

Empirical Livelihood Analysis and its Potential for Regional Planning and Policy Advise

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What is a livelihood strategy?

Livelihood strategies refers to patterns of productive activities that generate the means for survival

- Can be conceived as choices that households make
- Short vs medium vs long term choices (activities!)
- Short and medium term choices constrained by long-term ones
 - Assets (specially land in rural areas)
 - Human capital
 - Geography and markets (access!)
 - Other man/cultural-generated constrains (gender, institutions, policies, etc.)

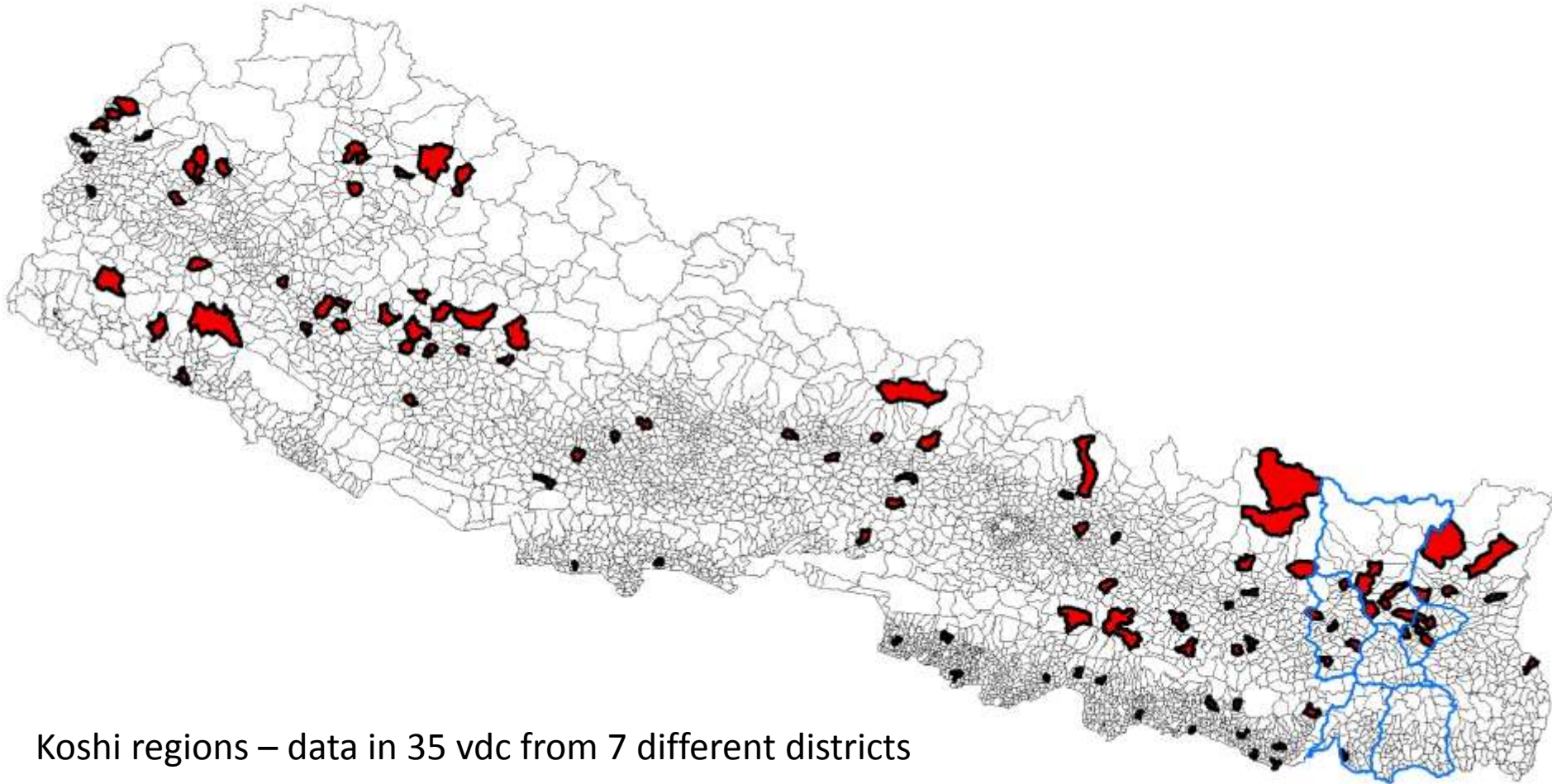
Livelihoods can be too abstract to quantitatively define, so empirically robust and coherent validated approaches should be used

