Public Disclosure Authorized

Nepal SCD

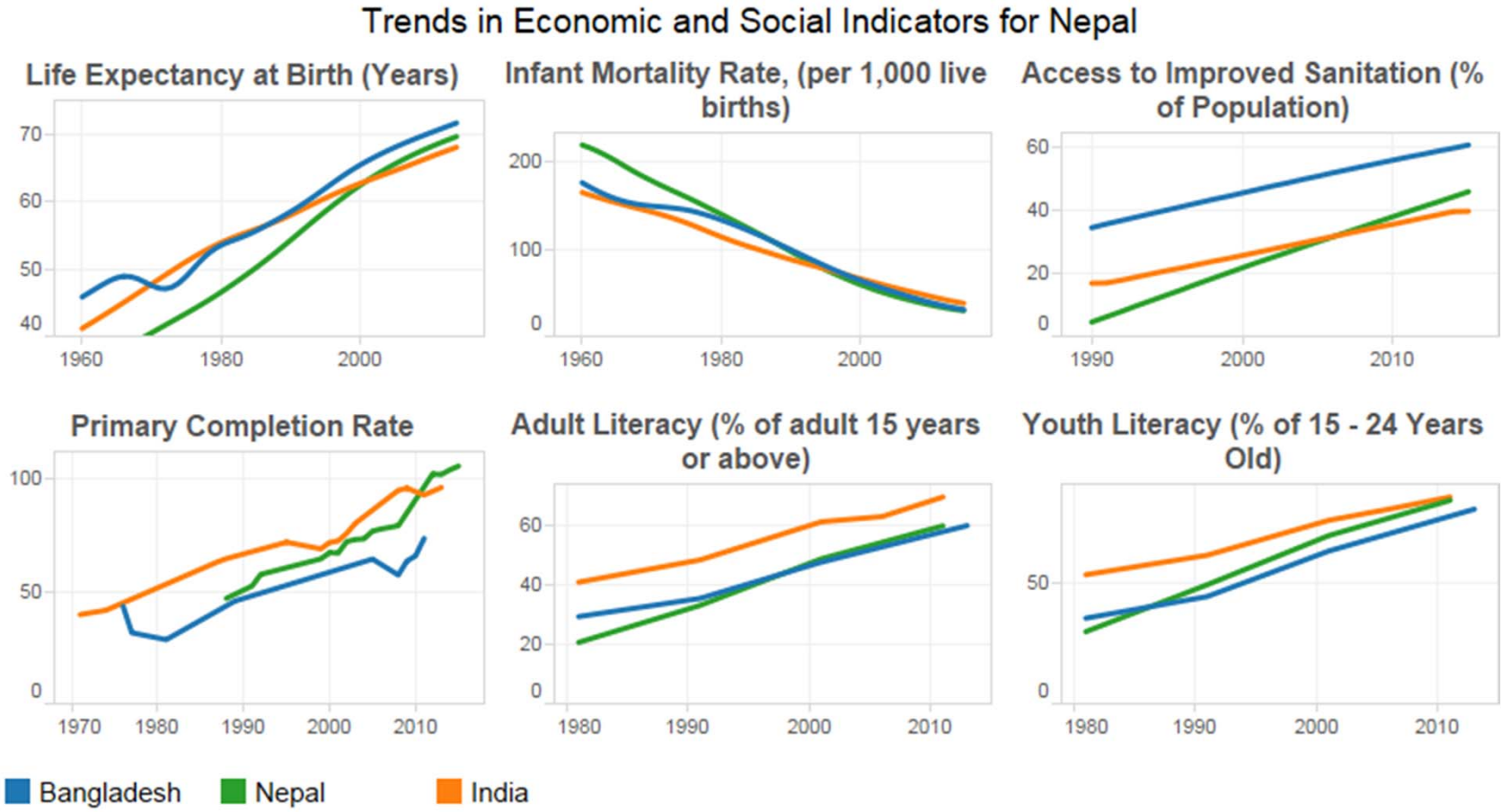
Supplemental Annex

In the last 20 years Nepal has secured impressive progress in reducing poverty

Survey Year	1995/96 Poverty Line	2010/11 Poverty Line	Official Poverty Estimate in 2010/11
	Poverty Headcount Rate (% of Population)		
1995-96	41.8%	63.8%	
2003-04	30.8%	49.4%	
2010-11	12.5%	30.8%	25.2%
Period	**Pace of Poverty Reduction (annual percentage point change)**		
95/96 - 03/04	1.36%	1.80%	
03/04 - 10/11	2.62%	2.66%	
95/96 – 10/11	1.96%	2.20%	

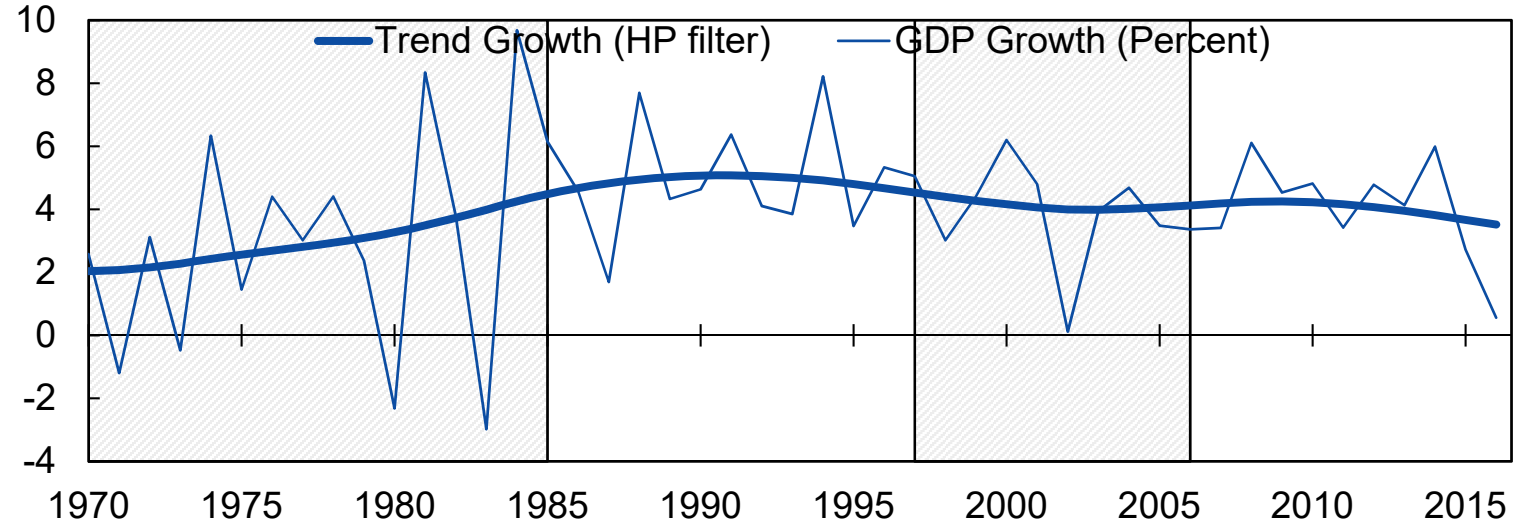
Source: World Bank. 2016. Moving up the Ladder: Poverty Reduction and Social Mobility in Nepal. World Bank, Washington DC

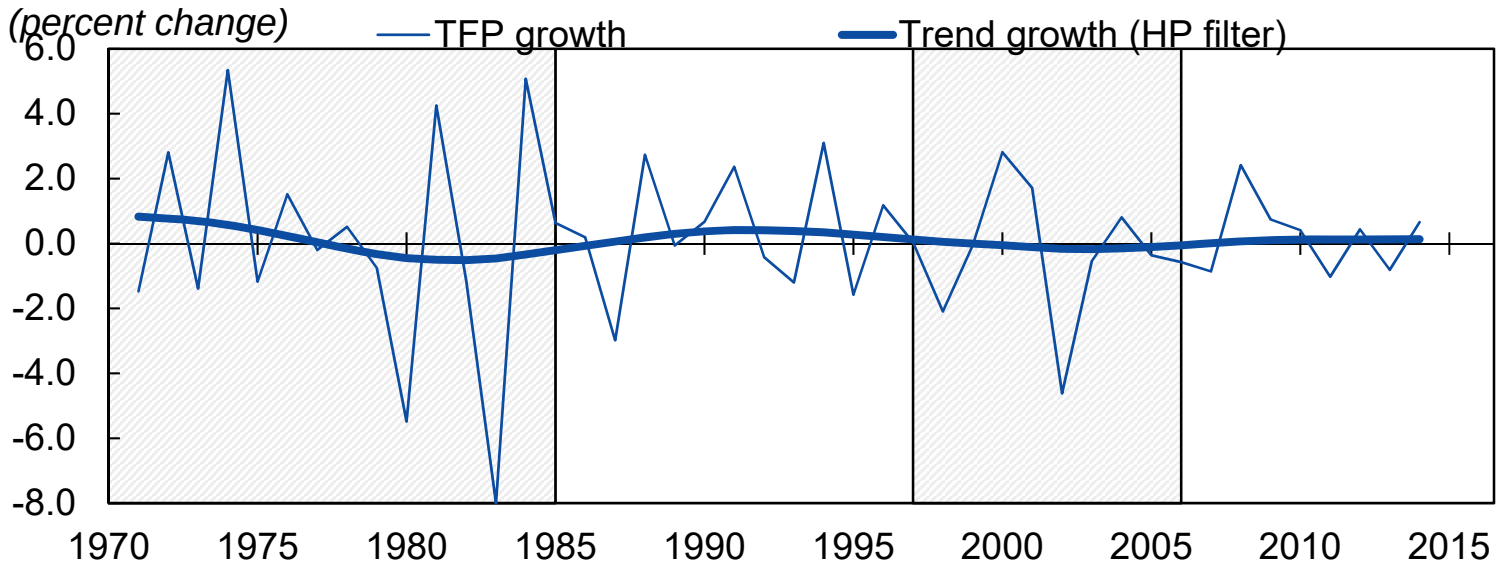
Nepal has also made impressive gains in education and health, and on many measures, performs relatively well compared to structural peers.



Source: World Development Indicators (World Bank, 2016).

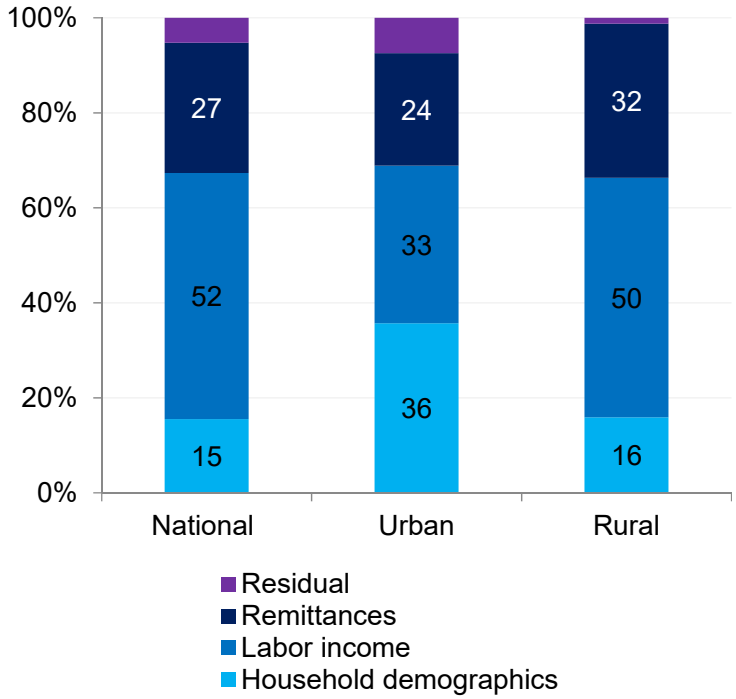
This has been achieved despite low growth and almost no productivity growth during the last 20 years





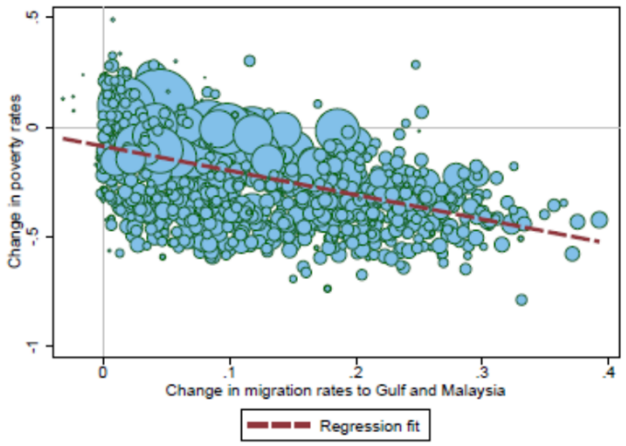
Remittances directly account for 27% of all poverty reduction from 1996 to 2011, and high rates of migration also had indirect impacts on poverty

Drivers of poverty reduction 1996-2011



Source: World Bank. 2016. Moving up the Ladder: Poverty Reduction and Social Mobility in Nepal. World Bank, Washington DC

Impact of migration on poverty, 2001-2011



An increase in the migration rate of 10 percent reduce the village poverty rate by 7 percentage points. This estimate suggests that migration rates to Gulf-Malaysia explains 40 percent of the actual decline in poverty between 2001 and 2011.

Shrestha, M. 2017. The impact of large-scale migration on poverty, expenditures, and labor market outcomes in Nepal. Mimeo, World Bank.

Indirect impact of migration: an increase in village migration by 10 percentage points increases wages by 25 percent, largely driven by increase in agricultural wages and non-farm wages for women

	Log(wage) (1)	Log(agric wage) (2)	Log(non-agric wage) (3)	Log(casual wage) (4)
Working age (15-64)				
Gulf-Malaysia migration rate	2.338**	4.073***	2.025*	2.297**
	(0.961)	(1.375)	(1.085)	(1.005)
First-stage F-stat	308.61	119.94	363.79	175.11
Observations	5316	1729	3992	3077
Male sub-sample				
Gulf-Malaysia migration rate	1.671*	3.492**	1.258	1.547
	(1.011)	(1.713)	(1.091)	(1.109)
First-stage F-stat	307.97	88.87	327.50	164.83
Observations	3297	723	2880	1738
Female sub-sample				
Gulf-Malaysia migration rate	3.879***	4.426***	3.978	3.537***
	(1.496)	(1.469)	(2.600)	(1.170)
First-stage F-stat	251.92	123.41	274.20	159.28
Observations	2019	1006	1112	1339

Source: Author's estimates using the NLSS-III data.
Note: This table shows the impact of village migration rates on wages. Reported coefficients are the estimates of β from Equation (1). The column headings indicate the outcome variables. Dependent variable is the migration rates in the village in 2011, and is instrumented with the village level migration rates to Gulf-Malaysia in 2001. Standard errors, clustered at the ward level, are reported in parentheses. $^{***}: p < 0.01$; $^{**}: p < 0.05$; $^{*}: p < 0.1$

Shrestha, M. 2017. The impact of large-scale migration on poverty, expenditures, and labor market outcomes in Nepal

Indirect impact of migration: migration reduced labor force participation (LFP), estimates vary but suggest that LFP of remaining members of households with migrants fell

Higher village migration rates increase LFP among households with migrant members, but the impact is weaker than for households without migrants.

	LFP	Agric-ulture	Participation in non-agriculture			emplo-yer
			All	Wage	self	
	(1)	(2)	(3)	(4)	(5)	(6)
Working age (15-64)						
Village migration rate						
x migrant in HH	0.192**	0.400***	-0.207***	-0.126**	-0.081**	0.076**
	(0.095)	(0.087)	(0.075)	(0.058)	(0.032)	(0.039)
x no migrant in HH	0.353***	0.112	0.241***	0.144***	0.097***	0.134***
	(0.085)	(0.100)	(0.065)	(0.053)	(0.028)	(0.043)
Observations	3881384	3881384	3881384	3881384	3881384	2270376
Adj R-squared	0.053	0.199	0.087	0.054	0.036	0.024
Male sub-sample						
Village migration rate						
x migrant in HH	-0.060	0.641***	-0.701***	-0.532***	-0.168***	0.117***
	(0.095)	(0.101)	(0.115)	(0.097)	(0.047)	(0.043)
x no migrant in HH	0.443***	0.369***	0.074	0.010	0.065	0.162***
	(0.068)	(0.113)	(0.104)	(0.086)	(0.043)	(0.046)
Observations	1847306	1847306	1847306	1847306	1847306	1344491
Adj R-squared	0.028	0.194	0.134	0.075	0.054	0.022
Female sub-sample						
Village migration rate						
x migrant in HH	0.138	0.079	0.059	0.113***	-0.055**	0.089**
	(0.117)	(0.109)	(0.049)	(0.038)	(0.026)	(0.044)
x no migrant in HH	0.214*	-0.110	0.323***	0.221***	0.102***	0.134***
	(0.129)	(0.120)	(0.052)	(0.041)	(0.024)	(0.050)
Observations	2034078	2034078	2034078	2034078	2034078	925885
Adj R-squared	0.160	0.249	0.057	0.042	0.025	0.035

Source: Author's estimates using the Census 2001 and 2011 data.
Note: This table shows the impact of village migration rates on labor force participation for the working age population (15-64) from households with and without a current migrant. Reported coefficients are the estimates of β from Equation (2). The column headings indicate the participation in various types of activities. Dependent variable is the migration rates in the village. Standard errors, clustered at the village level, are reported in parentheses. *** : $p < 0.01$; ** : $p < 0.05$; * : $p < 0.1$

Shrestha, M. 2017. The impact of large-scale migration on poverty, expenditures, and labor market outcomes in Nepal

Wage employment falls, self-employment increases, hours supplied fall, among households with migrants. (Another study also documents similar results, Lokshin and Glinskaya, WBER 2009)

	Wage Employment		Self Employment	
	(1) Low Skilled	(2) High Skilled	(3) Low Skilled	(4) High Skilled
Panel A: Labor market participation				
Household with migrant	-0.205**	-0.486	0.199***	0.324
	(0.098)	(0.305)	(0.069)	(0.346)
Observations	14054	2825	14054	2825
Wald χ^2	3577.578	997.890	3864.717	2175.469
F-test 1stage	68.765	8.179	68.765	8.179
Coefficient 1stage	1.925***	1.460***	1.925***	1.460***
Panel B: Hours supply				
Household with migrant	-15.028***	1.032	-13.064***	5.048
	(5.754)	(11.830)	(4.454)	(14.563)
Observations	4714	1131	10319	1199
Wald χ^2	2170.635	505.787	1130.111	1815.099
F-test 1stage	33.235	7.061	63.906	6.082
Coefficient 1stage	1.820***	1.665***	1.921***	1.503**
Controls				
Individual characteristics	X	X	X	X
Household characteristics	X	X	X	X
VDC characteristics	X	X	X	X
Region Fixed Effect	X	X	X	X

Note 1: 2SLS estimates are reported in the table. Instrument used for 2SLS is share of international migrants in a VDC in 2001 (IV1). Sample is working age (18 to 60) adults and standard errors are clustered at VDC level. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Individual controls are age age^2, years of education, gender, household head identifier, and marital status. Household controls are female HH head, share of male and female adults, share of elderly, share of children, amount of land-owned, house ownership and social caste. Similarly VDC level controls are, unemployment rate, poverty rate, illiteracy rate, inequality (Gini), and urban/rural location. Regions are Kathmandu, other urban areas, Western hills, Eastern hills, Western Terai, and Eastern Terai. Coefficient 1stage is the estimated coefficient on the exogenous instrument in the first-stage.
Note 2: Sample in Panel B is conditioned on being employed in that particular sector. Log of hourly wage is added as an extra individual control for column (1) and (2).
Note 3: High skilled adults are defined as adults with 11 years or more of education.

