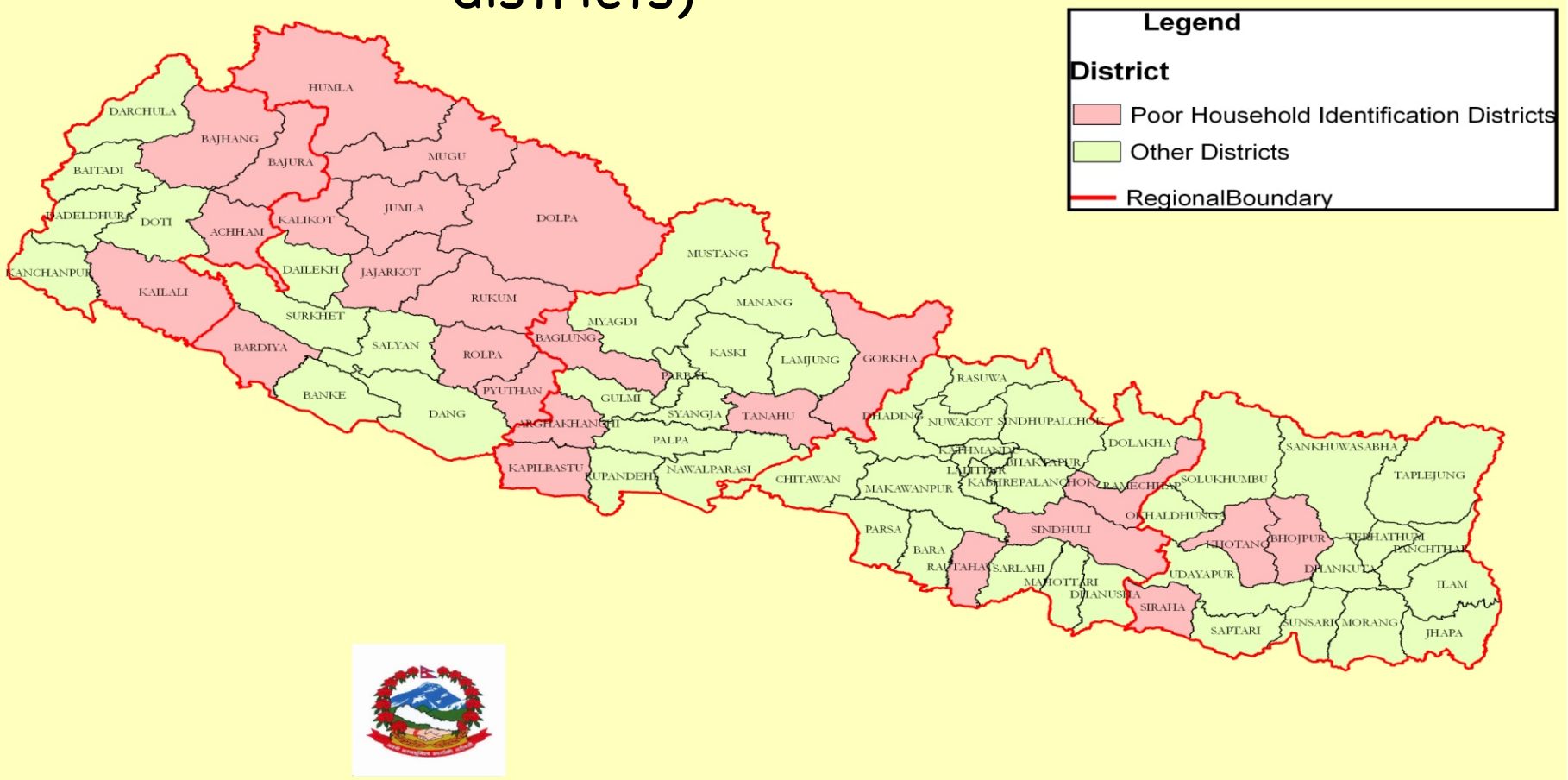
- GoN has established Poor Households Support Coordination Board, Secretariat under MoCPA (2012)
  - Carried out Household Survey to identify poor HHs in 25 districts (2013)
  - Used PMT (Proxy Means Test) method for the identification
  - Strong and unique database of socio-economic status, frequently updated
  - Aim is to depart from area targeting to individual targeting
  - Help to streamline targeting programs of line ministries, development partners, INGOs/NGOs/CBOs
  - Provision of central objective monitoring mechanism for the transfer of resources to the focused group (poor)