Empirical ways to analyse livelihoods

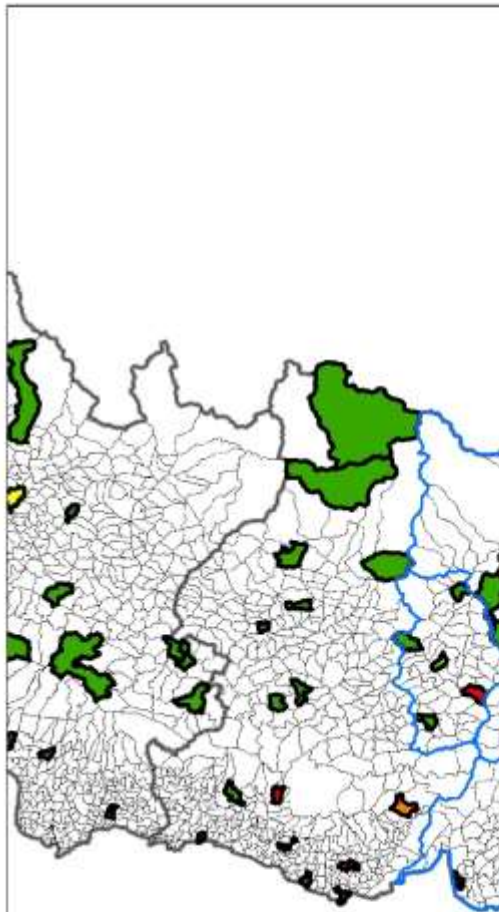
- Factor Analysis
 - Principal Component Analysis
 - Cluster analysis
 - Other methods
-
- In this study we use PC and Cluster Analyses to group households into different 'livelihoods'

The KEY POINT is to decide what factors (variables) need to be considered to define the grouping of households
Specially for the case of Nepal and/or the Koshi Basin
(robust and coherent analysis)

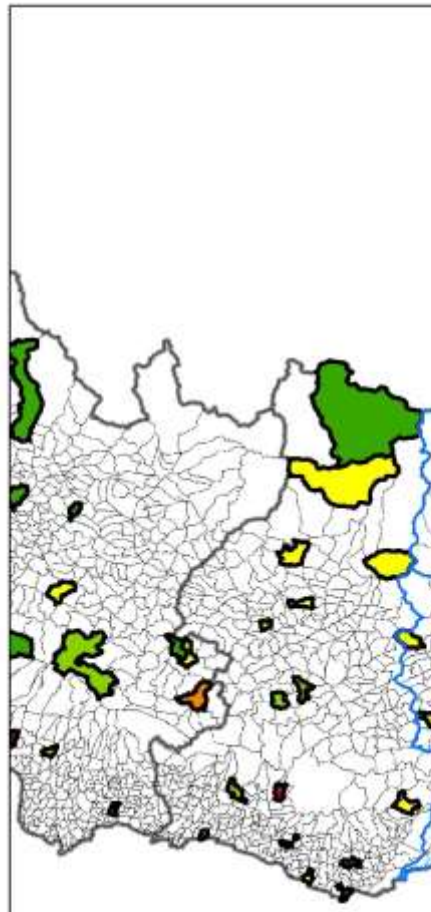
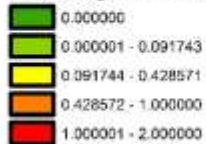
The PVAT data (n= 6,142 | Koshi regions = 2,684)