Phadera, L. 2016. International Migration and its Effect on Labor Supply of the Left-Behind Household Members: Evidence from Nepal

Indirect impact of migration: remittances enabled increased investments in health and education, particularly female education

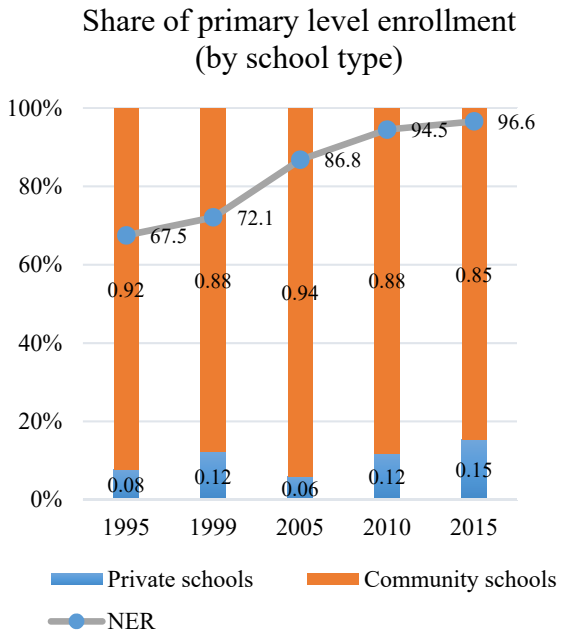
	Currently attends school			Completed years of schooling		
	All	Rural	Urban	All	Rural	Urban
	(1)	(2)	(3)	(4)	(5)	(6)
Children aged (5-14)						
has Gulf-Malaysia migrant	0.422**	0.377**	0.539*	1.072	0.762	2.032
	(0.168)	(0.190)	(0.322)	(0.811)	(0.907)	(2.042)
First-stage F-stat	14.72	10.69	3.90	14.72	10.69	3.90
Observations	7194	5322	1872	7194	5322	1872
Male children aged (5-14)						
has Gulf-Malaysia migrant	0.128	0.060	1.482	0.135	0.116	-1.020
	(0.138)	(0.134)	(2.055)	(0.846)	(0.830)	(7.371)
First-stage F-stat	14.40	14.58	0.65	14.40	14.58	0.65
Observations	3558	2626	932	3558	2626	932
Female children aged (5-14)						
has Gulf-Malaysia migrant	0.866***	1.131*	0.354*	2.614*	2.377	2.898*
	(0.324)	(0.611)	(0.188)	(1.526)	(2.415)	(1.683)
First-stage F-stat	7.53	3.47	5.59	7.53	3.47	5.59
Observations	3636	2696	940	3636	2696	940

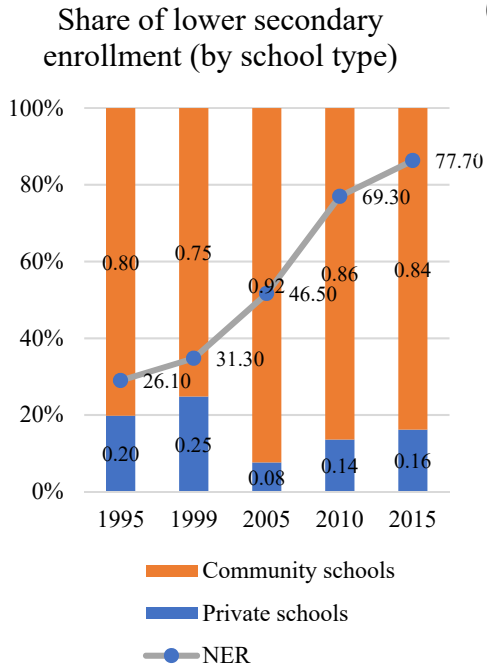
Source: Author's estimates using the NLSS-III data.
Note: This table shows the impact of household migration on educational outcomes of children aged 5-14. Reported coefficients are the estimates of β from Equation (1). The column headings indicate the outcome variables and sample restriction. Dependent variable is an indicator of whether the household has a migrant in Gulf-Malaysia, and is instrumented with the village level migration rates to Gulf-Malaysia in 2001. Standard errors, clustered at the ward level, are reported in parentheses. *** : $p < 0.01$; ** : $p < 0.05$; * : $p < 0.1$

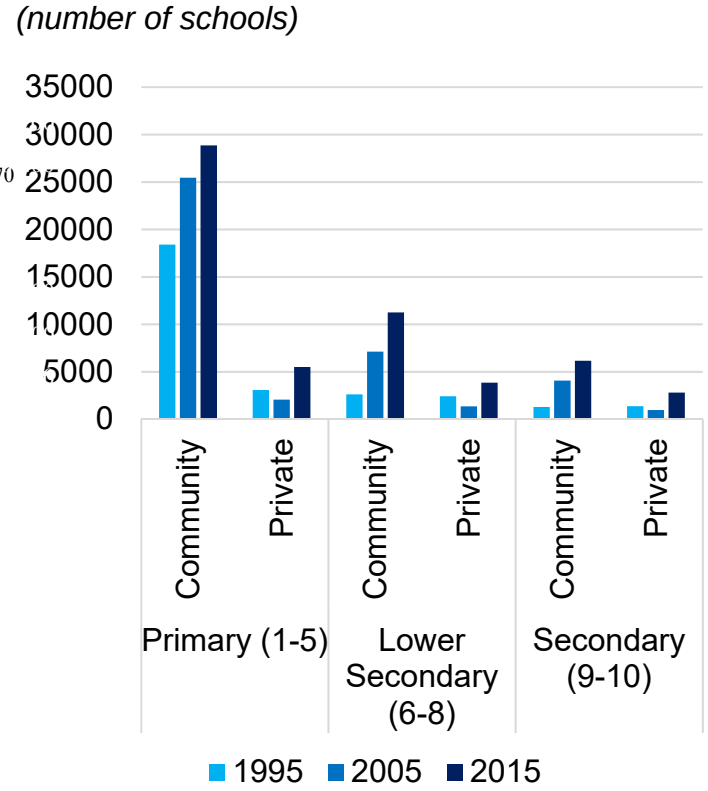
Shrestha, M. 2017. The impact of large-scale migration on poverty, expenditures, and labor market outcomes in Nepal

Other factors also contributed to Nepal's progress: progress on health and education was aided by an increase in community and private schools

85% of primary and lower secondary enrollment is in community schools and the number of community schools has increased rapidly to keep up with increasing enrollment rates.

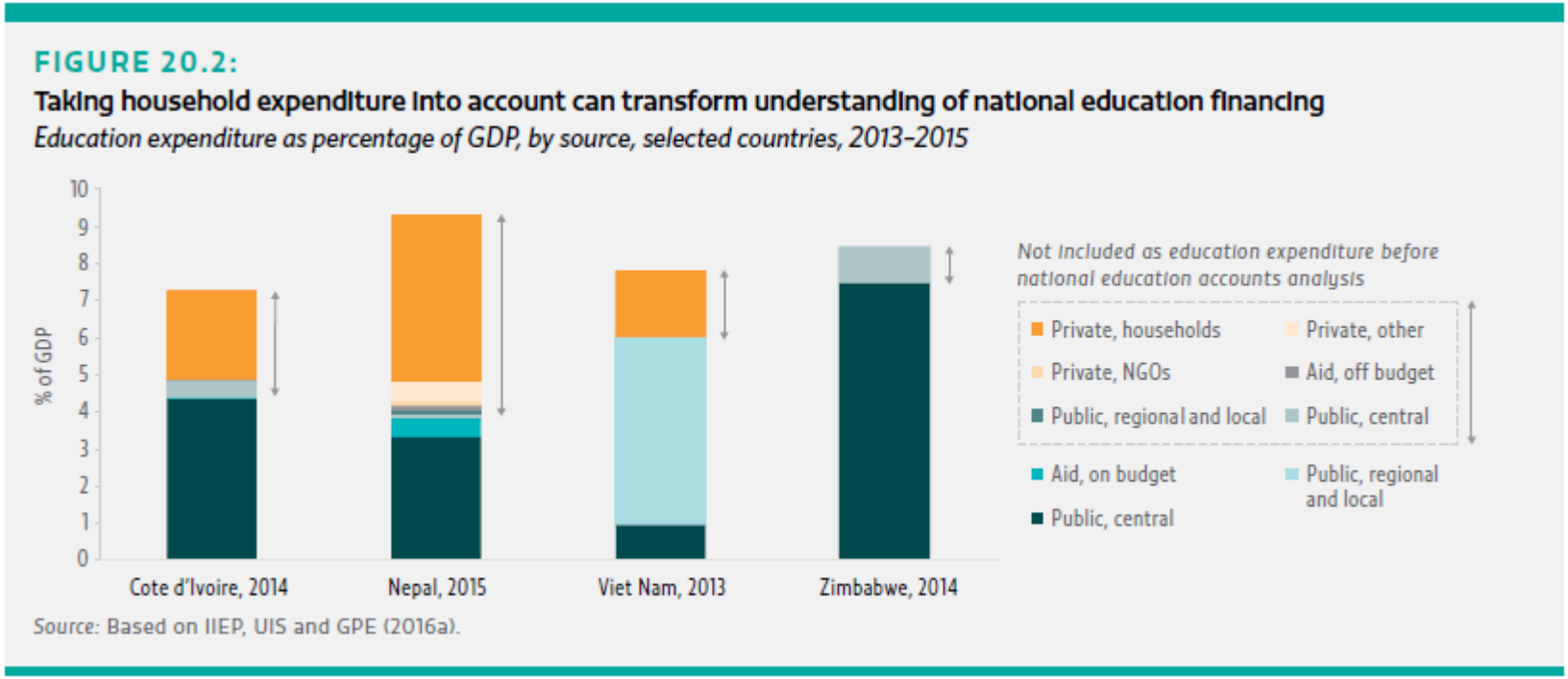






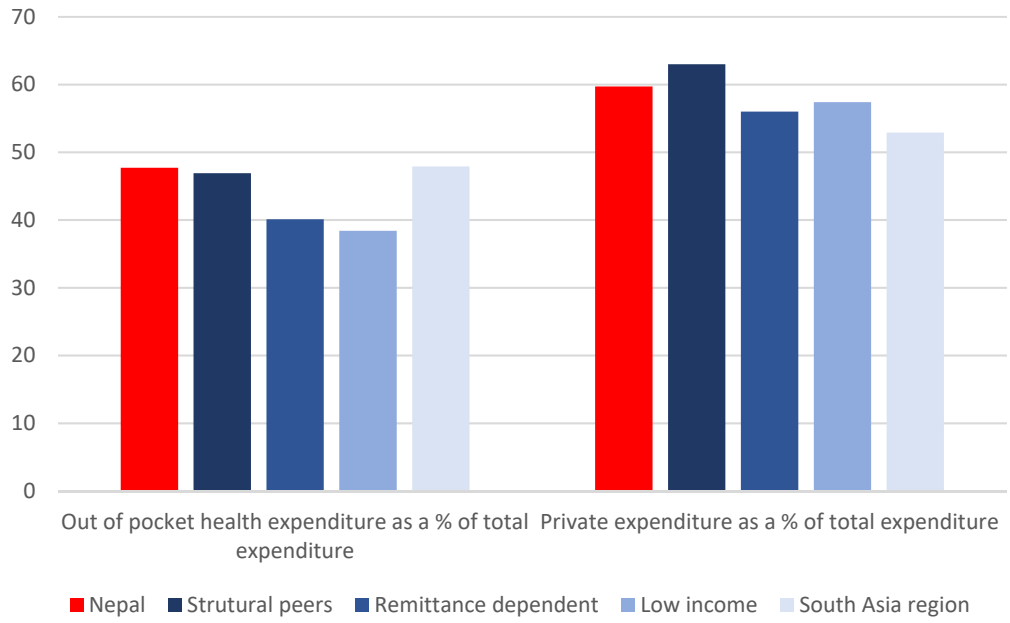
Sources: Educational Statistics of Nepal (1995), School Level Educational Statistics of Nepal (2005), Flash Reports (2010, 2015), Ministry of Education, Department of Education

And increased private spending: private expenditure accounts for 55 percent of total expenditure in education … making private contributions to education some of the highest in the world



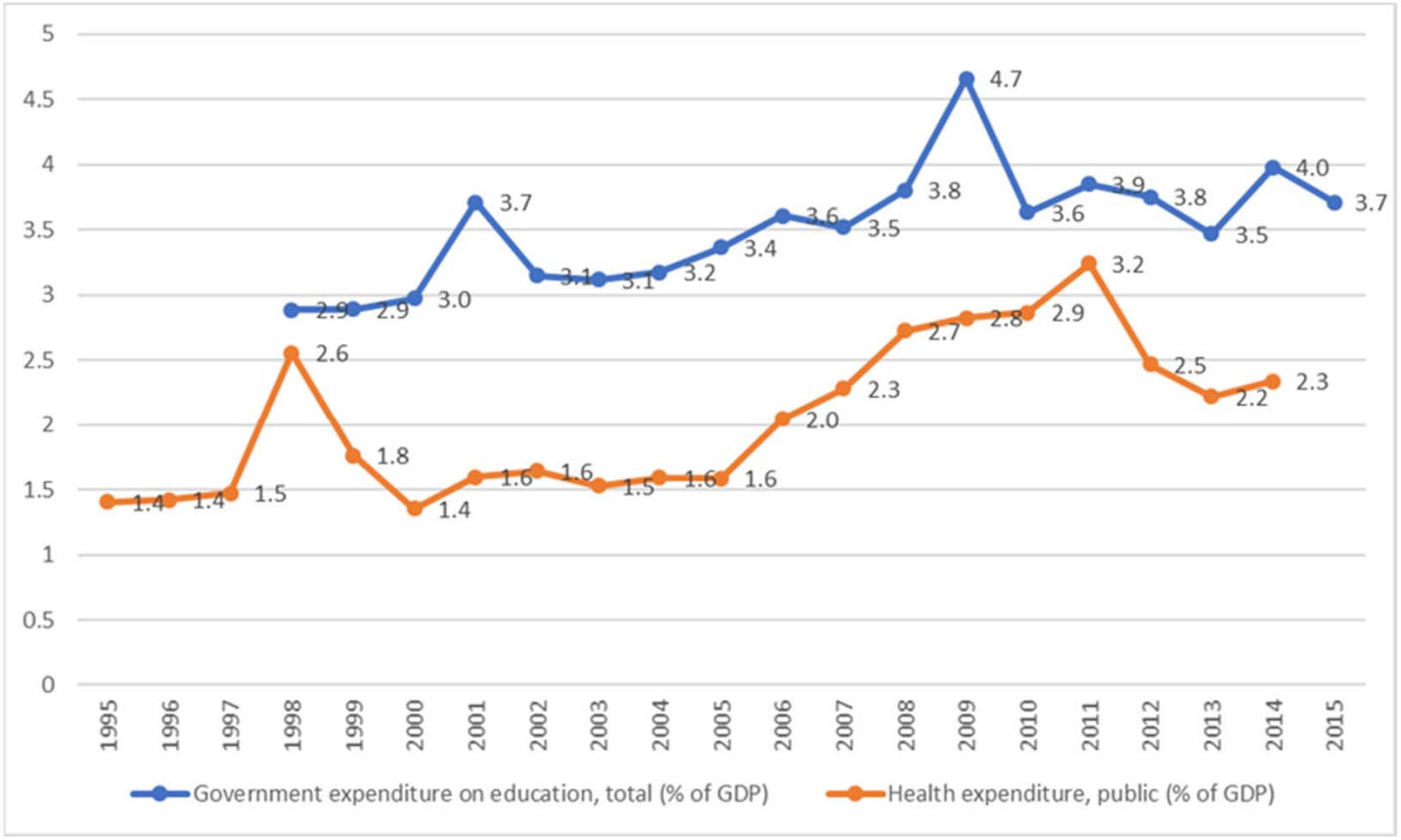
Source: UNESCO. 2016. Global Education Monitoring Report

Private expenditure also accounts for 60 percent of total expenditure in health … making private contributions to health some of the highest in the world



Source: Find My Friends using the Health Nutrition and Population Statistics

Although the share of public spending on health and education is low, public spending was maintained during a decade of conflict and increased post-2006



Higher public spending on education and health allowed the government to remove user fees which substantially increased access to basic services

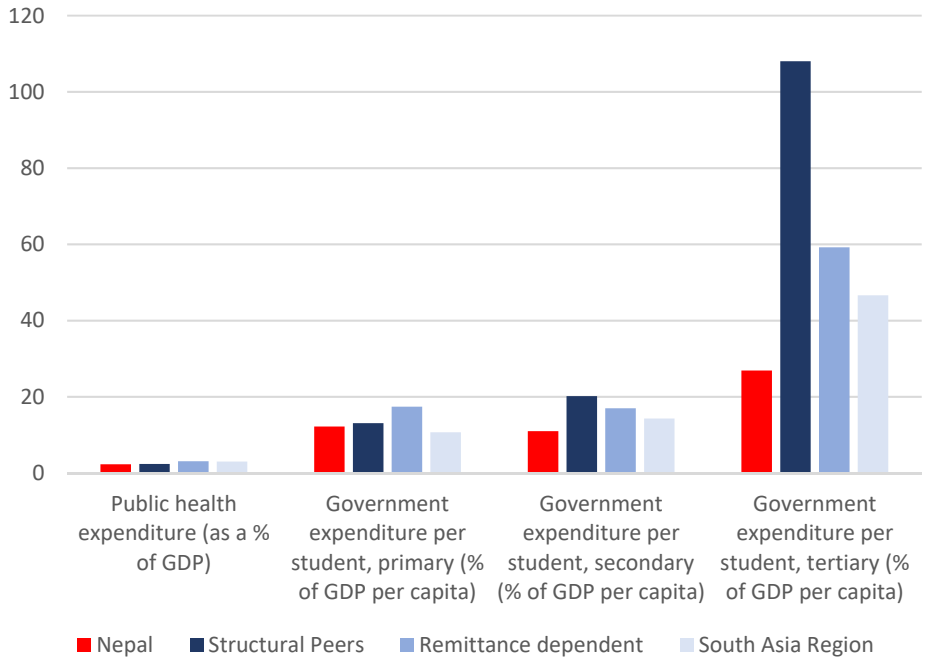
Sophie Witter Sunil Khadka Hom Nath Suresh Tiwari. The national free delivery policy in Nepal: early evidence of its effects on health facilities. Health Policy and Planning, Volume 26, Issue suppl_2, 1 November 2011, Pages 84–91

Table 1 Increase in deliveries (%), by type and level, comparing 10 months before with 10 months after Aama

	% increase in normal deliveries (mean increase in numbers per facility)	% increase in complicated deliveries (mean increase in numbers per facility)	% increase in caesarean sections (mean increase in numbers per facility)	% increase in total deliveries (mean increase in numbers per facility)	Facilities and notes
Central level	20% (2251)	2.3% (45)	19% (477)	18% (2773)	Maternity Hospital
Regional level	18% (768)	42% (130)	−11% (−158)	12% (740)	Western Regional Hospital
Zonal level	14% (422)	20% (65)	30% (231)	18% (717)	Koshi, Lumbini and Seti Zonal Hospitals
District level	35% (122)	30% (9)	271% (10)	37% (140)	Jumla, Sarlahi, Nawalparasi, Udaypur (some facilities had no caesarean sections in both periods and other facilities had to stop during the later months of the study period due to lack of human resources)
Mission hospital	125% (330)	185% (89)	132% (62)	134% (481)	Team Hospital Dadeldhura
Primary health care centre (PHCC)	11% (17)	61% (4)	n.a.	12% (20)	6 primary health care centres
Health post	18% (16)	Initiated by some facilities	n.a.	24% (21)	5 different health posts; 2 health posts have started handling complications after SBAs joined the facility

Source: health facility registers.
n.a. = not applicable.
SBA = Skilled Birth Attendant.