Functions of Poor Households Support Program

- Identify the poor households and distribute identity cards
- Coordinate and regulate pro-poor programs carried out by various governmental and non-governmental agencies
- Provide policy guidelines for pro-poor programs
- Report monitoring and evaluation of the targeted programs
- Facilitate and develop integrated approach and system to provide benefit packages to the beneficiary groups

Selected District for Poor Household Identification Program-Phase I

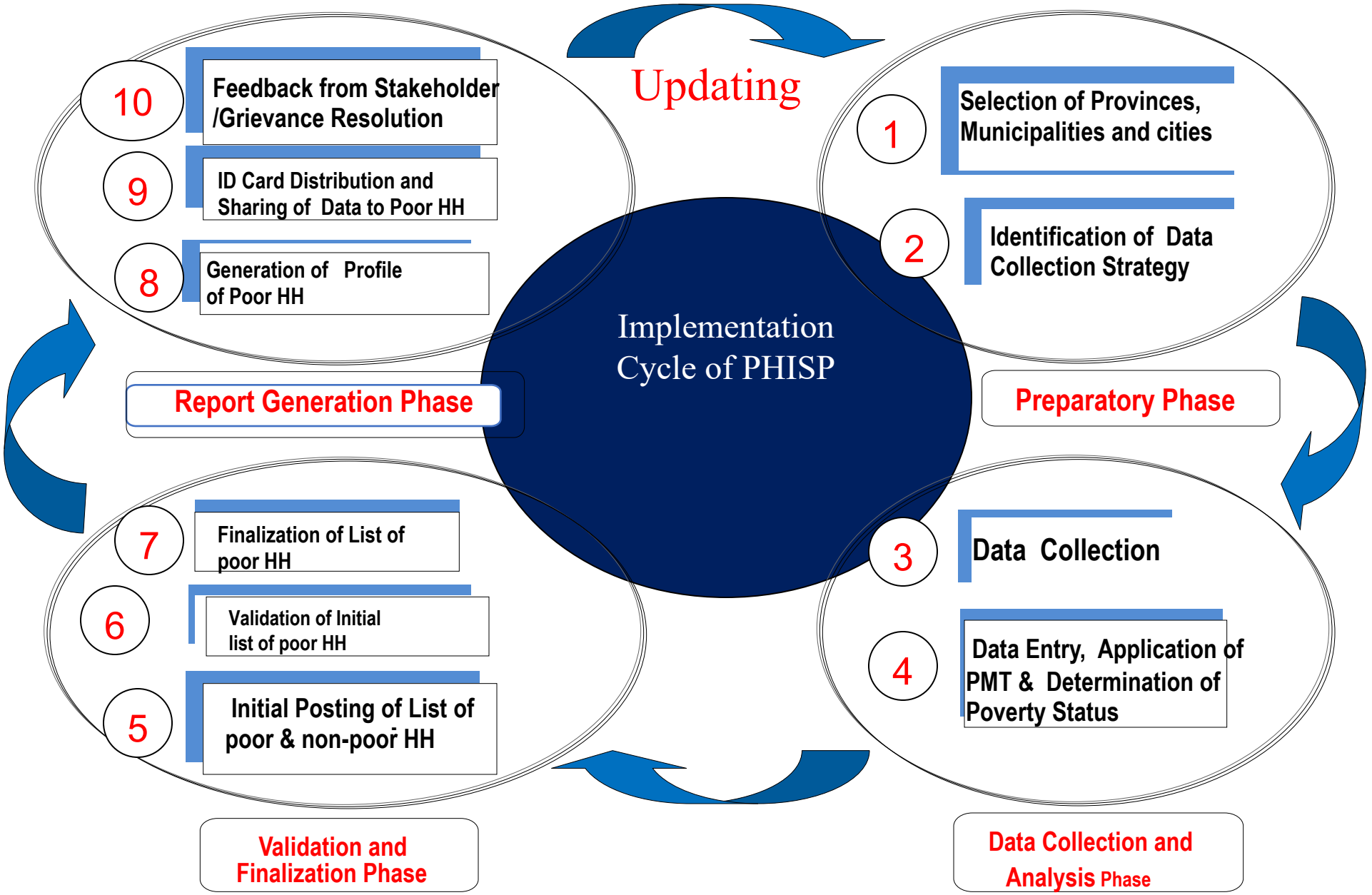
(25 districts out of 75 districts)