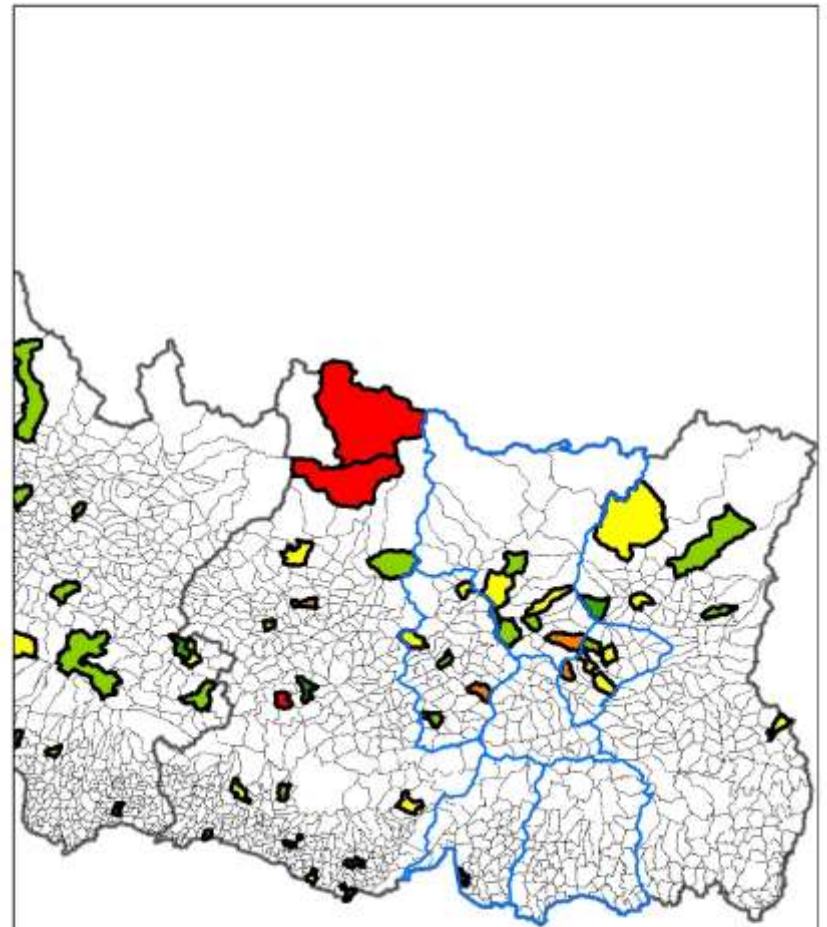
Koshi regions – data in 35 vdc from 7 different districts



Percentage of HH revenues comign from f



Percentage of HH revenues comigr



Percentage of HH revenues comign from Remittances



Some facts in data...

- HHs dependence on remittances is considerable – more than 30% of all households report 40% or more of its total annual income coming from remittances
- Fishing is not an important activity
- Of the reported HHs with Ag land, most of them report ownership of it
- There is an interesting pattern of changes in behaviour and activities product of what can be considered Climate Change – given specially by changes in rain patterns, according to the survey
- Off-farm non-farm self-employment is very limited (less than 5% in whole sample, less than 2% in Koshi)
- Around 40% of HHs report at least one member working off-farm (in Koshi just around 30%)
- Close to half of HHs reported credit constraints, ~45% in Koshi HHs
- Around 30% of HHs report some conflicts over water with neighbours