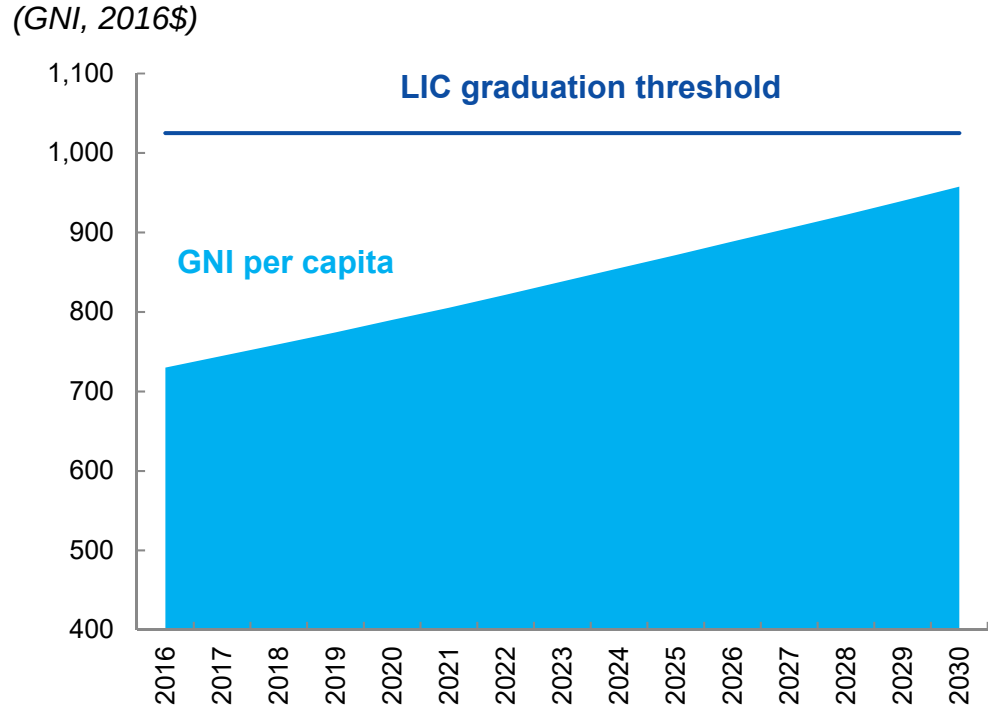
Although public spending on education and health increased, government spending on health and education remains below peers



WDI Indicators using find my friends

Despite welfare gains, there is an urgent need to change Nepal's development model: Growth opportunities are being missed resulting in slow growth

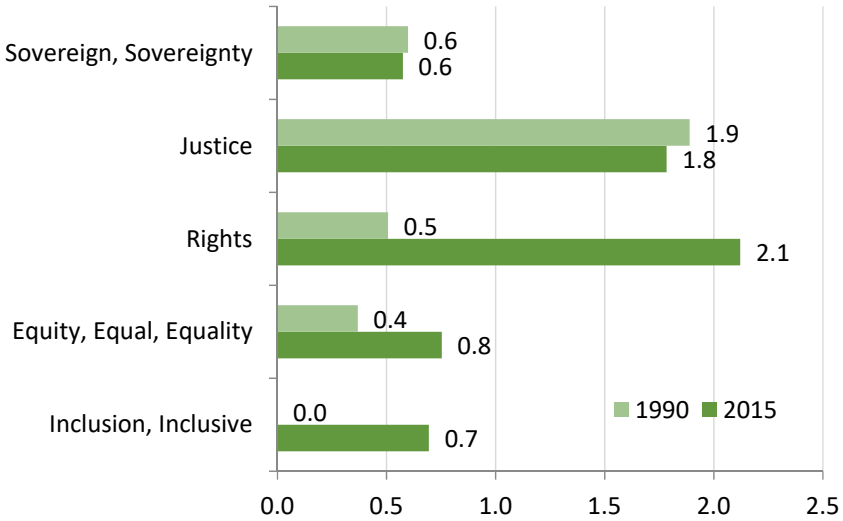
Business as usual would result in the trend rate of growth slowing to an average 3 percent per year from 2017 to 2030



Source: World Bank. 2017. CEM

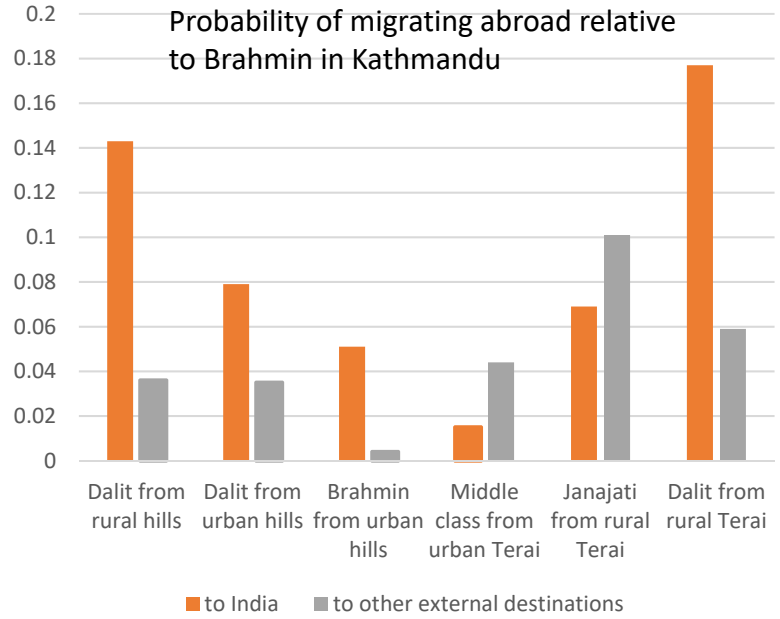
Inequities that underpin fragility have not yet been addressed

Rights, equity and inclusion dominate the constitution in 2015 much more than in 1990 highlighting the importance of this agenda in Nepal today



Source: World Bank. 2016. Moving up the Ladder: Poverty Reduction and Social Mobility in Nepal. World Bank, Washington DC

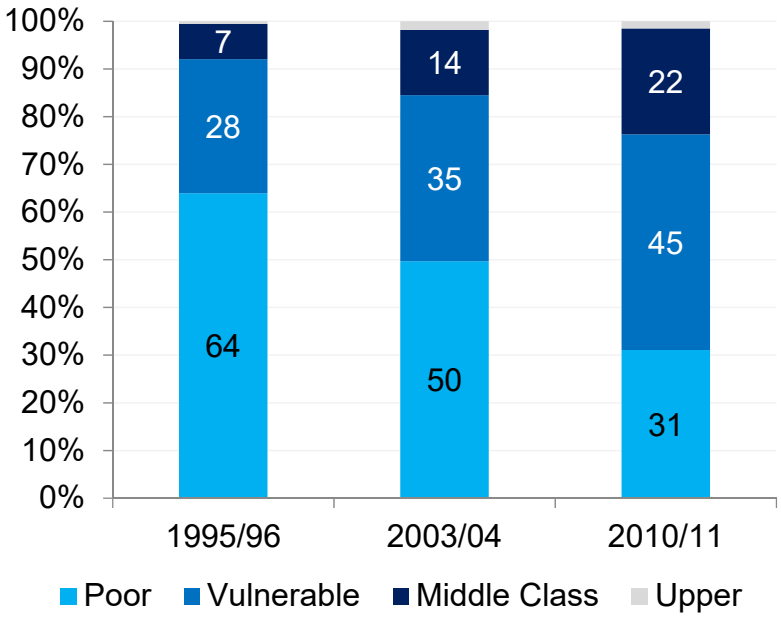
Rates of international migration are higher for groups that are less favored in the domestic job market (such as Janajati and Muslims)



Source: Raju, D. and J. Rajbhandhary, eds. Forthcoming. “Youth labor in Nepal”. World Bank, Washington D.C.

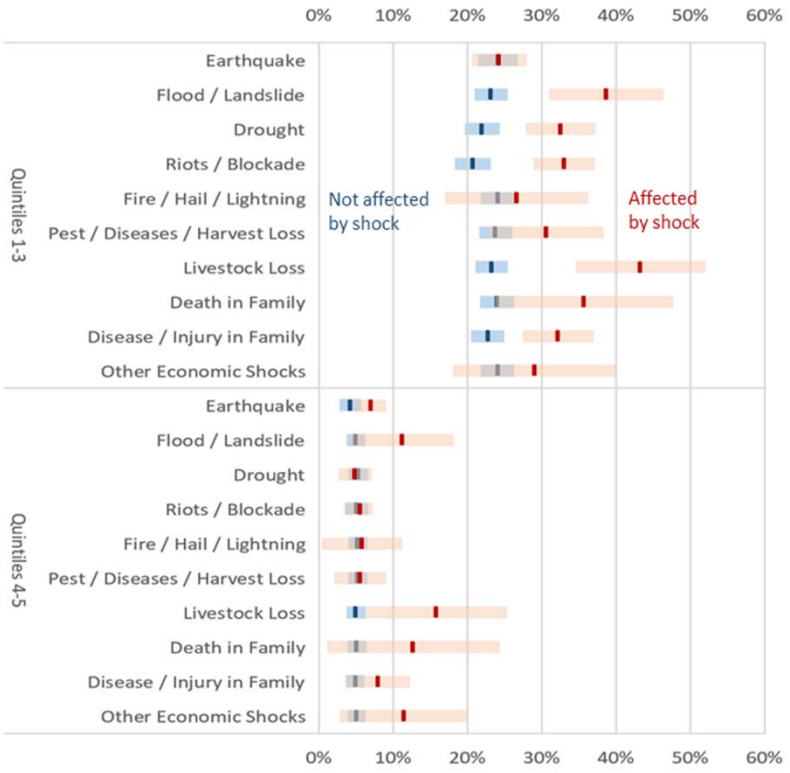
Welfare gains are vulnerable to natural disasters and other uninsured risks

45% of Nepali are vulnerable to becoming poor.



Source: World Bank. 2016. Moving up the Ladder: Poverty Reduction and Social Mobility in Nepal. World Bank, Washington DC

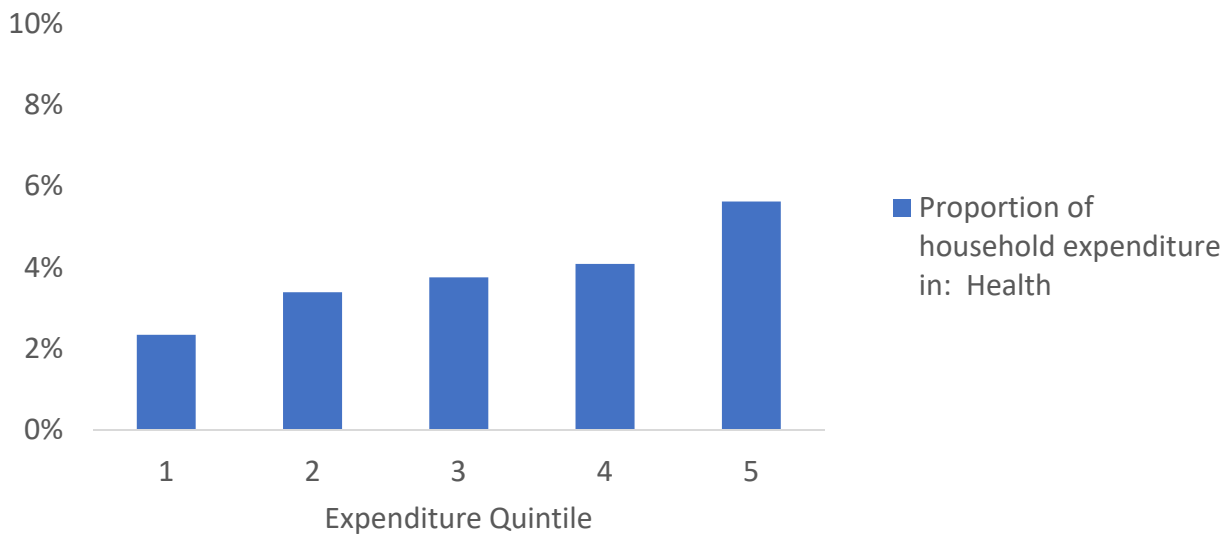
Impact of Shocks on Food Insecurity, Non-metropolitan Nepal, 2016



Source: Walker, Khadka and Pandey, 2017. "Risk and Vulnerability in Nepal" using the Nepal Household Risk and Vulnerability Survey 2016.
Notes: Light-colored bands show 95% confidence interval for share of food insecure households among those reporting/not reporting the given shock between 2014 and 2016. Sample frame excludes metropolitan areas as defined in 2010

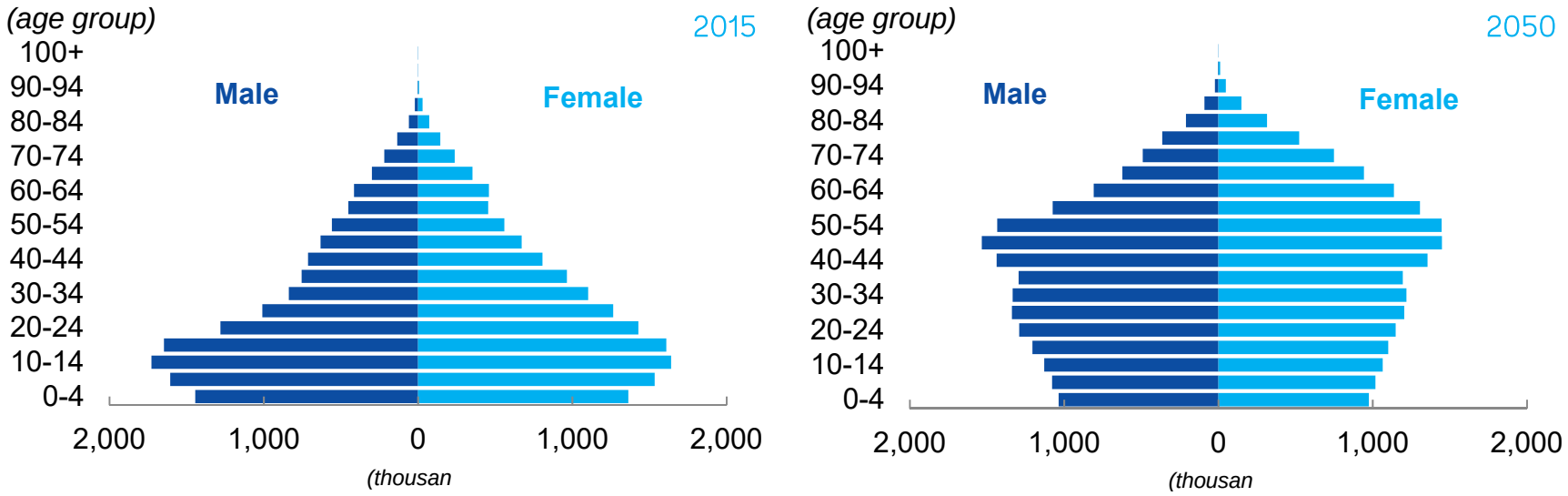
Welfare gains are vulnerable to natural disasters and other uninsured risks (2)

Out of pocket spending on health care comprises 3-4% of expenditure of those just above the poverty line, pushing many into poverty



Source: Jacoby, H. 2017. Analysis for Nepal SCD using the 2016 Household Risk and Vulnerability Survey

There are also opportunities and risks arising from the demographic transition that Nepal is undergoing

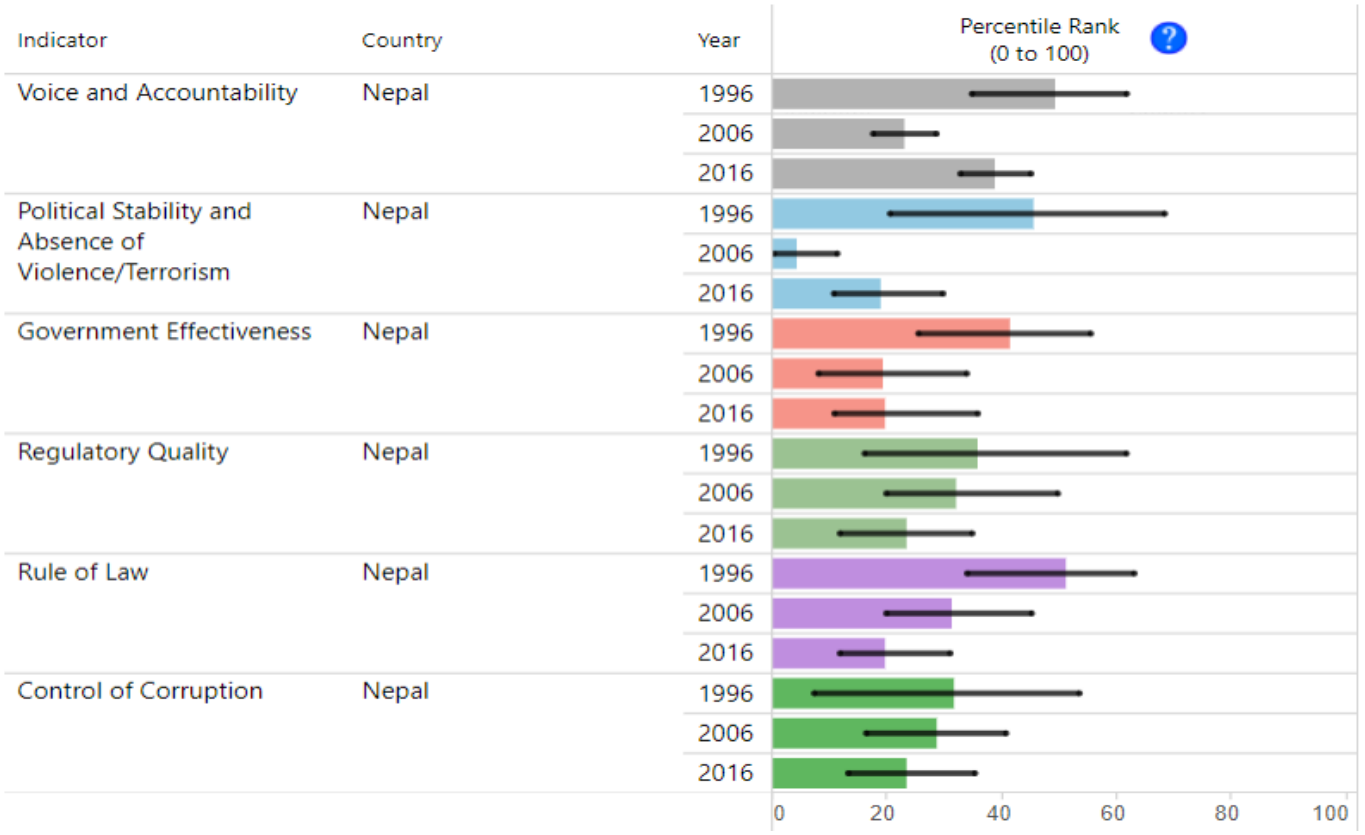


Source: World Bank. 2017. CEM

Part B: Elements of a new approach

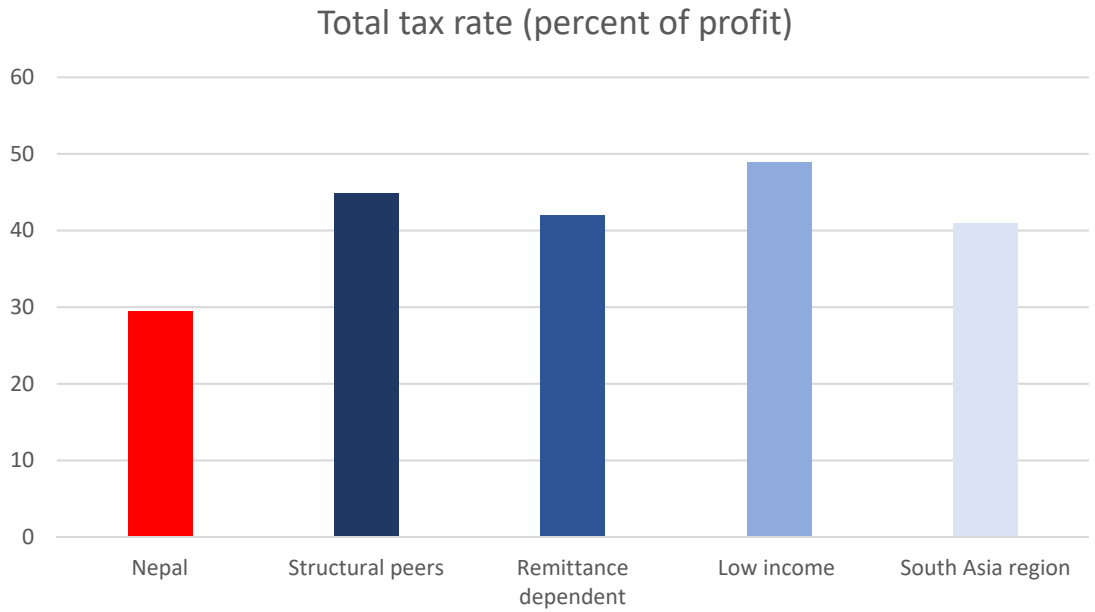
1. Encouraging political inclusion, reducing institutional capture, and eliminating clientelism.
2. Promoting private sector investment to create more and better jobs.
3. Harnessing the potential of natural resources.
4. Ensuring all Nepalese are equally able to invest in and use human capital.
5. Increasing resilience to natural disasters and health shocks.
6. Getting more from migration.