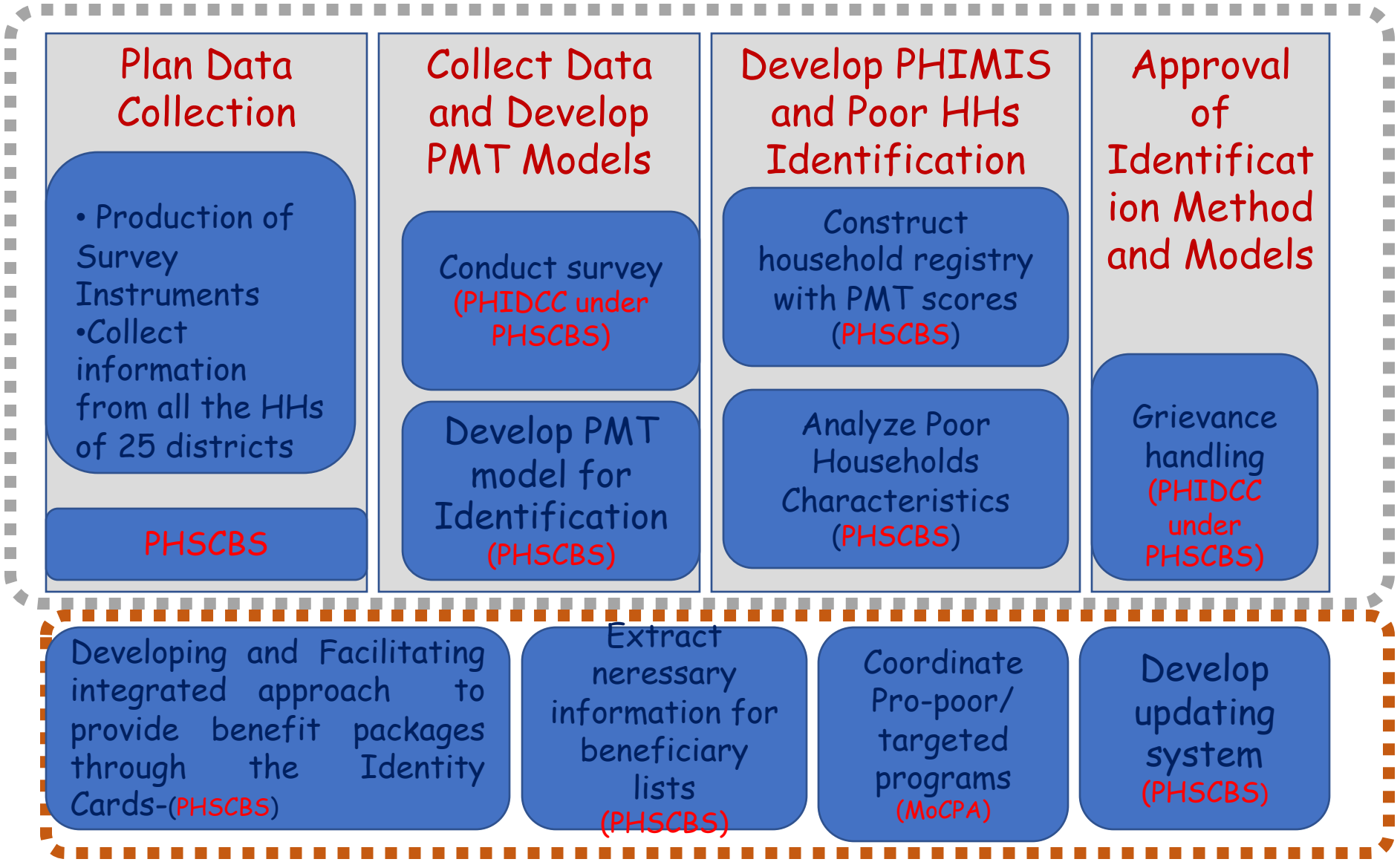
Ministry of Cooperatives and Poverty Alleviation