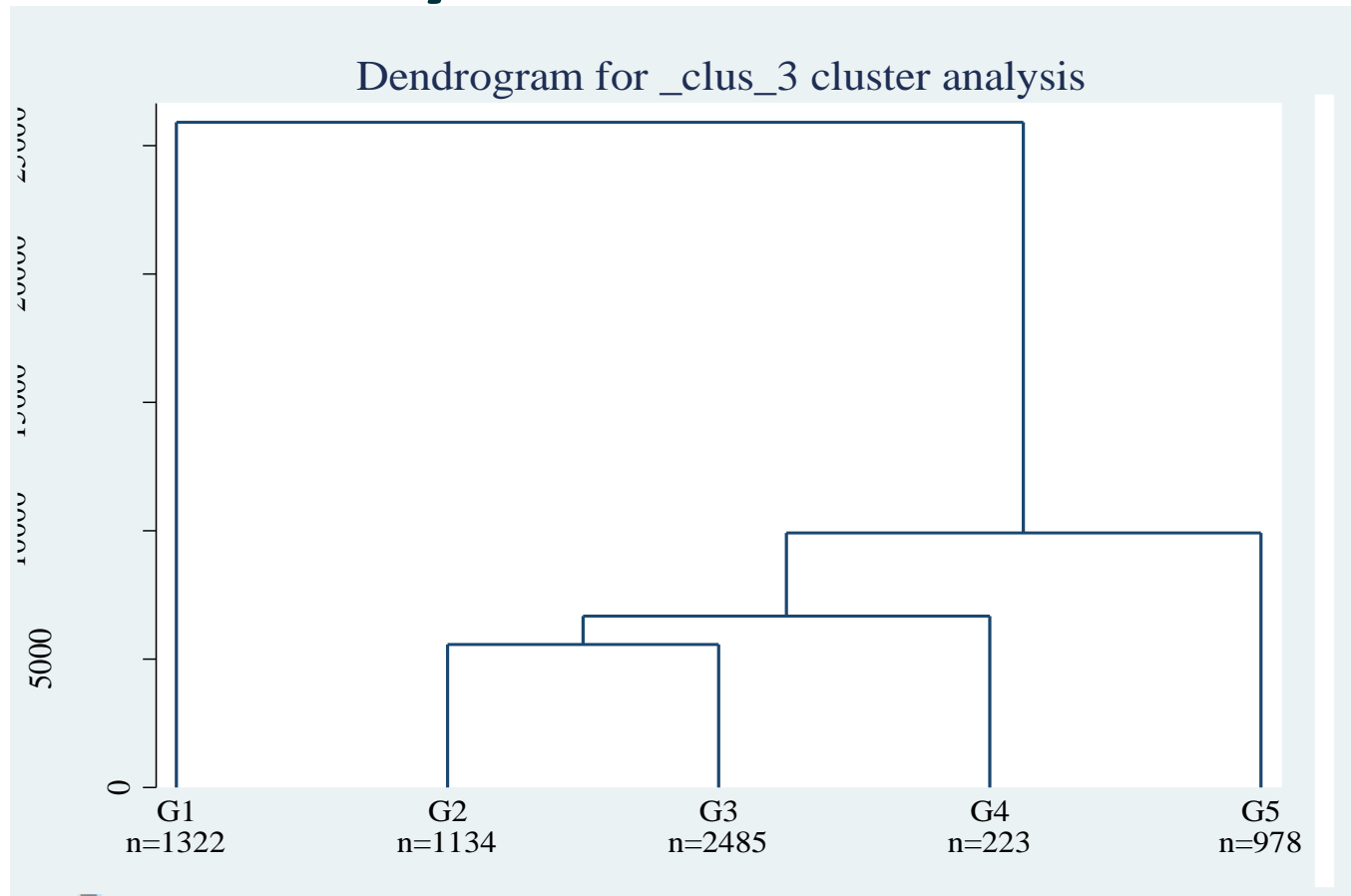
[HHs = Households]

L1: Defining variables (factors) for analysis

- Livelihood Strategies defined by activities...
 - Diversity in staples production index from 0 to 5 (2.8)
 - Diversity supplementary production index from 0 to 5 (2.5)
 - Diversity in cash crops index from 0 to 5 (1.5)
 - Fishery activity binary variable (0.04)
 - Collection activity index from 0 to 5 (1.95)
 - Non-ag employment binary variable (0.48)
 - Self-employment binary variable (0.37)
 - Food dependant on own production binary variable (0.38)
 - Remittances share of income Percentage share (17)
 - Household members involved in Ag production Percentage share (47)
 - Household share migrated Percentage share (12)
 - Stall feeding for cattle index from 0 to 6 (1.5)
 - Livestock binary variable (0.85)