Governance has deteriorated in Nepal



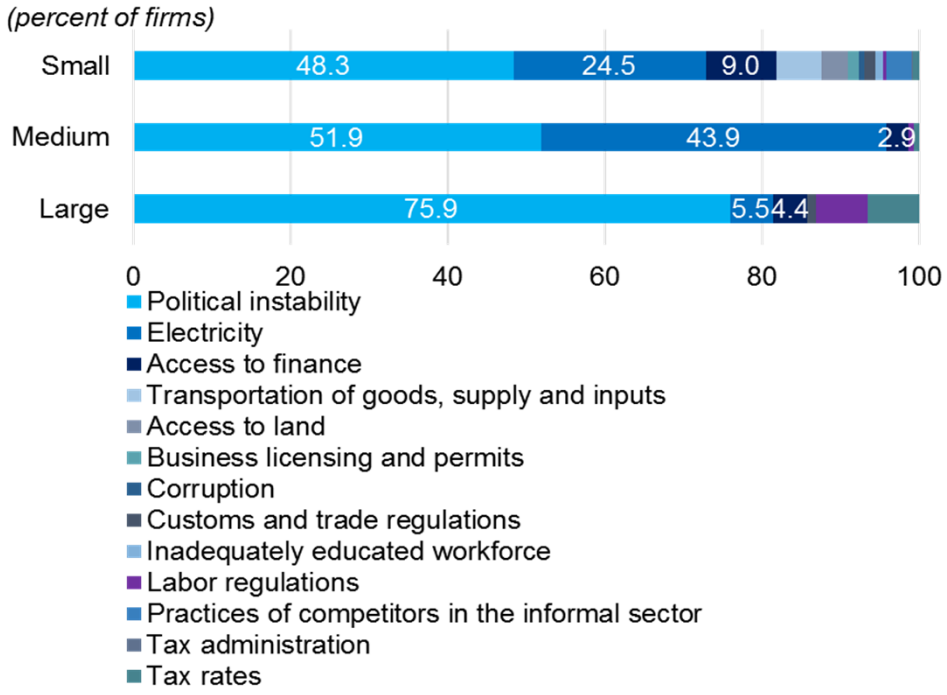
Source: World Governance Indicators

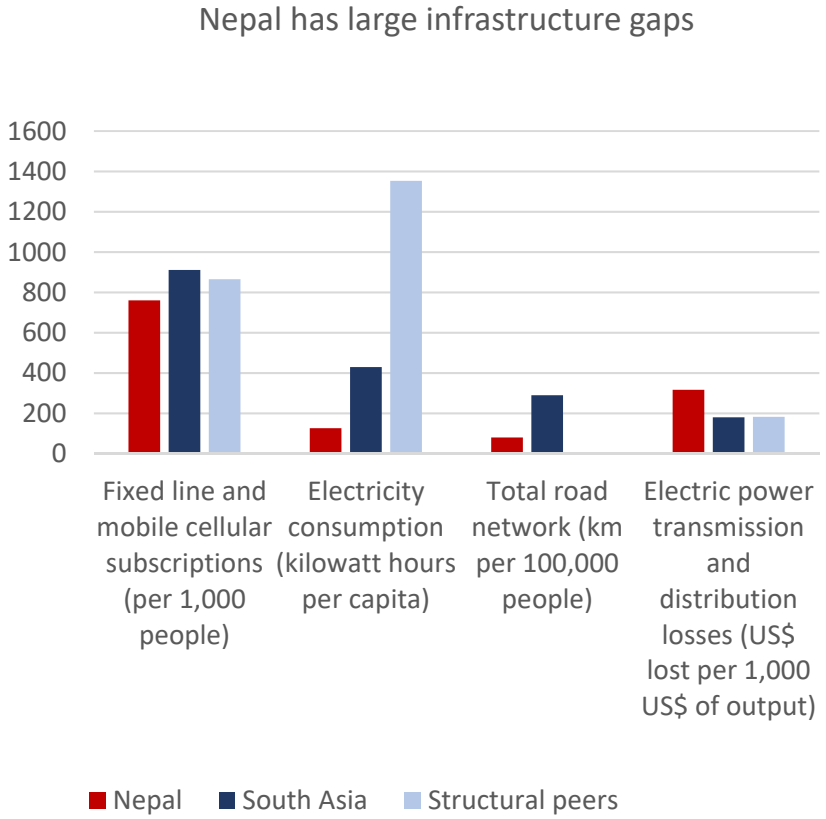
Firms in Nepal have lower rates of taxation than regional and structural peers



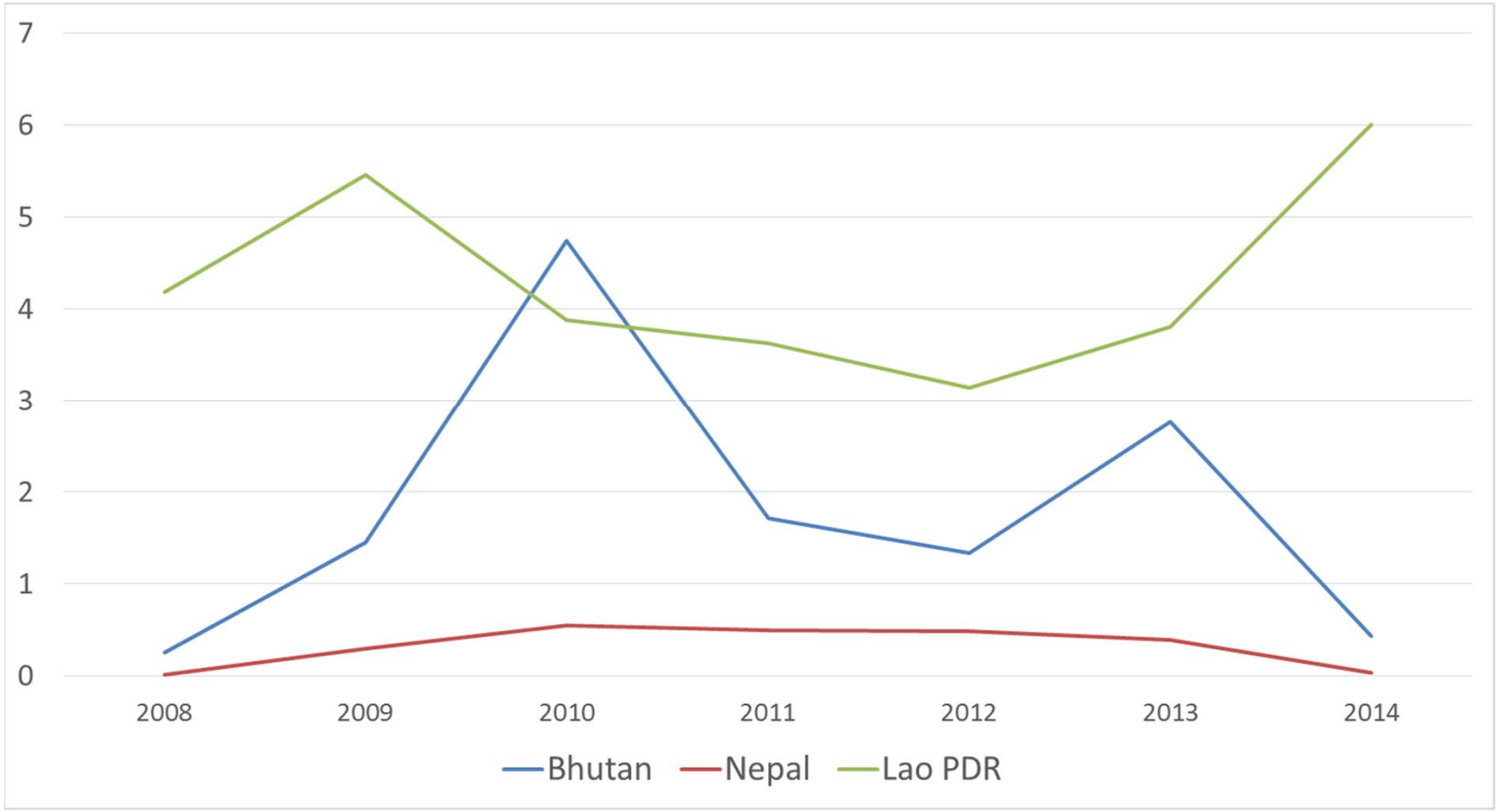
Source: Find my friends

Political instability and lack of infrastructure are major constraints to firm growth and job creation





FDI is low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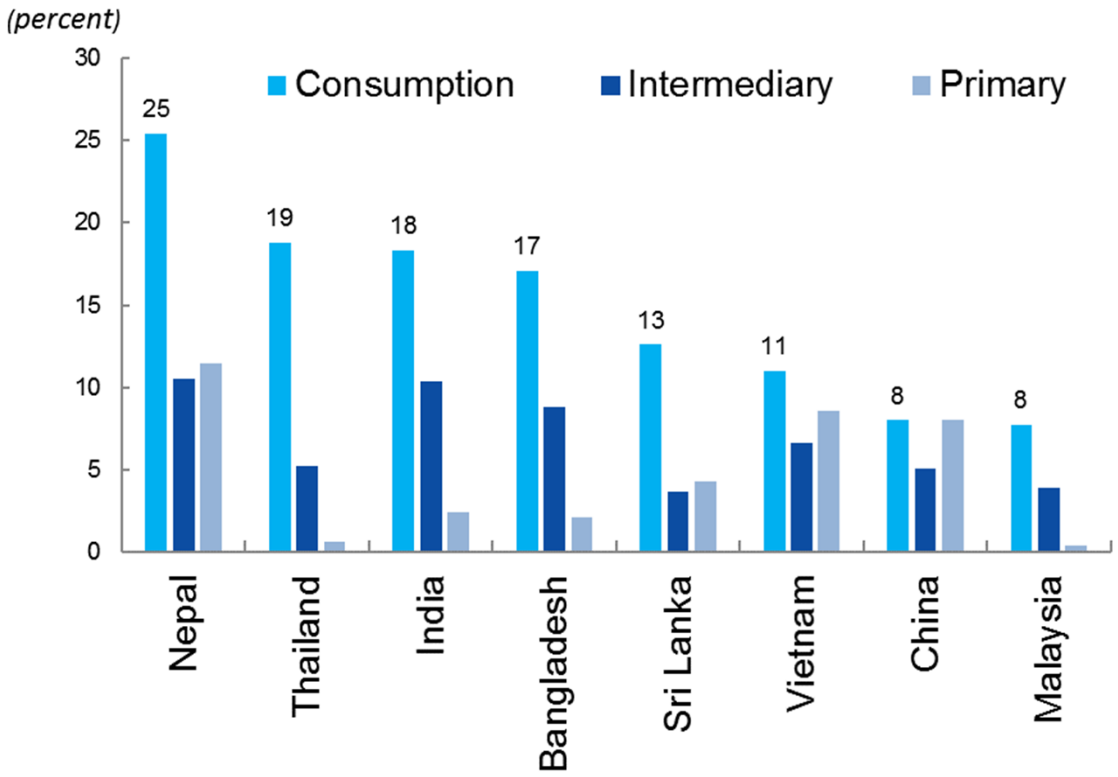
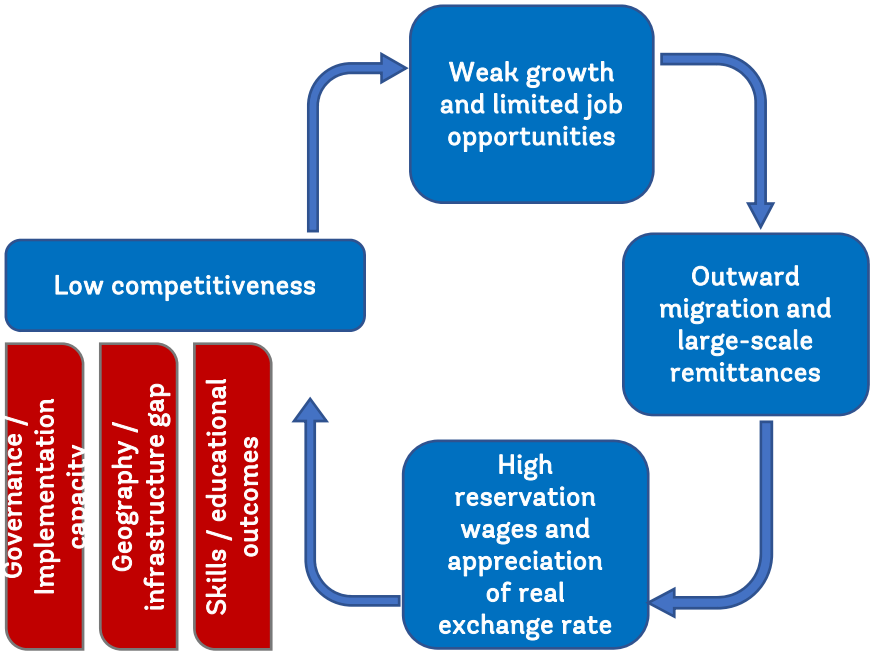
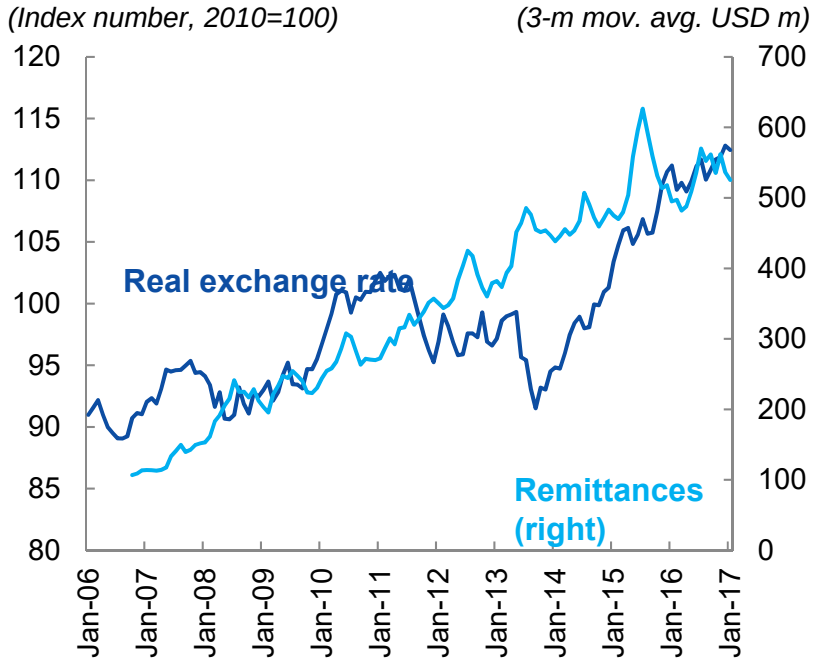
Tariffs are high



Source: World Bank. 2017. CEM

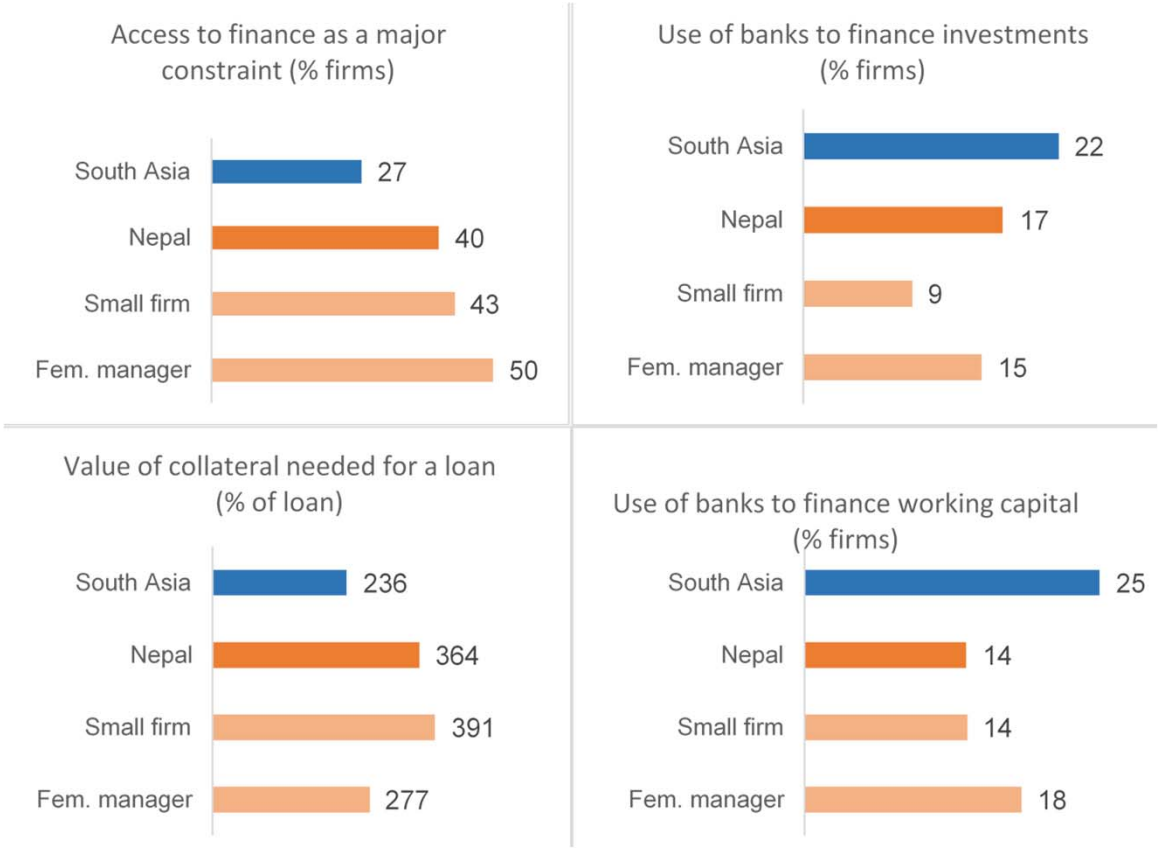
Remittances have contributed to real exchange rate appreciation and increasing real wages which reduce export competitiveness





Source: World Bank. 2017. CEM

Access to finance is worse in Nepal than in South Asia on average, and is worse for smaller firms and women-owned enterprises

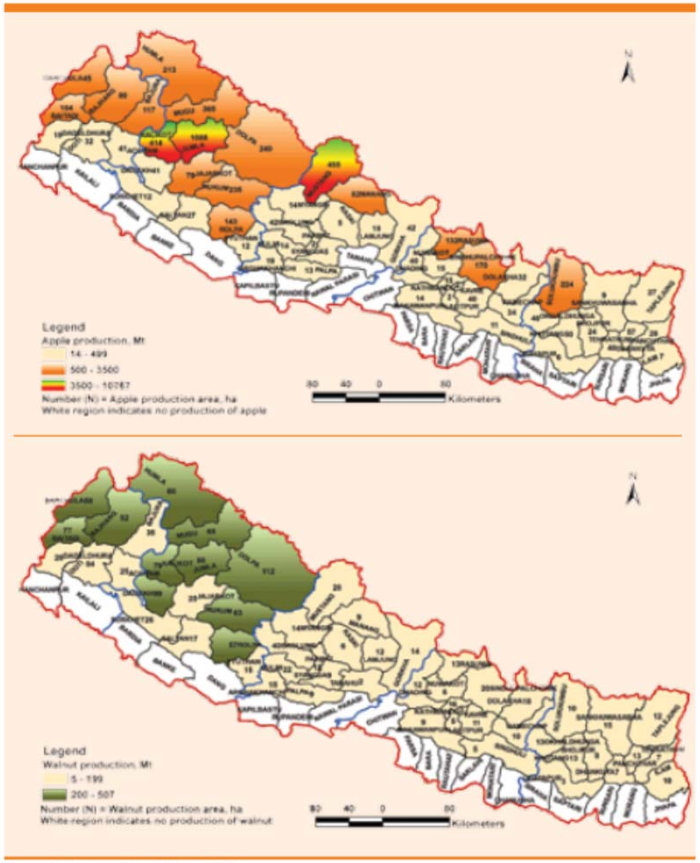


Source: Enterprises Survey 2013

Area 3: Harnessing the potential of natural resources

Nepal has untapped comparative advantage in production on non-traditional higher value crops in areas of higher elevation

FIGURE 5: **Production area of Apple (top) and Walnut (bottom), 2010/11**



Source: Agriculture Atlas of Nepal, 2012

World Bank. 2016. Source of Growth in Agriculture. World Bank, Washington DC.