Poor Household Identification and Identity Card Management and Distribution Coordination Board Secretariat(PHI2CMDCBS)

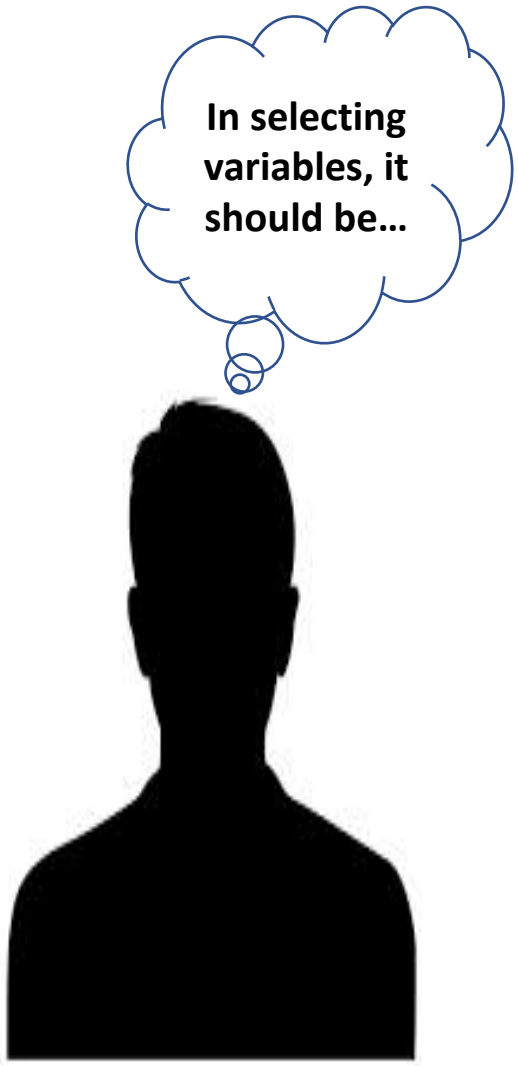
Implementation Cycle of Poor Household Identification Process



Work Flow of Poor Households Support Program



What is Proxy Means Test?