L2: Principal component Analysis

L3: Cluster Analysis



Results

Variable	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	NOTES					
diversity~s	1322	0.95	1.41	0	5	1134	3.52	1.04	0	5	###	3.35	1.17	0	5	223	3.17	1.13	0	5	978	3.10	1.14	0	5	c1 has lowest diversity
diversity~pp	1322	0.78	1.41	0	5	1134	2.79	1.54	0	5	###	3.12	1.51	0	5	223	3.30	1.36	0	5	978	3.00	1.53	0	5	c1 has lowest diversity
diversity~op	1322	0.50	1.24	0	5	1134	2.65	1.80	0	5	###	1.52	1.83	0	5	223	2.18	2.06	0	5	978	1.47	1.75	0	5	c1 has lowest diversity
fishers_du~y	1322	0.01	0.10	0	1	1134	0.00	0.00	0	0	###	0.00	0.00	0	0	223	1.00	0.00	1	1	978	0.00	0.06	0	1	
index_coll~d	1322	1.13	0.97	0	5	1134	2.76	1.16	0	5	###	2.10	1.28	0	5	223	1.71	1.10	0	5	978	1.85	1.20	0	5	c1 has lowest diversity
nonag_empl~t	1322	0.51	0.50	0	1	1134	0.41	0.49	0	1	###	0.63	0.48	0	1	223	0.57	0.50	0	1	978	0.14	0.35	0	1	c3 is highest, also on livestock
self_emplo~t	1322	0.57	0.50	0	1	1134	0.94	0.24	0	1	###	0.11	0.31	0	1	223	0.29	0.45	0	1	978	0.16	0.36	0	1	c2 is max
food_self	1322	0.07	0.26	0	1	1134	0.32	0.47	0	1	###	0.50	0.50	0	1	223	0.61	0.49	0	1	978	0.51	0.50	0	1	c1 has least sufficiency
dependant~05	1322	0.20	0.23	0	1	1134	0.15	0.16	0	1	###	0.16	0.17	0	1	223	0.15	0.15	0	0.6	978	0.19	0.22	0	1	c1 has highest dependent ratio
remittances	1322	12.90	26.04	0	100	1134	9.55	18.60	0	100	###	6.55	16.58	0	100	223	9.62	22.95	0	100	978	60.02	30.30	0	100	
shareHHinAG	1322	0.21	0.26	0	1	1134	0.48	0.21	0	1	###	0.56	0.24	0	3	223	0.54	0.21	0.1	1	978	0.58	0.28	0	4	
share_migr~s	1322	0.09	0.19	0	2	1134	0.07	0.11	0	0.67	###	0.06	0.11	0	1	223	0.06	0.12	0	1	978	0.40	0.42	0	5	c1 has lowest stall feeding

What livelihoods show (in this case)

- C1: HH engaging less in agriculture
- C2: Highest rate of self-employment
- C3: Highest rate of non-ag employment
- C4: Fishery households and more self-consumption ag
- C5: Highest remittances (also migrants)

What does this mean for some socioeconomic indicators:

- Expenditure per capita: C1 & C5 > C3 > C2 > C4
- C2 more vulnerable to food security
- C4 with higher illiterate rates (at household level)

Determinants

- LS followed by HHs are constrained (determined) by long-term ones
 - Assets (specially land in rural areas)
 - Human capital
 - Geography and markets (access!)
 - Other man/cultural-generated constrains (gender, institutions, policies, etc.)
- Probit estimation for each single livelihood
- Parameters can change based on the design of livelihoods
 - Again the importance of a robust and coherent analysis
- For instance, agriculture factors, gender considerations, soils, altitude, etc.
- Most can be captured by ‘fixed effects’, but within particular conditions, households could tend to maximize profit given local knowledge and imperfect market signs

e.g. agricultural considerations

- Mountain areas (>2,500 m):
 - Barley, buckwheat and potato are the major crops
 - Livestock and Grazing important (21%)
- Hill areas (500 - 2,500 m):
 - Major cereals are paddy, wheat, maize and finger millet
 - Cash crops such as potatoes and vegetables are slowly replacing winter wheat
 - Some tropical fruits, citrus
 - Livestock and Grazing much less important (19%)
- Terai (<500 m):
 - Rice, high crop intensification (r, mustard & chickpeas or lentils / maize & l-c)
 - Livestock and Grazing much less important (10% / 80% crops)



Conclusions and Policy Implications

- Livelihoods quantitative analysis can have a great potential for policy advise and actions...
 - Determine factors affecting livelihoods strategies (LS)
 - Focused investment on areas dominated by a particular LS
 - Given limited resources, more efforts can be placed into vulnerable households within LS groups
 - Market information can be delivered more efficiently in areas dominated by LS with poor diversity of crops, for instance
 - ...

Thank you

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