Area 3: Harnessing the potential of natural resources

Growth in agriculture has been low and volatile driven by high prices and favorable monsoons rather than any growth in productivity.

Table 2.1 Decomposition of Changes in Crop Income between 2003/04 and 2010/11

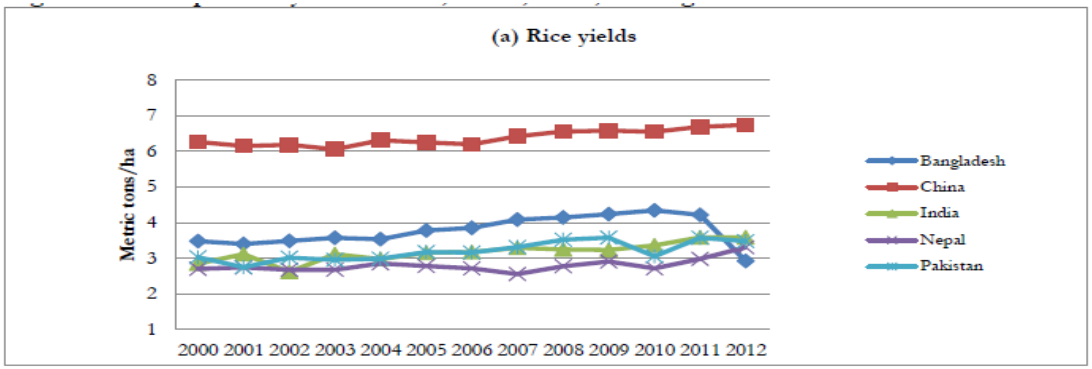
	Nepal	*Terai*	*Hills*	*Mountain*
Change in crop income	0.21	0.35	0.07	0.32
Contribution of land	–0.02	0.00	–0.01	–0.11
Contribution of yield	0.05	0.14	–0.07	0.23
Contribution of price	0.18	0.21	0.15	0.19

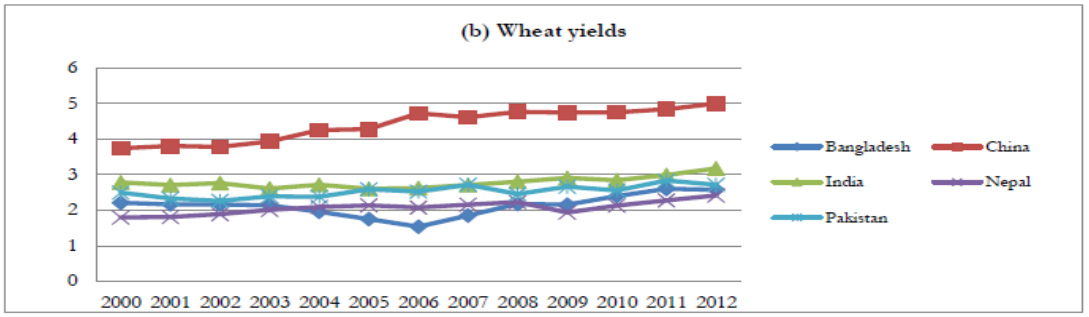
Source: Authors calculations,

World Bank. 2016. Source of Growth in Agriculture. World Bank, Washington DC.

Area 3: Harnessing the potential of natural resources

Cereal yields are low compared to neighboring countries, even when comparing production in lowland Nepal to other lowland neighbors

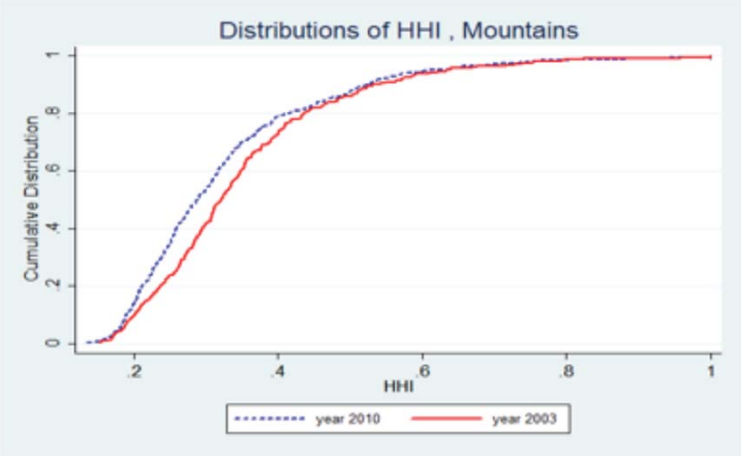


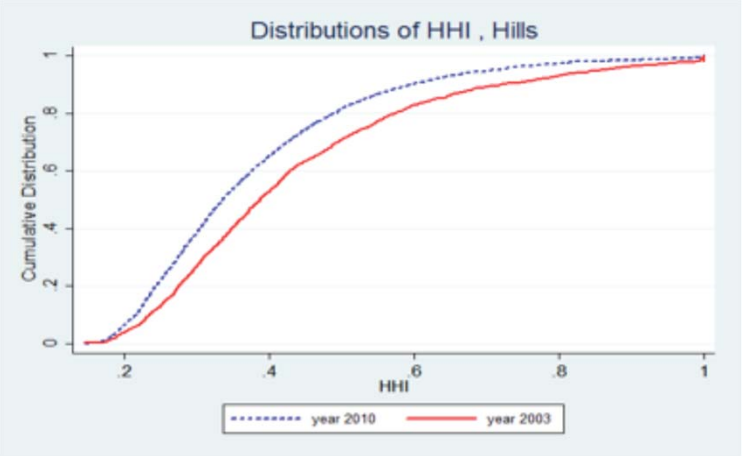


World Bank. 2016. Source of Growth in Agriculture. World Bank, Washington DC.

Diversification from cereals towards higher productivity fruits and vegetables has been limited

The area allocated to paddy fell from 76 percent in 2003/4 to 72 percent in 2010/11. There has been a modest increase in diversification, mainly driven by changes in the Hills (although the mountains are still the most diversified).





World Bank. 2016. Source of Growth in Agriculture. World Bank, Washington DC.

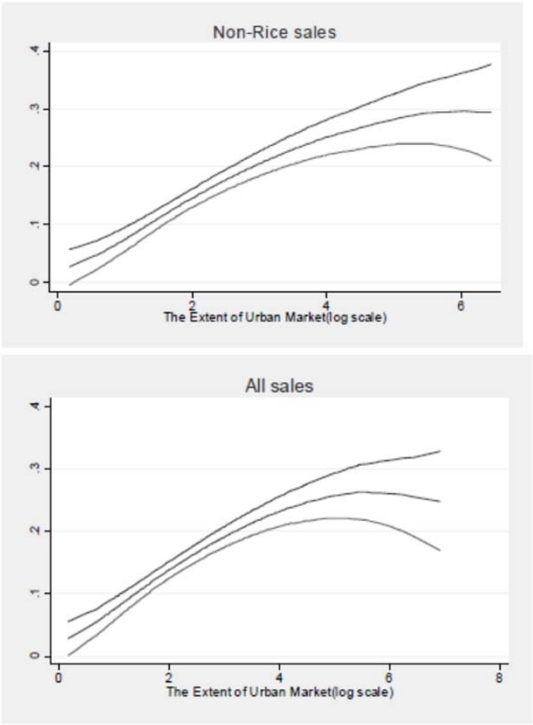
The share of crop produced for market falls significantly with distance

Table 2: Gravity model and Agricultural Sepcialization

	Herfindahl index of crop land use	% of land used in Non-cereal crop	Sales as % of production Non-Rice	All crop
		Without Endogeneity Correction		
Travel time to nearest town/city (log)	0.012	-0.082	-0.033	-0.030
	(0.64)	(4.17)***	(2.47)**	(2.88)***
Total Income of nearest town/city (log)	-0.002	0.031	-0.001	-0.002
	(0.21)	(2.17)**	(0.07)	(0.28)
Observations	235	235	237	237
R-squared	0.19	0.35	0.36	0.43
		With Endogeneity Correction		
Travel time to nearest town/city (log)	0.026	-0.112	-0.030	-0.019
	(1.62)	(4.69)***	(2.02)**	(1.60)
Total Income of nearest town/city (log)	-0.009	0.054	0.003	0.004
	(0.89)	(2.63)***	(0.19)	(0.36)
Observations	235	235	237	237
R-squared	0.18	0.34	0.36	0.42

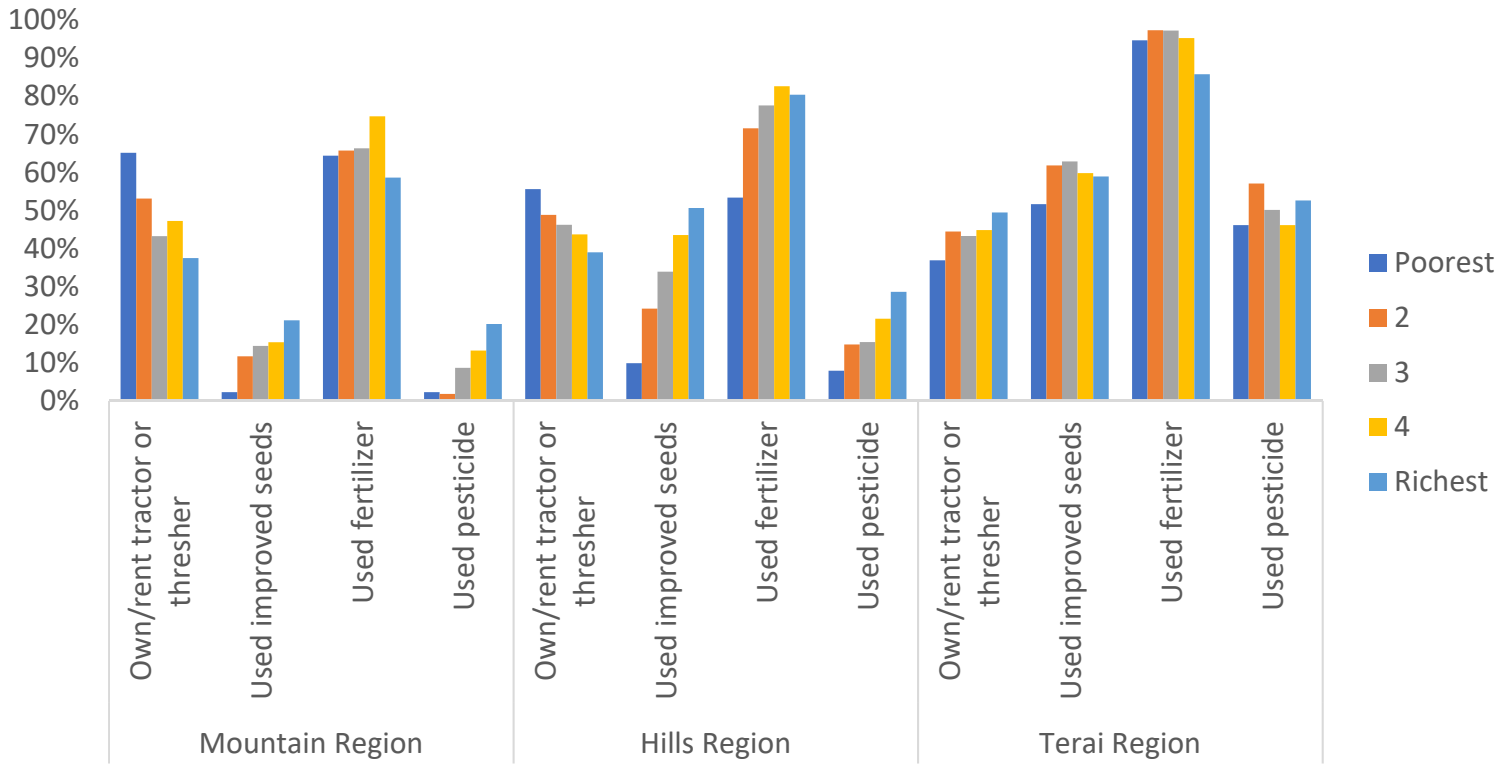
Note: Regression controls are same as in appendix Table A.3
Robust t statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Source: M. Shahe Emran and Forhad Shilpi. 2008. "The Extent of the Market and Stages of Agricultural Specialization" World Bank Policy Research Working Paper 4535



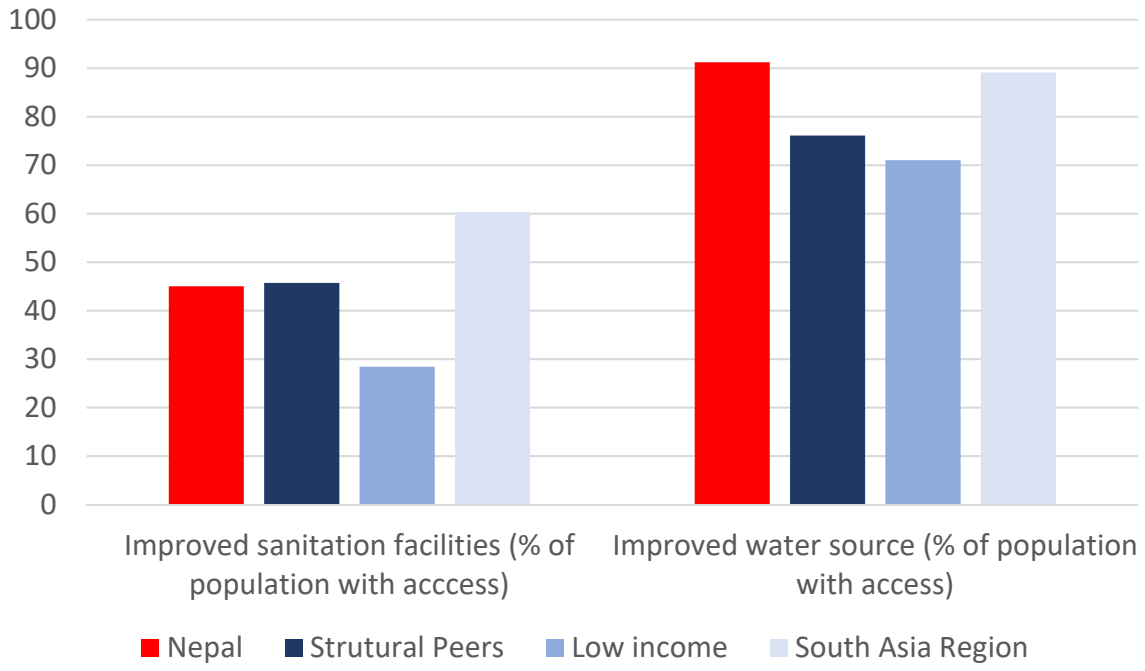
Area 3: Harnessing the potential of natural resources

Input use is relatively high (4 out of 5 households use fertilizer) and with a few exceptions do not show large gradients across consumption quintiles.



Source: Jacoby, H. 2017. Analysis for Nepal SCD using the 2016 Household Risk and Vulnerability Survey

Access to good sanitation and clean water is relatively good in Nepal

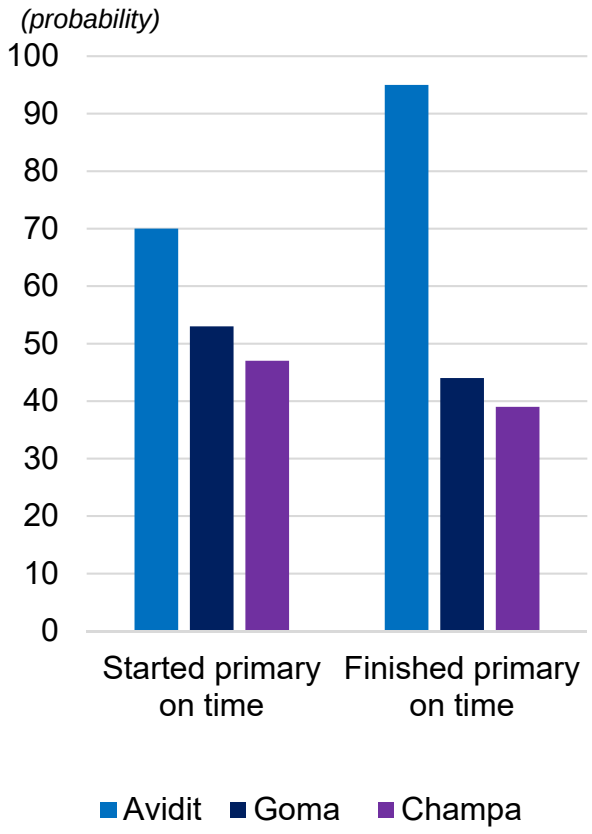


Source: Find my friends

Area 4: Ensuring all Nepalese are equally able to invest in and use human capital

Starting primary school on time, finishing primary school on time, being well-nourished in early childhood, having clean water to drink, adequate sanitation and electricity are in large part determined by a child's gender, parental wealth and education, and location.

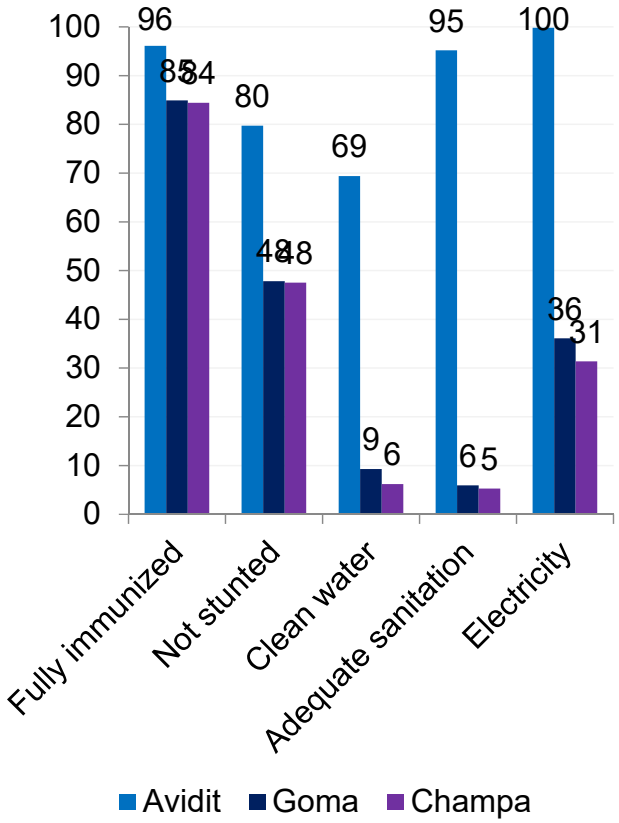
Circumstances of birth determine investments in a child's education…



Goma is a girl, born in rural Kalikot. Her parents are illiterate, belong to the Dailit community and are in the bottom 20 percent of Nepal's wealth distribution.

Champa is also a girl born to a household otherwise very similar to Goma's. But Champa's parents are from a village in Siraha.