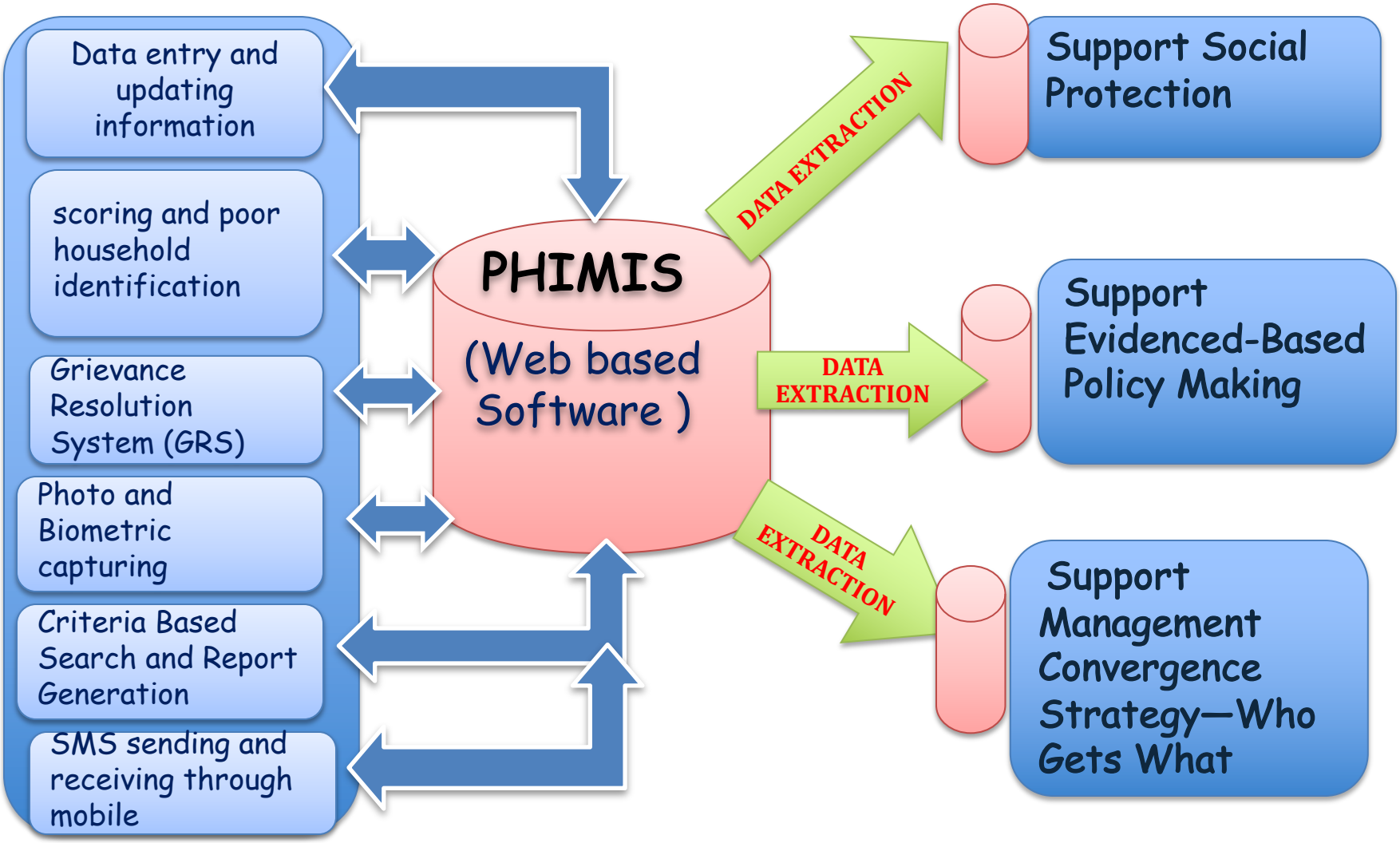


PROXY MEANS TEST (PMT) is a statistical model that estimates the consumption level of households using the ***proxy variables*** indicated in the Household Questionnaires

- Country specific
- Not easily manipulated
- Easily observable and verifiable
- Data availability

PHIMIS – A Web-based Software

PHIMIS identifies who and where the poor are in the country



Method for Identifying Targeted Beneficiaries

- Completed survey and identification of poor HHs in 25/75 districts in the first phase.
- Census of every household.
- PMT tool based on comparable Nepal Living Standards Survey-III (2010/11) variables.
- Statistically significant predictor variables using 16 questions.

Indicators for PMT model

- **Household Characteristics:18 indicators**
- Demographic/Human capital characteristics (4):
  - household size, education of household head, enrolment of children in private school and absentees member at HH (remittance sender)
- Physical housing characteristics (4):
  - type of roof, floor and foundation, household ownership
- Household amenities (4):
  - toilet, lighting fuel, drinking water, cooking fuel
- Household facilities (3): landline phone, cable TV, internet,
- Geographic/Ethnic group (3):
  - 5 dev. regions, 3 ecological belts, 11 caste/ethnic group

Key questions in PMT model

- **Which formula to use?**
  - Typically linear weighted combination of the variables
  - Weights in the formula derived using regression on HH survey data (NLSS 2010-11)

$$\ln(Y) = \beta_0 + \beta(X) + \varepsilon$$

  - Where Y is per capita consumption, β_0 is the intercept/constant, β is a vector of coefficients, X is a vector of predictor variables, and ε is the error term.