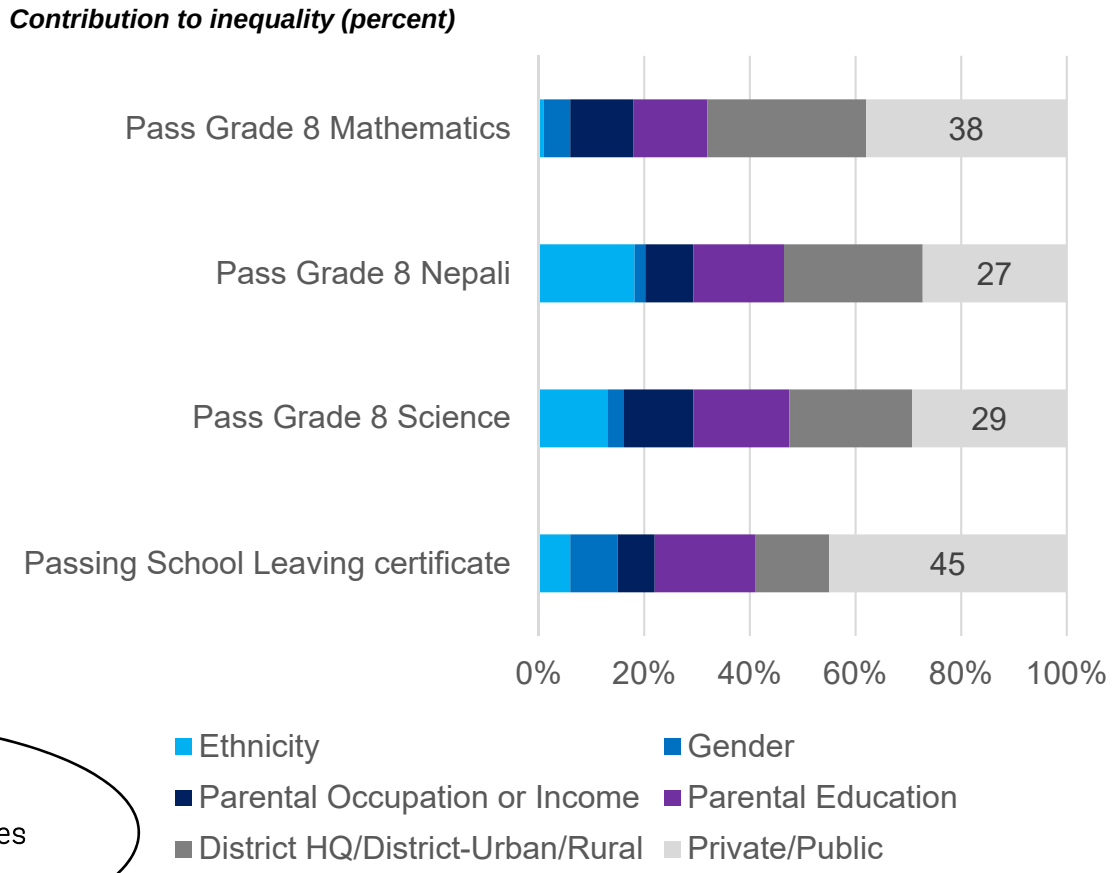
Avidit is a boy born to an upper caste household in urban Kathmandu. Both his parents have a university education and come from affluent backgrounds.



Source: World Bank . 2016. Moving Up the Ladder. World Bank, Washington DC.

Area 4: Ensuring all Nepalese are equally able to invest in and use human capital

Analysis of performance in national examinations such as the SLC or the National Assessment of Student Achievement (NASA) administered to eight-graders, show the odds of passing to be skewed in favor of children with favorable birth circumstances.

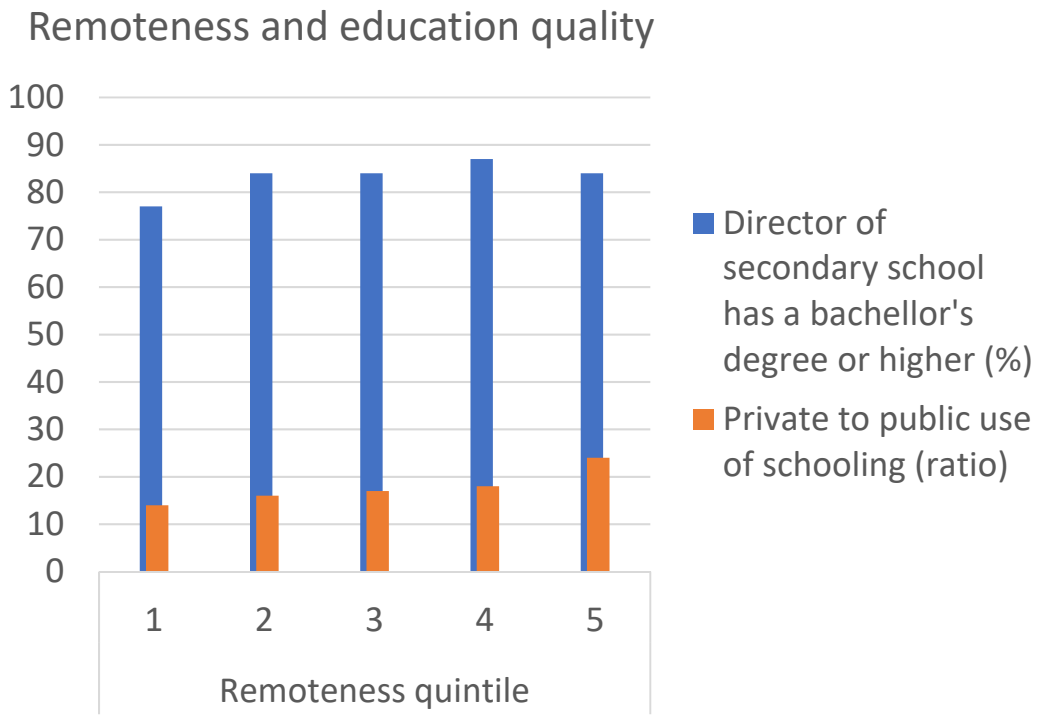


55-73% of inequality is explained by circumstances of birth

Source: World Bank . 2016. Moving Up the Ladder. World Bank, Washington DC.

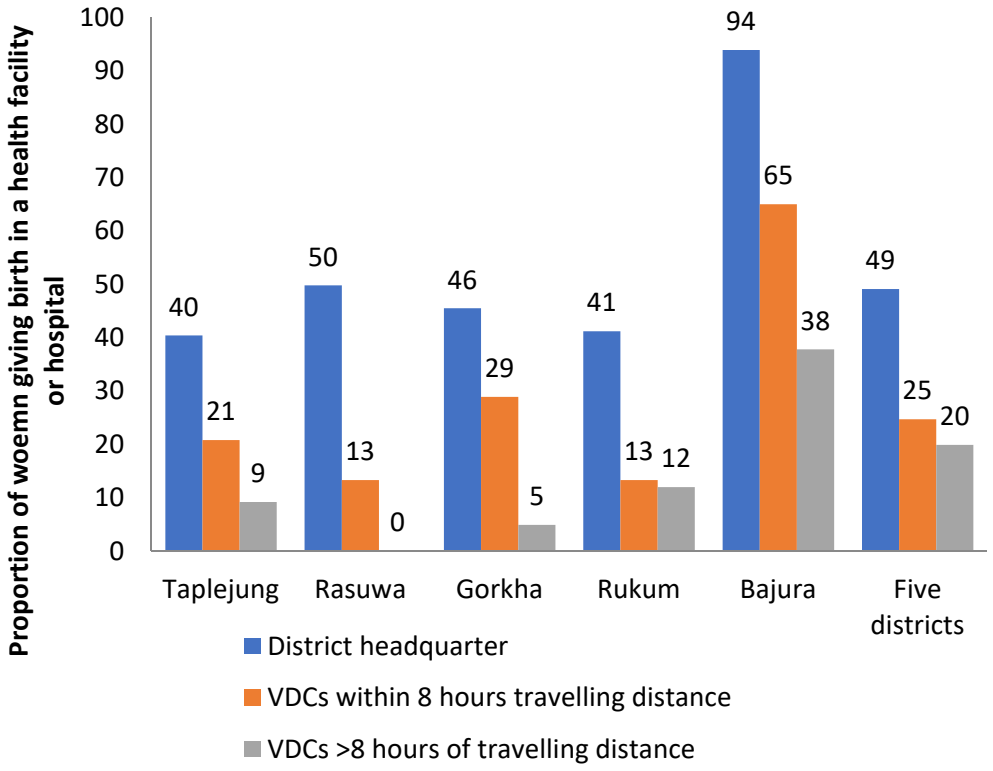
Area 4: Ensuring all Nepalese are equally able to invest in and use human capital

School quality more generally, proxied by the education of the school head, falls with remoteness perhaps reflecting the absence of private education provision in more remote areas or the challenge of providing high quality public services in remote locales.



Source: Jacoby, H. 2017. Analysis for Nepal SCD using the 2016 Household Risk and Vulnerability Survey

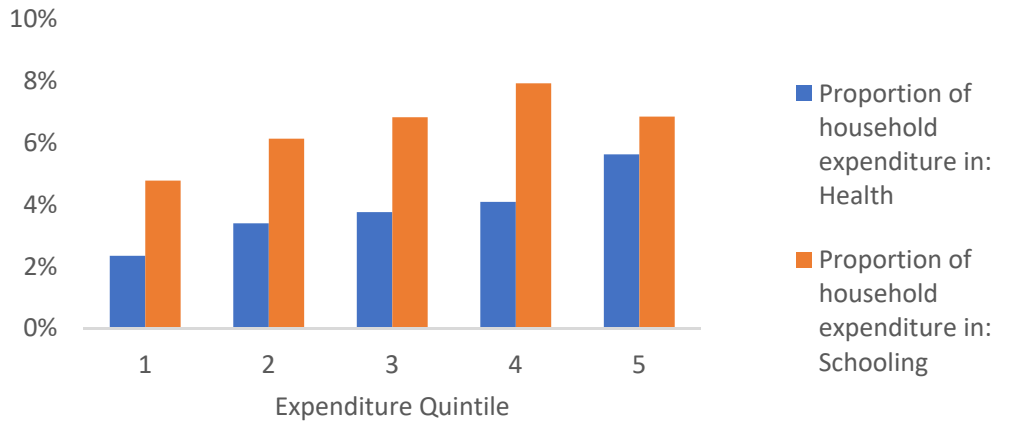
Providing basic secondary health services in remote locations is similarly challenging.

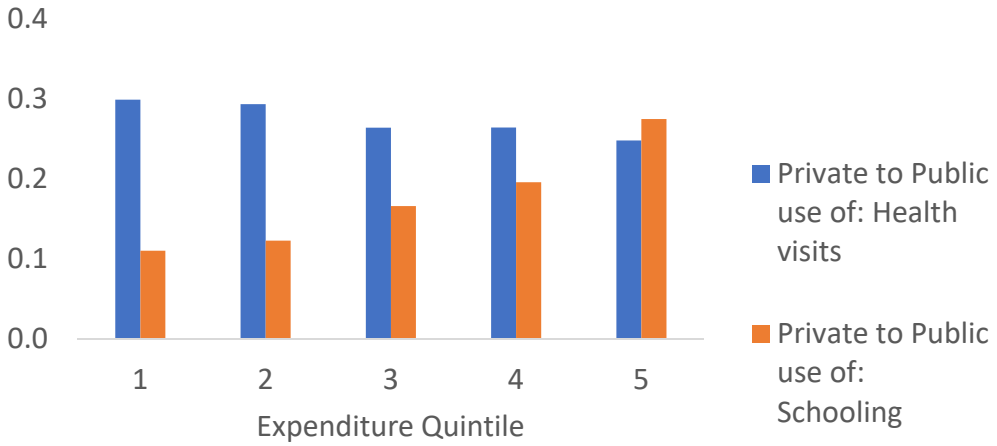


Kiran Regmi, Senendra Upreti, Maureen Dar Iang, Hom Nath Subedi, Devi P Prasai, Kapil Babu Dahal, Chhaya Jha, Shilu Aryal, Swaraj Rajbhandari, Rachel Phillipson, Stephen Keeling, Alison Dembo Rath, and Deborah Thomas. October 2013. A study on access to maternal, neonatal, and child health services in remote areas of Nepal: consolidated report of findings. (Note VDC is Village Development Committee).

Area 4: Ensuring all Nepalese are equally able to invest in and use human capital

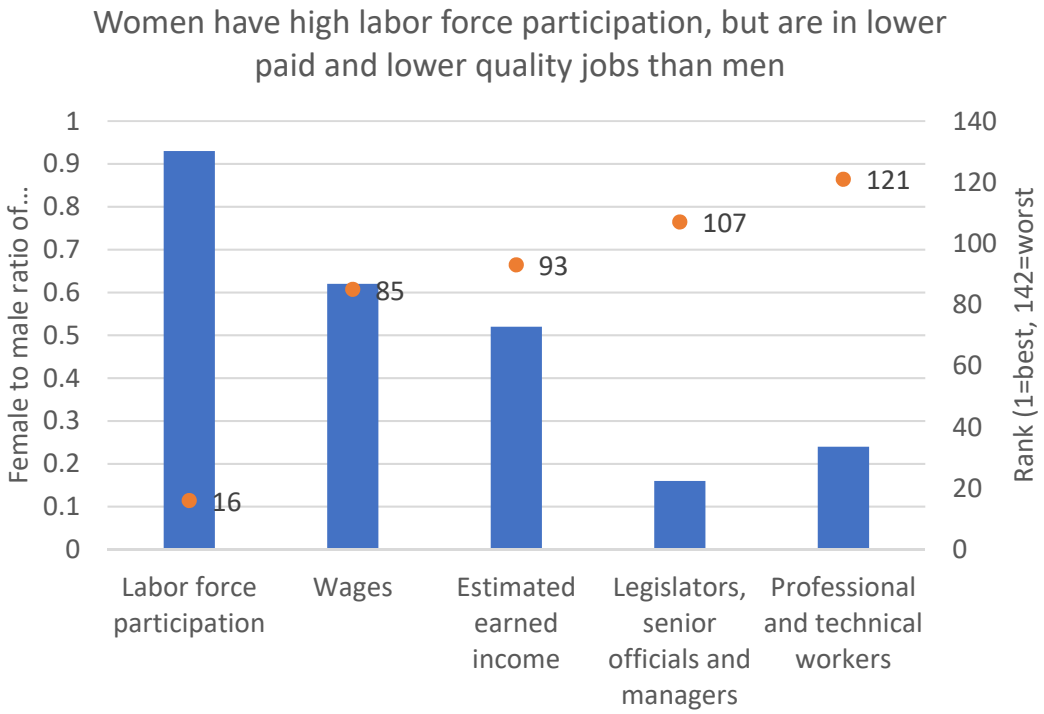
Household survey data collected in rural Nepal in 2016 shows that spending on health and education and attendance at private school increases with wealth





Source: Jacoby, H. 2017. Analysis for Nepal SCD using the 2016 Household Risk and Vulnerability Survey

Women have high labor force participation, but are in lower paid and lower quality jobs than men



World Economic Forum. 2014. The Global Gender Gap Report

Area 4: Ensuring all Nepalese are equally able to invest in and use human capital

Improvements in food security, maternal education and access to good sanitation, clean water and basic health services resulted in Nepal recording the fastest recorded decline of stunting rates in the world from 2001 to 2011

"In the 1990s Nepal had the highest recorded rate of child stunting in the world, with around 60 percent of children younger than 5 years being stunted, many of them severely so. From 2001 to 2011 Nepal achieved the fastest recorded reduction in child stunting in the world, reducing child stunting from 56.6 to 40.0, a reduction of 1.66 points per year."

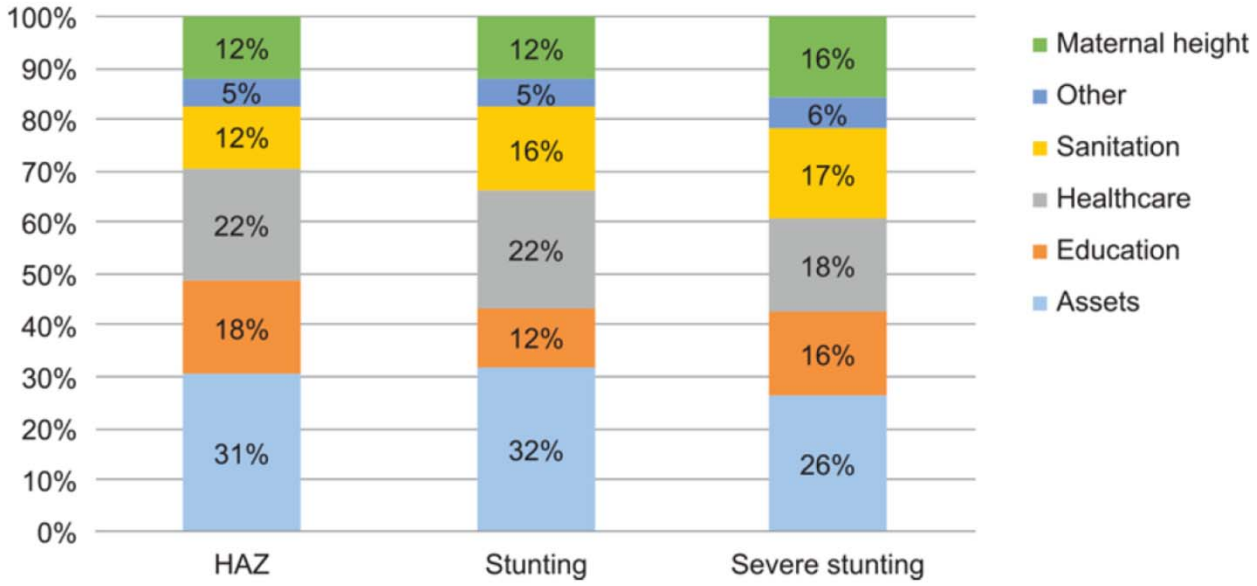


Fig 3. Contributions to predicted nutritional change by nutrition indicator. Source: Authors' estimates. Note: HAZ = height-for-age *z* score.

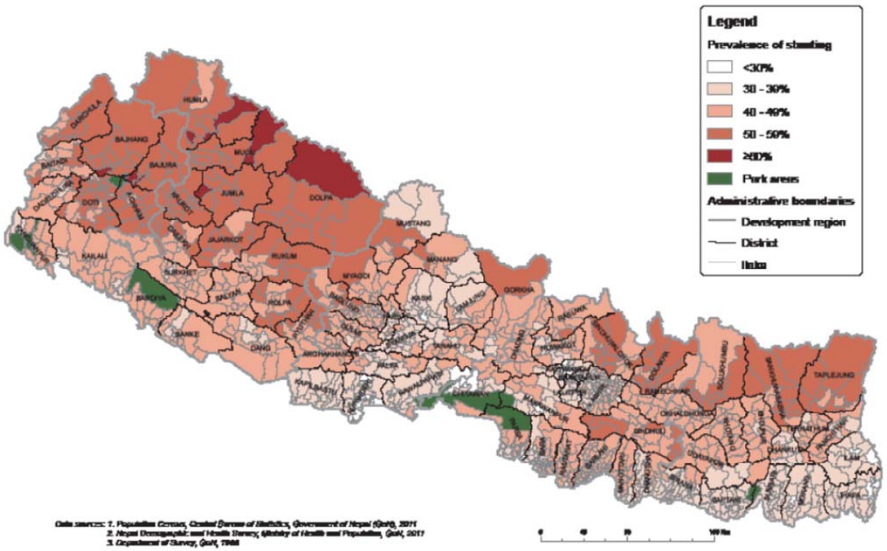
doi:10.1371/journal.pone.0145738.g003

Headey DD, Hoddinott J (2015) Understanding the Rapid Reduction of Undernutrition in Nepal, 2001–2011. PLoS ONE 10(12): e0145738. doi:10.1371/journal.pone.0145738

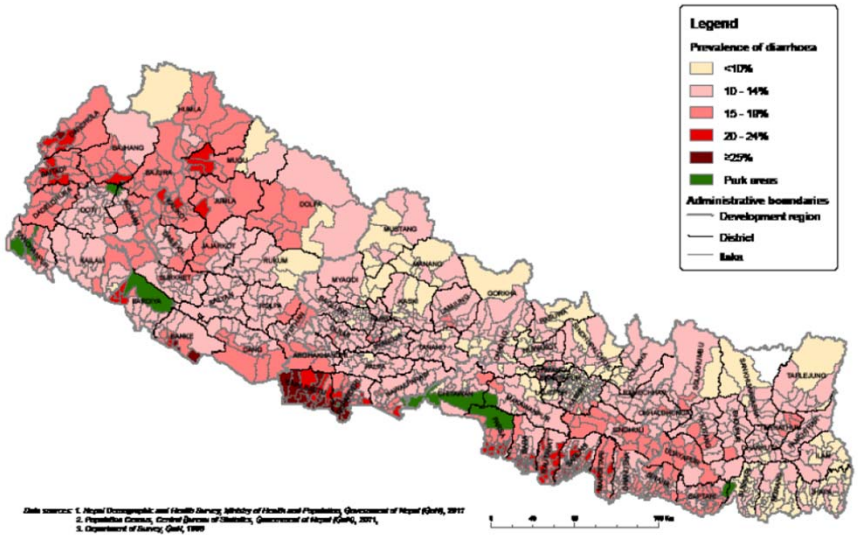
Area 4: Ensuring all Nepalese are equally able to invest in and use human capital

A number of places with the highest rates of malnutrition are places with the highest rates of diarrheal disease

Prevalence of stunting

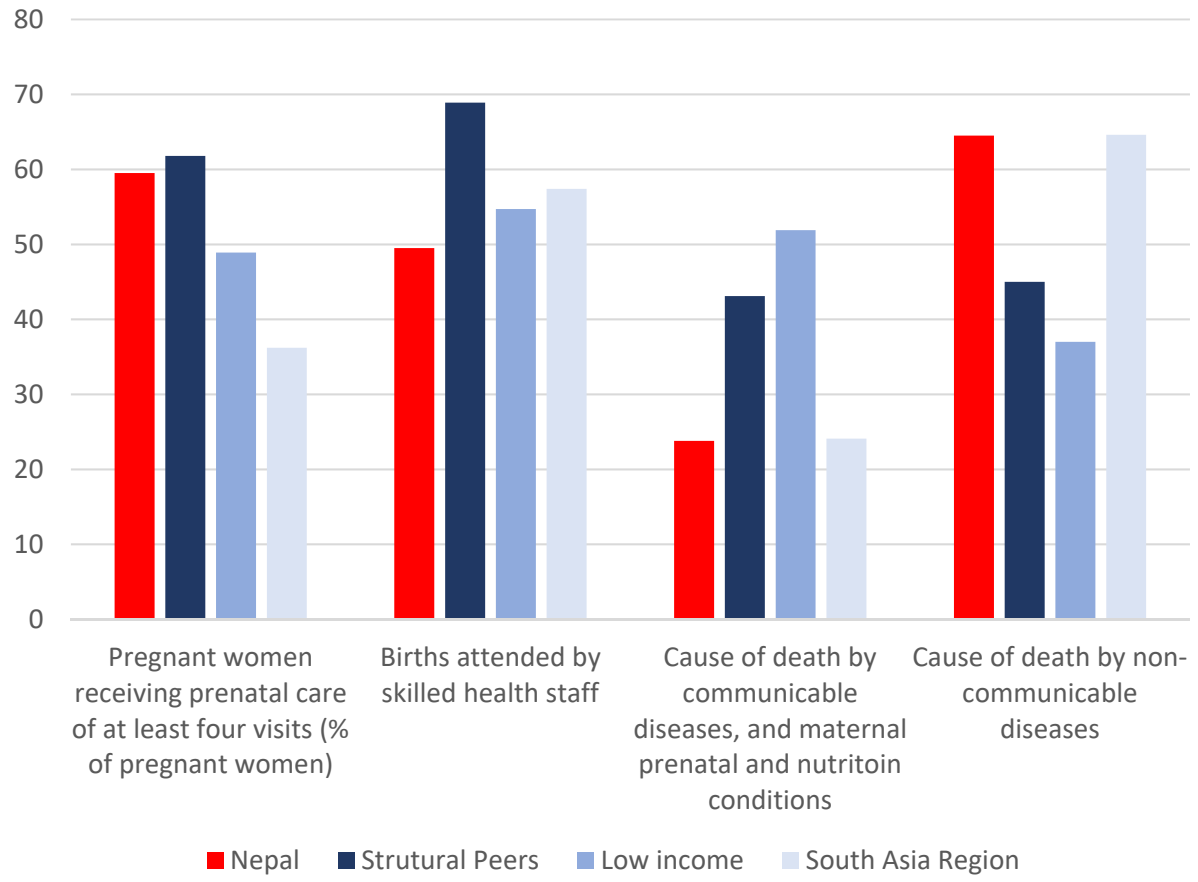


Prevalence of diarrhea



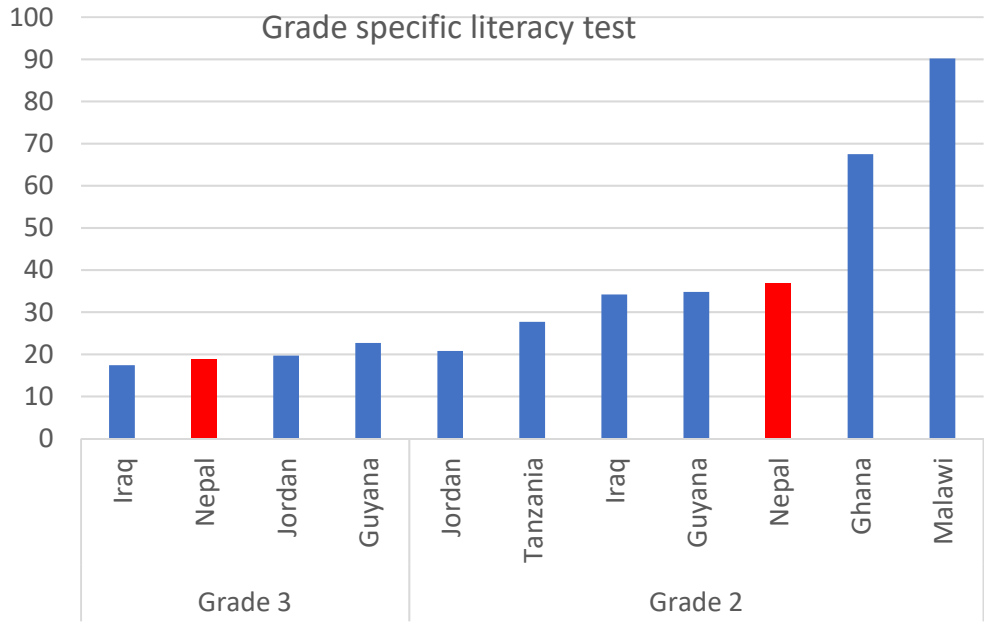
Source: Haslett, S., Jones, G., Isidro, M., and Sefton, A. (2014) Small Area Estimation of Food Insecurity and Undernutrition in Nepal, Central Bureau of Statistics, National Planning Commissions Secretariat, World Food Programme, UNICEF and World Bank, Kathmandu, Nepal, December 2014.

Nepal performs well in providing primary health services, but less well in more complex care provision



Source: WDI using Find my Friends

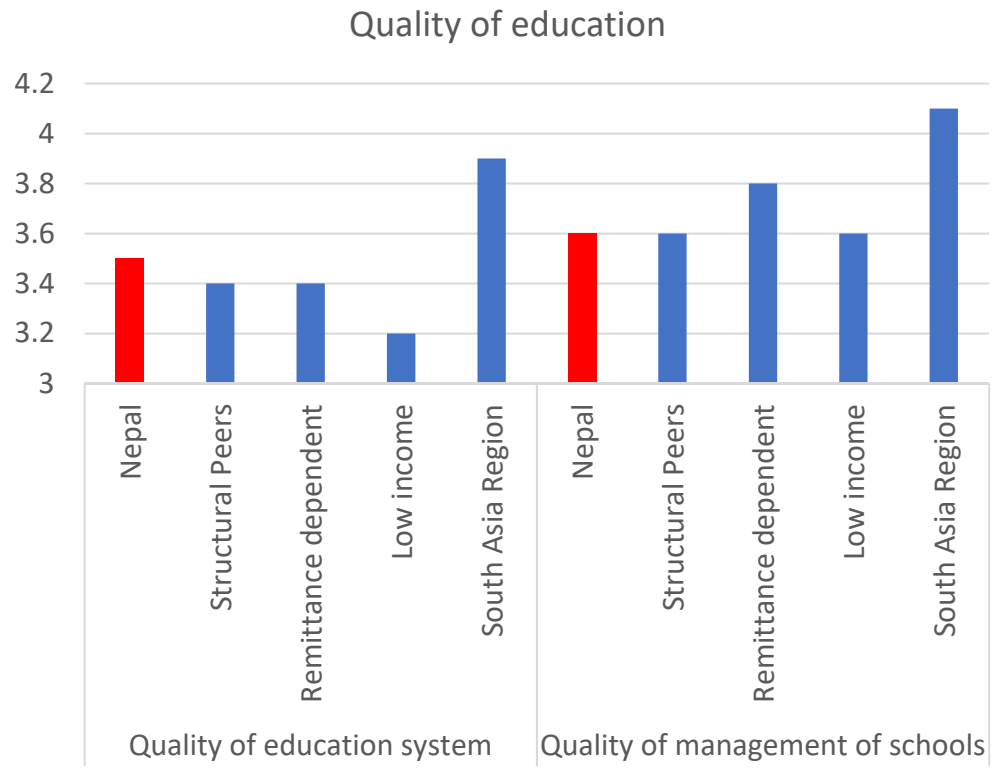
Grade-specific literacy test scores are low, but better than several other countries



Gove (2015) Background paper prepared for the Education for All Global Monitoring Report 2015.

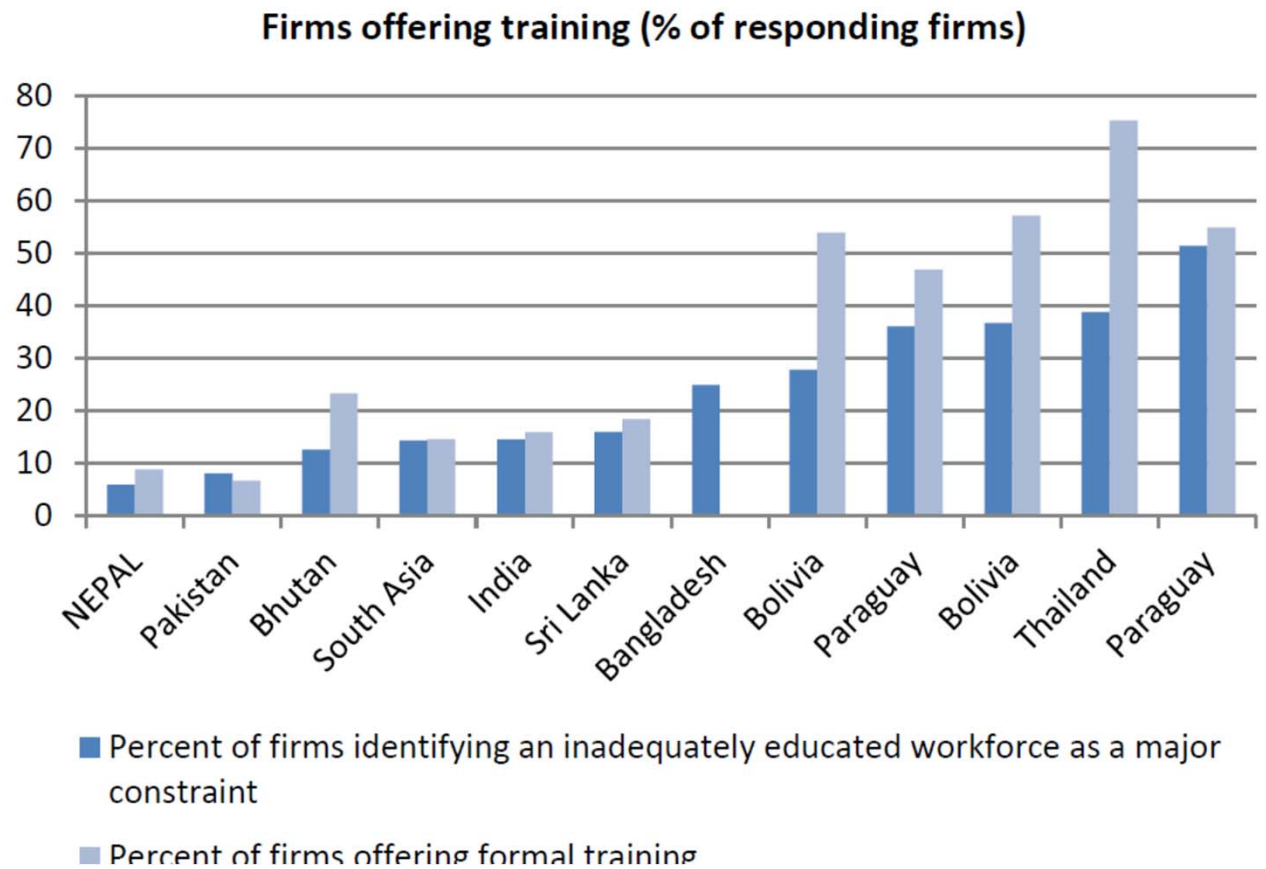
Area 4: Ensuring all Nepalese are equally able to invest in and use human capital

The quality of education system and school management scores are at the same level as structural peers (although lower than the regional average).



Source: WDI using Find my Friends

Few firms provide training



Nepal Growth Diagnostic 2014 using Enterprise Survey data

Climate related risks in Nepal are high

- Floods and Landslides– Estimated Annual Loss of USD 14.7m (2001-2007)

- Glacial Lake Outburst Floods (GLOFs) and Landslides – Significant national and regional risk
  - The Himalayan range in Nepal constitutes 33,000 sq.km of the estimated 110,000 sq.km of glaciated area.
  - Glacier thinning and retreat in the Himalayas has resulted/and continuing to result in the formation of new glacial lakes and the enlargement of existing ones. These are very ***unstable and subject to catastrophic drainage*** causing damage to lives and assets downstream.
  - Nepal has experienced ***24 GLOF events in the recent past***, several of which have caused considerable damage and loss of life
    - the Bhote Koshi Sun Koshi GLOFs of 1964 and 1981. ***Damaged the only road link to China and disrupted transportation for several months***
    - the Dig sho GLOF of 1985. Destroyed the nearly completed ***Namche Small Hydroelectric Project***
    - Approximately 26 potentially dangerous lakes exist. Tsho Rolpa and Imja Tsho identified for continued and more intensive study
  - Himalayan glaciers are water reservoirs for the entire South Asian sub-region and regulate water resources in the region. Changing dynamics of the Himalayan glaciers is a significant risk to water resources in the country and the region, that is already water-stressed.

Imja Tso glacial lake

Climate related risks in Nepal are high

- Floods and Landslides– Estimated Annual Loss of USD 14.7m (2001-2007)

- Floods and Landslides in non-Himalayan region
  - 80% of Nepal's rainfall (159-5000mm per annum) occurs during monsoon period (June-September), the timing has become unpredictable recently
  - Projections affirm that risks of flooding will increase considerably in river basins of Nepal. Global Circulation Model projects a wide range of precipitation changes, especially in the monsoon, 14–40% by the 2030s increasing to 52–135% by the 2090s
  - Severe ***urban and rural*** issue. Range of impacts:
    - Personal security (47% of flood victims die due to drowning, loss of income, diseases)
    - Buildings and infrastructures (loss of rural houses and roads, inundation of urban roads-affecting transport, economies, damages to hydroelectric plants, industries, damage to ancient cultural heritage)
    - Agricultural production (86% of the population relies on agriculture, loss of crops and livestock, uncertainty in cropping patterns, pests)
    - Marginalized populations in Nepal continue to live and settle near rivers, roads and steep slopes. They own and cultivate at risk lands.

The nature of risk varies across regions: drought has the largest monetary and welfare impact in the Tarai

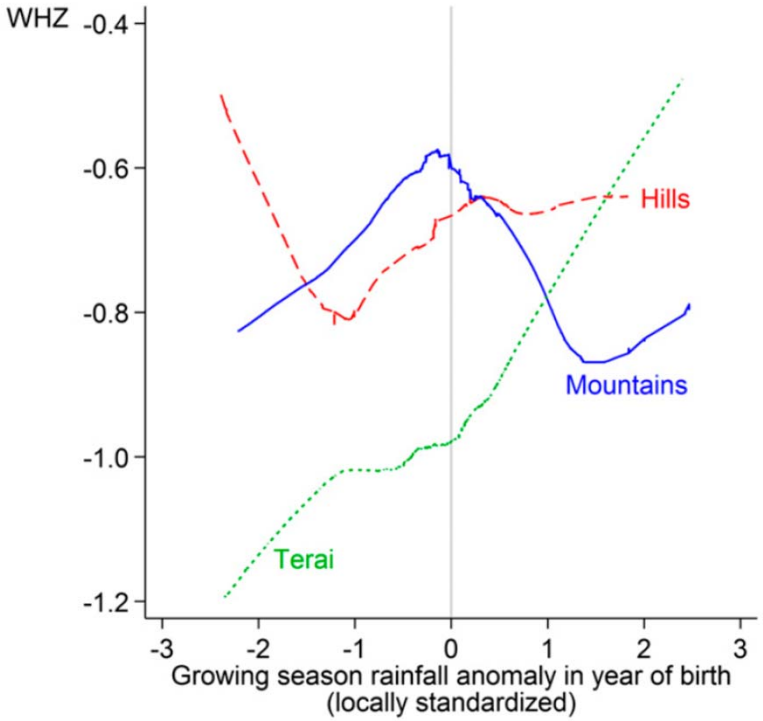
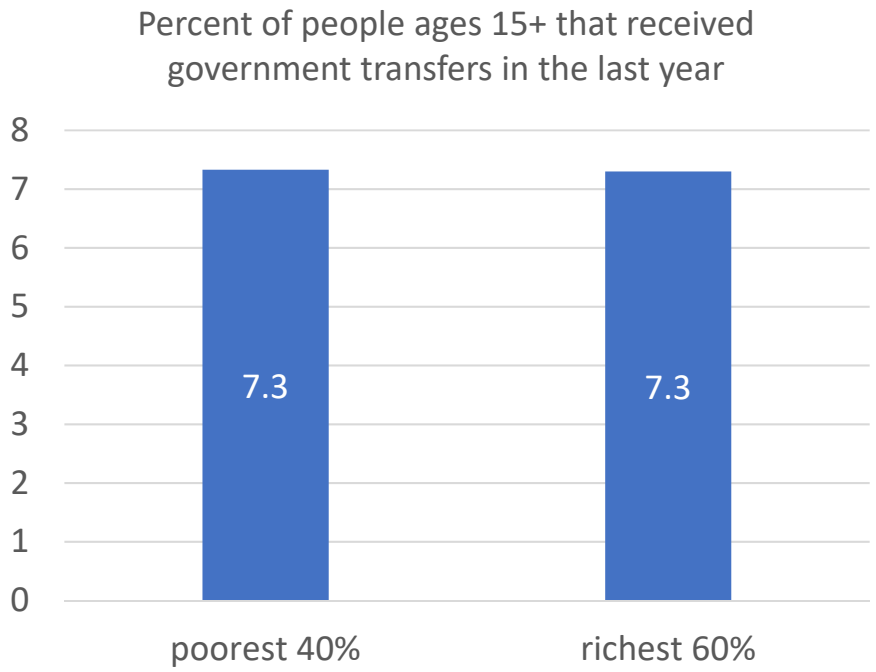


Fig. 3. Growing season rainfall in year of birth and WHZ for Nepalese children 0–60 mo of age in 2001–2011 (locally weighted regression plots, $n = 4{,}561$). Values of WHZ used in the figure are predictions from an ordinary least-squares (OLS) regression that includes child- and household-level covariates as well as control variables for location and birth month (Table S1). Values on the x axis are growing season rainfall anomalies in the child's year of birth, standardized by the local mean and SD of rainfall. Standardization is based on rainfall observed over 15 y (1998–2012) at the closest rainfall reporting station ($n = 276$) to the child. Details are provided in *SI Materials and Methods*.