Consideration on Regression Modelling

- Ensured explanatory variables exist in NLSS 2011 (5988 HHs) PHIS 2013 (1224500 HHs) data.
- Forward stepwise regression with population weight on per capita consumption (logarithmic) is developed on 57 variables of 18 indicators
- Single (national) model was applied after the series of regional models were tested with regression diagnostics.
- The nominal per capita consumption was converted to real one using regional price indices.
- Belt and Region dummies were used to correct regional influences of the variables.

ANOVA & Regression Results

Source	SS	df	MS	Number of obs	=	27514367
				F(57, 27514309)	>	99999
Model	4231559.32	57	74237.8828	Prob > F	=	0.0000
Residual	4178074.24	27514309	0.15185096	R-squared	=	0.5032
				Adj R-squared	=	0.5032
Total	8409633.56	27514366	0.305645188	Root MSE	=	0.38968

Variable	lrealpce	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
landln_phone	phone_1	0.1860281	0.0002859	650.61	0.0000	0.1854677	0.186588
cable_tv	cabletv_1	0.1662332	0.0002384	697.17	0.0000	0.1657658	0.166700
internet	internet_1	0.1177443	0.0006386	184.36	0.0000	0.1164926	0.11899
belt_hills	belt_2	0.0695244	0.0003303	210.46	0.0000	0.0688769	0.070171
belt_tarai	belt_3	0.1606217	0.0004233	379.41	0.0000	0.159792	0.161451
region_centr	dev_region_2	-0.0607378	0.0002202	-275.82	0.0000	-0.0611694	-0.060306
region_west	dev_region_3	-0.0753188	0.0002618	-287.71	0.0000	-0.0758319	-0.074805
region_mwest	dev_region_4	-0.0850483	0.0002974	-286	0.0000	-0.0856311	-0.084465
region_fwest	dev_region_5	-0.2996195	0.0003368	-889.49	0.0000	-0.3002797	-0.298959
absentee_mem	abs	0.0710856	0.0001561	455.32	0.0000	0.0707796	0.071391
constant	**_cons**	**11.23775**	**0.0010612**	**1.10E+04**	**0.0000**	**11.23567**	**11.2398**

Tasks Carried Out

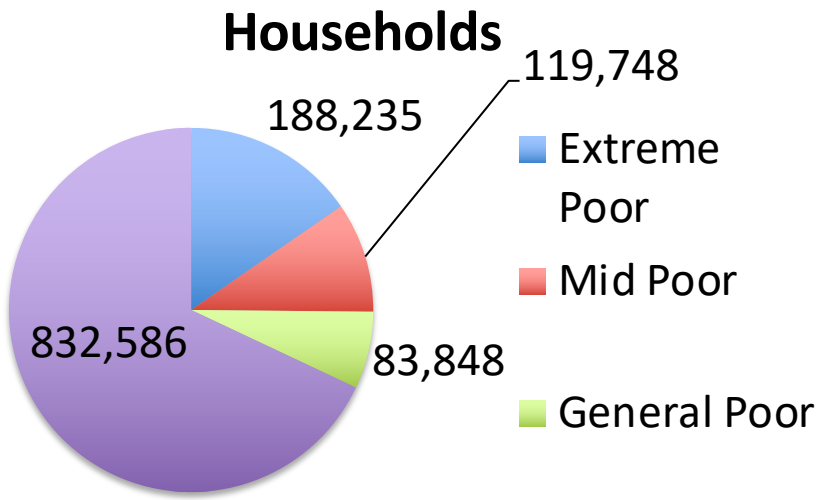
- Count households at lowest level of disaggregation (Ward)
- Identification of Missing Wards
- Treatment of the VDCs/Municipal wards where there is *unnatural decline in the HHs (Compared to the households of 2011 Census)*
- Data Editing, Coding and Data Entry to the database for the recently identified unused questionnaires
- Imputation of the variables for the withheld households (ethnicity, housing, amenities, etc.)
- Special Verification of the Households with disputes/recommendation from the VDCs/Municipal wards) : all the relevant indicators reviewed

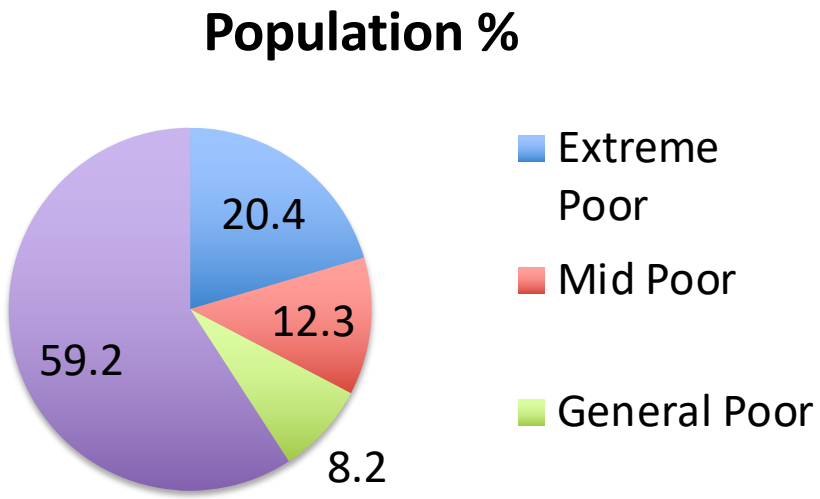
Problems Encountered/Lessons Learned

- **Lack of unique ID** of the households (Household Serial Number)
- Missing ID of the households / Duplicates Households
- Mismatches of Wards, VDCs/Municipalities, Districts
- Scanned images of filled-in questionnaires do not match with the survey database during verification
- **Missing households** at the ward level
- Verification of the grievance with scanned image is a challenge
- No proper validation/complaints from the public

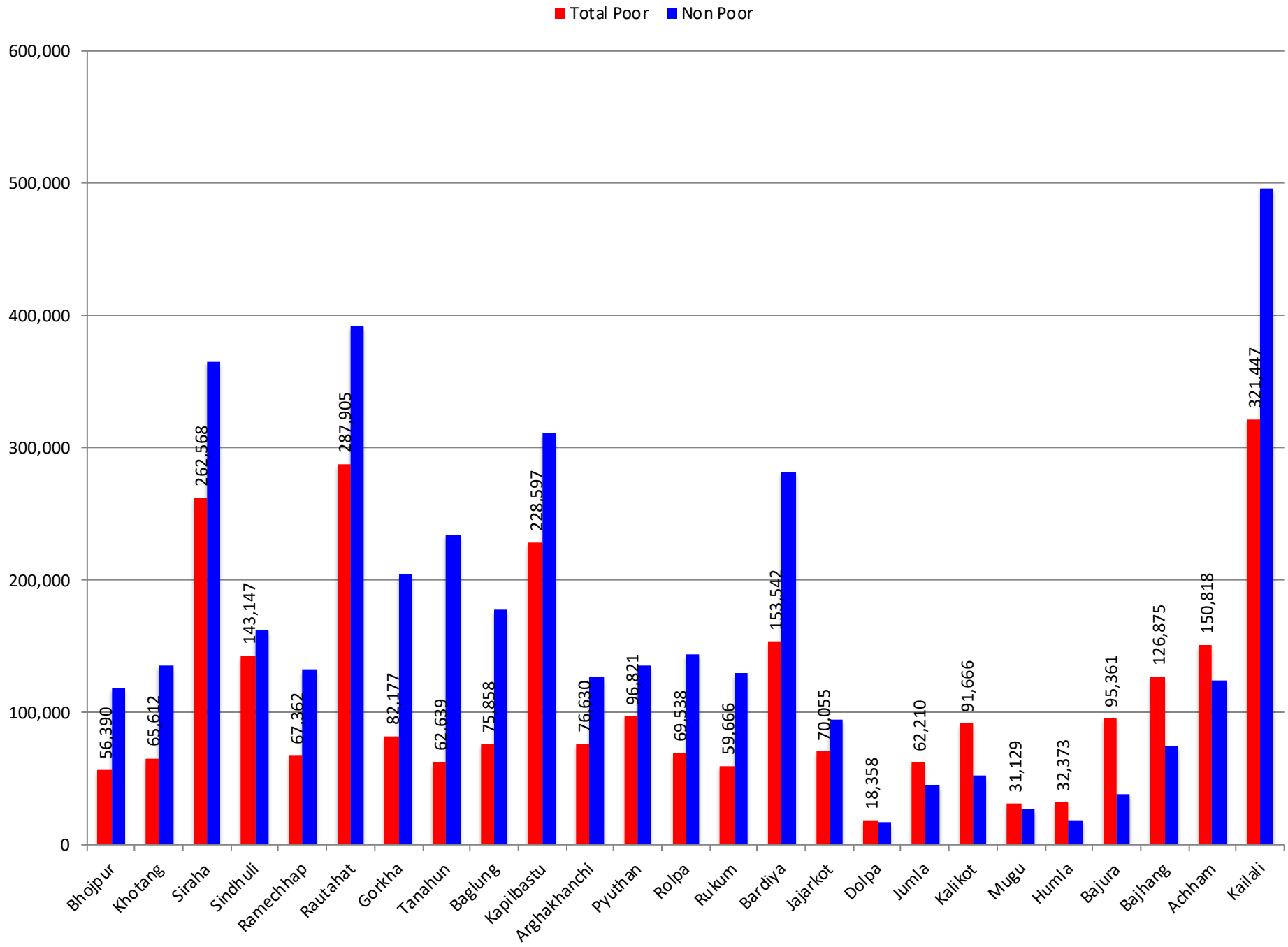
Grievance Handling

- Grievance handling mechanism on preliminary list of poor HHs (ward)
- Validation by field observation, interview with the HH heads, civil society, knowledgeable persons (technical)
- Review at local level by VDC/Municipal secretaries (local level)
- Further investigation by District Coordination Committees (district)
- Consistency of the variables used for PMT with other characteristics of the households, response on self-reported poor (centre)





Welfare status	Households	Household %	Cum. %	Population	Population %	Cum. %
Extreme Poor	188,235	15.4	15.4	1,394,286	20.4	20.4
Mid Poor	119,748	9.8	25.2	836,619	12.3	32.7
General Poor	83,848	6.9	32.0	557,839	8.2	40.8
Non Poor	832,586	68.0	100	4,040,487	59.2	100
Total	**1,224,417**	**100**		**6,829,231**	**100**	


Total Poor
Non Poor
600,000
500,000
400,000
300,000
200,000
100,000
0
56,390
65,612
262,568
143,147
67,362
287,905
82,177
62,639
75,858
228,597
76,630
96,821
69,538
59,666
153,542
70,055
18,358
62,210
91,666
31,129
32,373
95,361
126,875
150,818
321,447
Bhojpur
Khotang
Siraha
Sindhuli
Ramechhap
Rautahat
Gorkha
Tanahun
Baglung
Kapilbastu
Arghakhanchi
Pyuthan
Rolpa
Rukum
Bardiya
Jajarkot
Dolpa
Jumla
Kalikot
Mugu
Humla
Bajura
Bajhang
Achham
Kailali

Recommendations to Poor HHs Support Program

- Conditional Cash Transfer by type of poor (Extreme, Mid, General)
- Health Insurance premium by type of poor HHs (100, 75, 50 %)
- Scholarship for 2 students of Poor HH based on school record
- Support for extreme poor HHs on Food sufficiency to afford for Cereals, Pulses, Oil, Salt, etc.
- Employment oriented need-based skill development training for identified poor HHs
- Support for improving dwelling, solid cooking fuel

Thank you