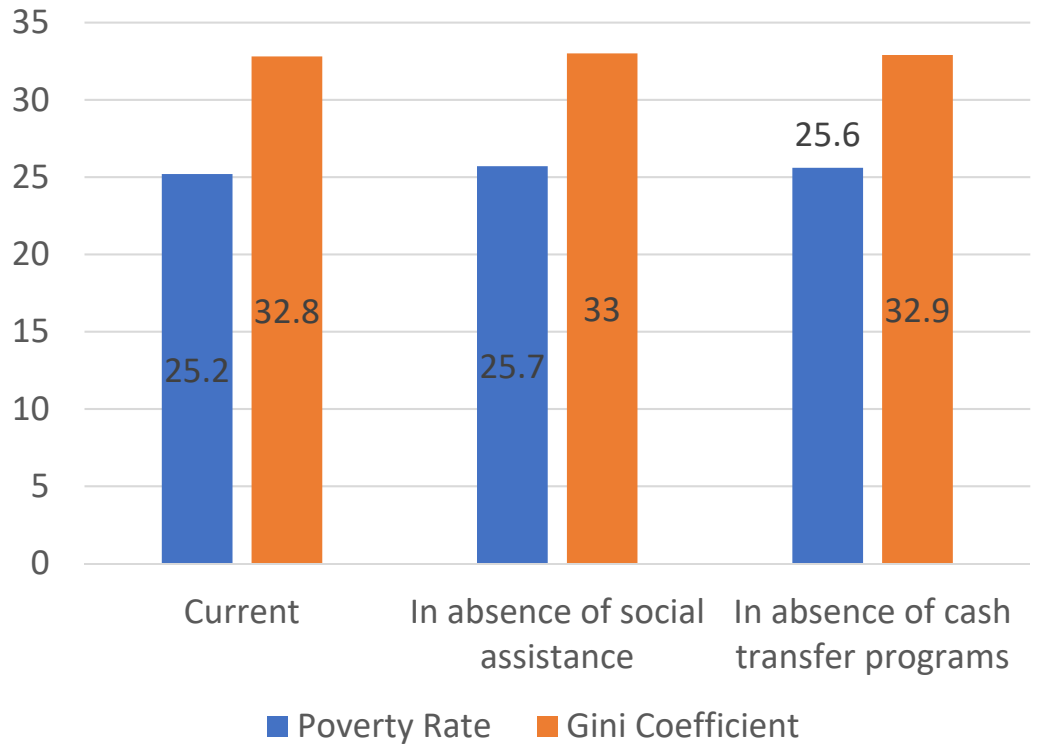
Shively, G. 2017. Infrastructure mitigates the sensitivity of child growth to local agriculture and rainfall in Nepal and Uganda. Proceedings of the national Academy of Sciences. vol. 114 no.5: 903-908.

Public safety nets are not well-placed to help protect households. Existing government transfers are poorly targeted to poor households.

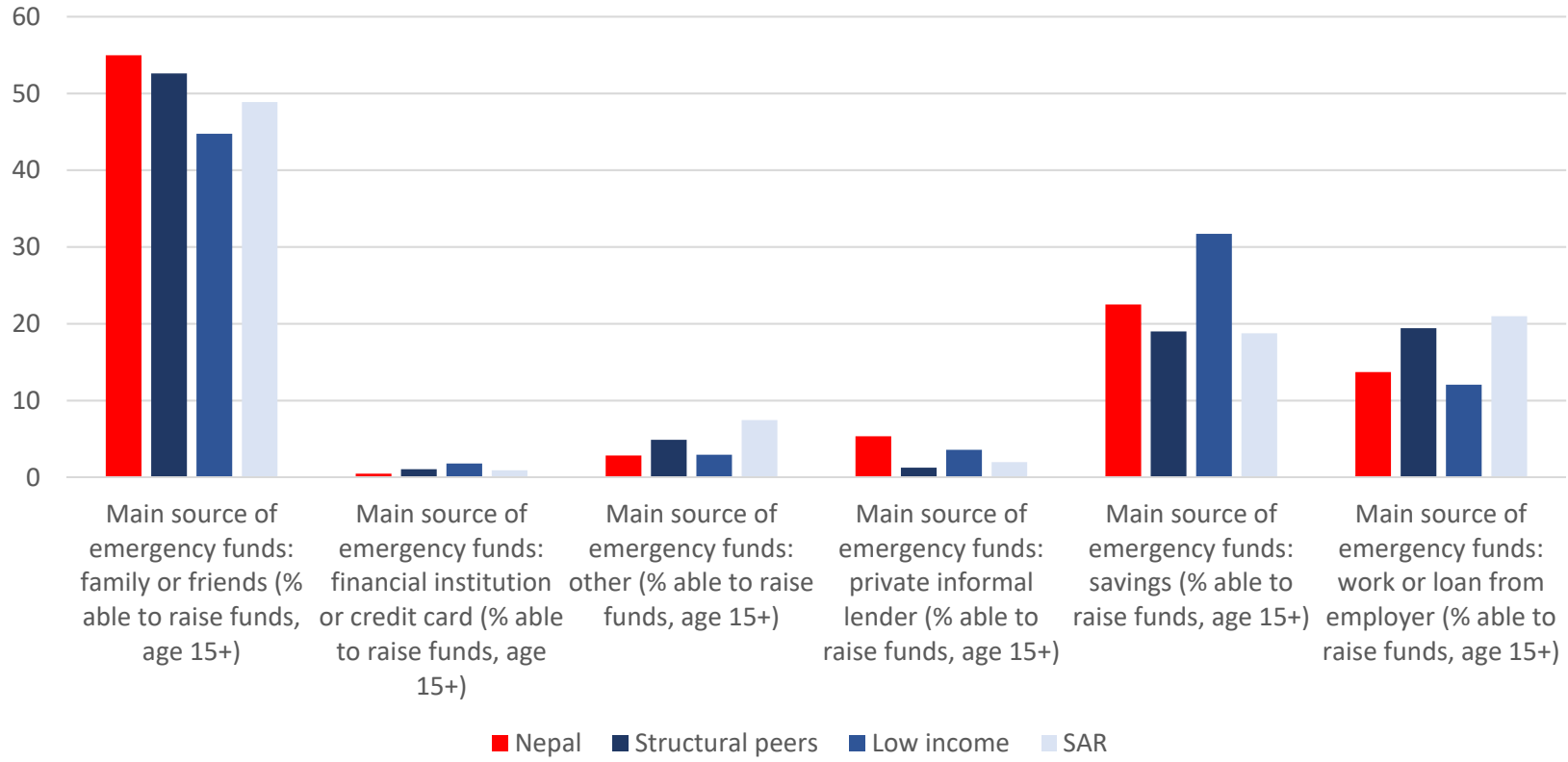


Source: Findex, 2014

Removing social assistance or cash transfer programs would cause poverty to rise by only 0.5 percentage points

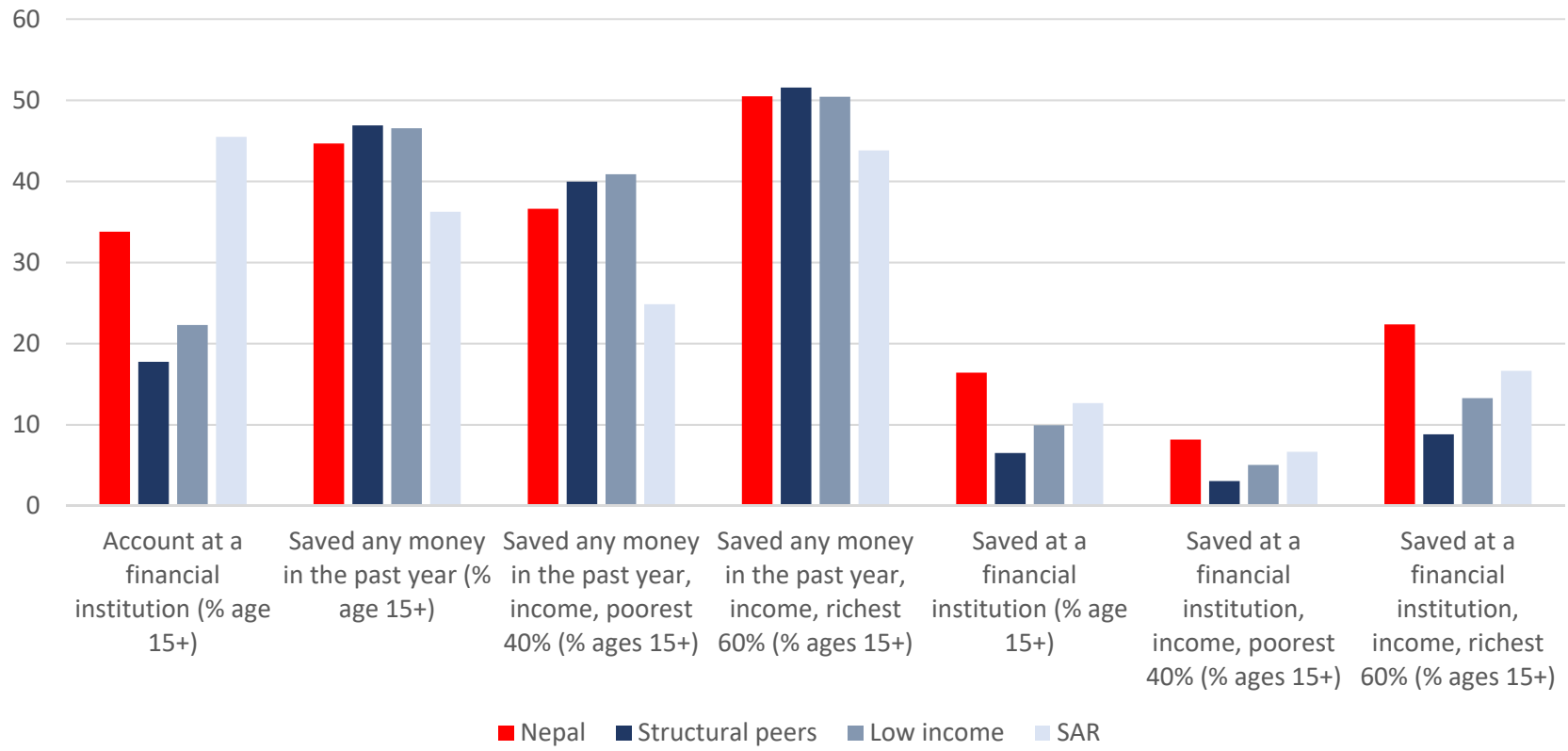


Transfers from family and friends are the most common source of cash in the face of emergencies



Source: Findex, 2014

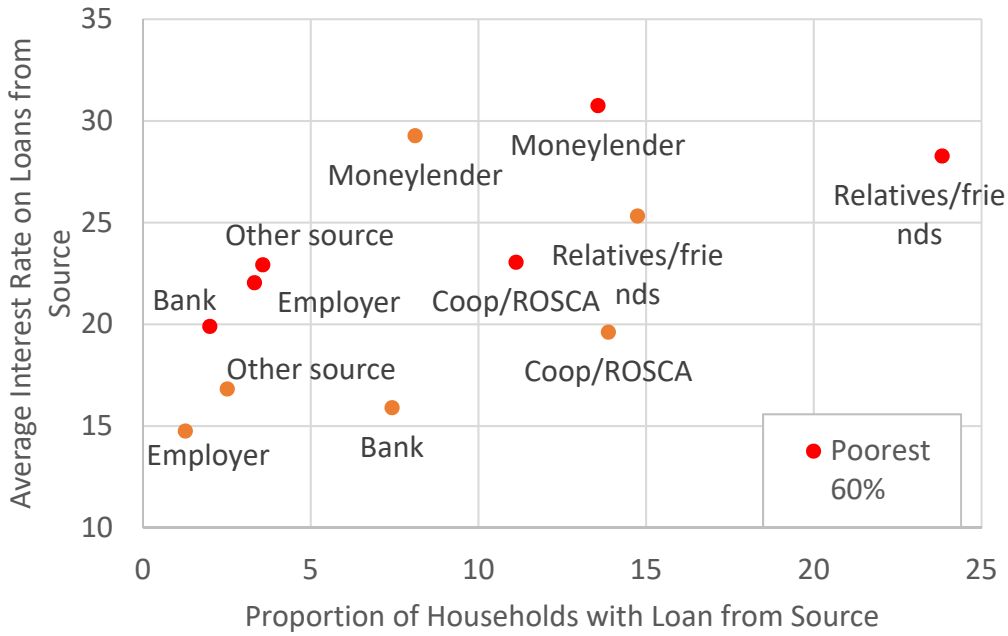
Nepali save, and save in formal accounts as much or more than peers. Savings rates are a bit lower among the poorest.



Source: Findex 2014

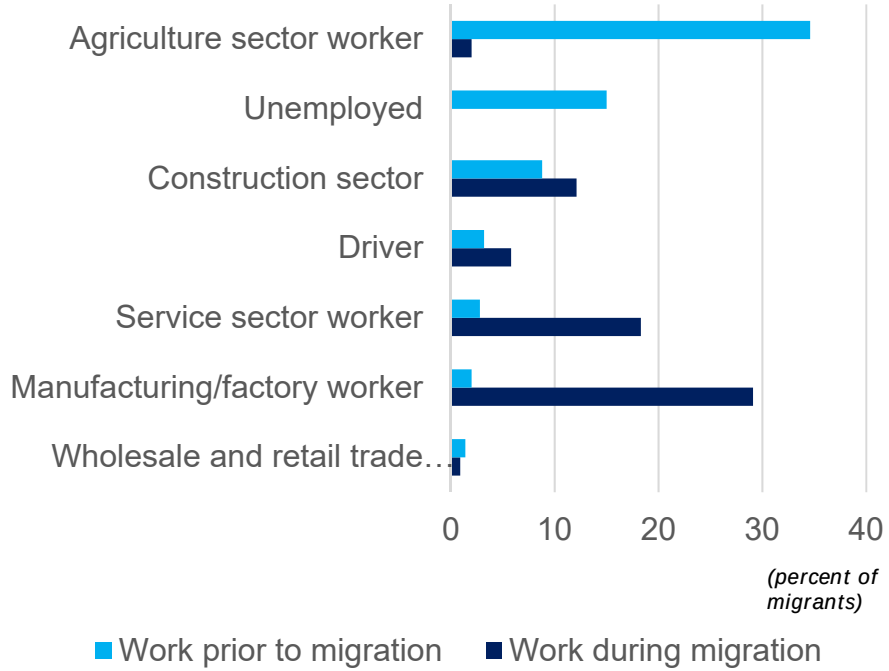
The sources of borrowing that poorer households have access to have high interest rates

Loan Sources and Interest Rates, Non-metropolitan Nepal, 2016



Source: Walker, Khadka and Pandey, 2017. "Risk and Vulnerability in Nepal" using the Nepal Household Risk and Vulnerability Survey 2016.

Migration entails a sectoral shift in employment



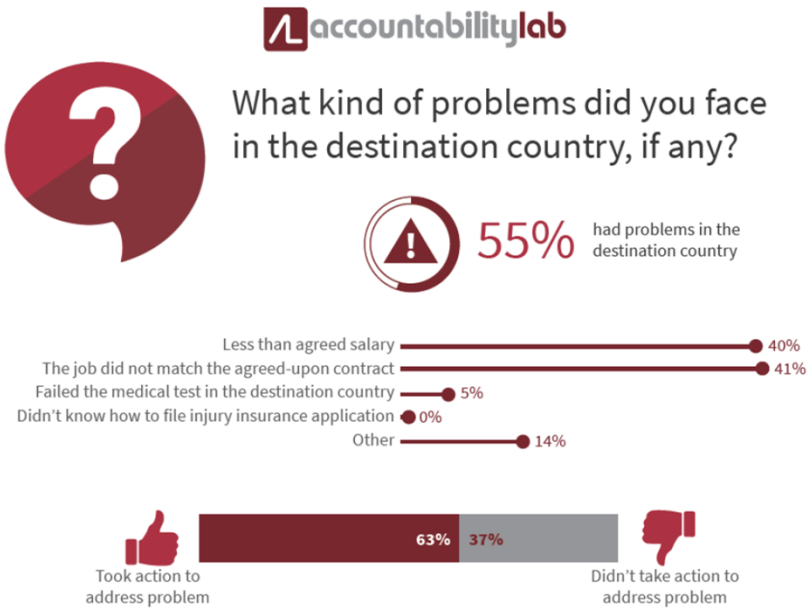
Source: IOM, 2016

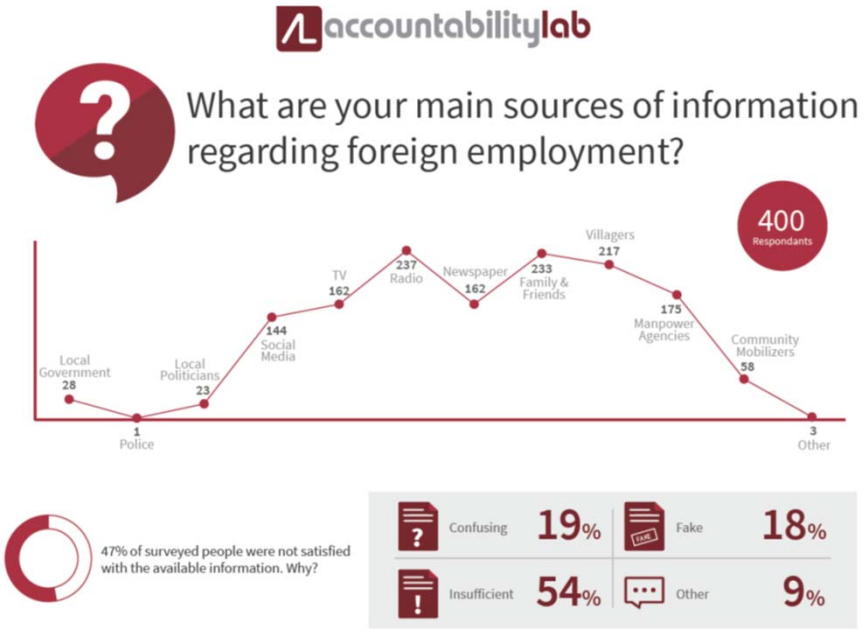
Area 6: Getting more from migration

Most returnees that would like to stay in Nepal would like to start a new business

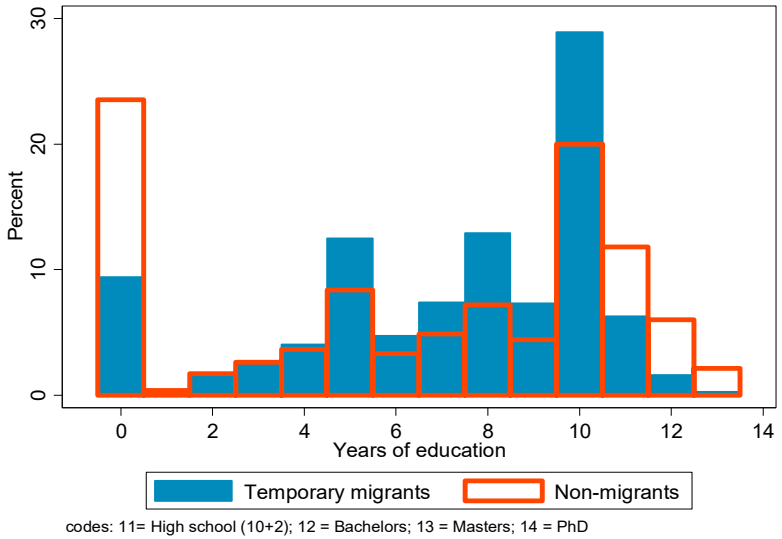
Area 6: Getting more from migration

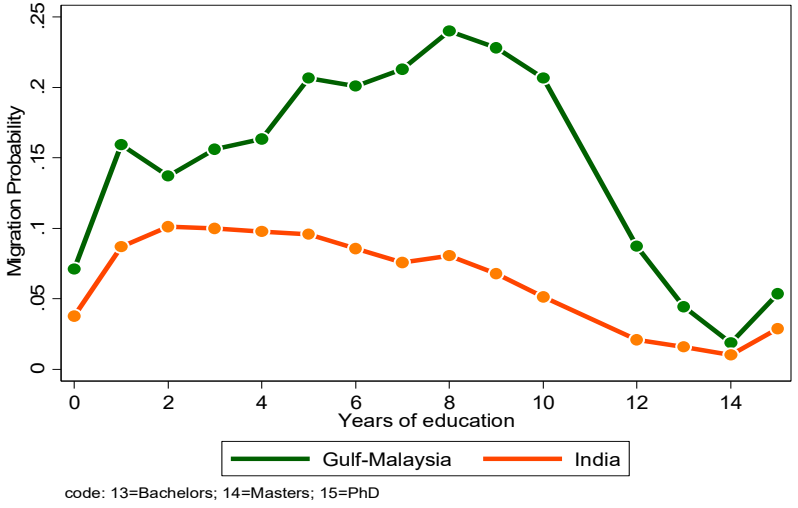
Migrants have access to information before migrating, but it is not always adequate or accurate





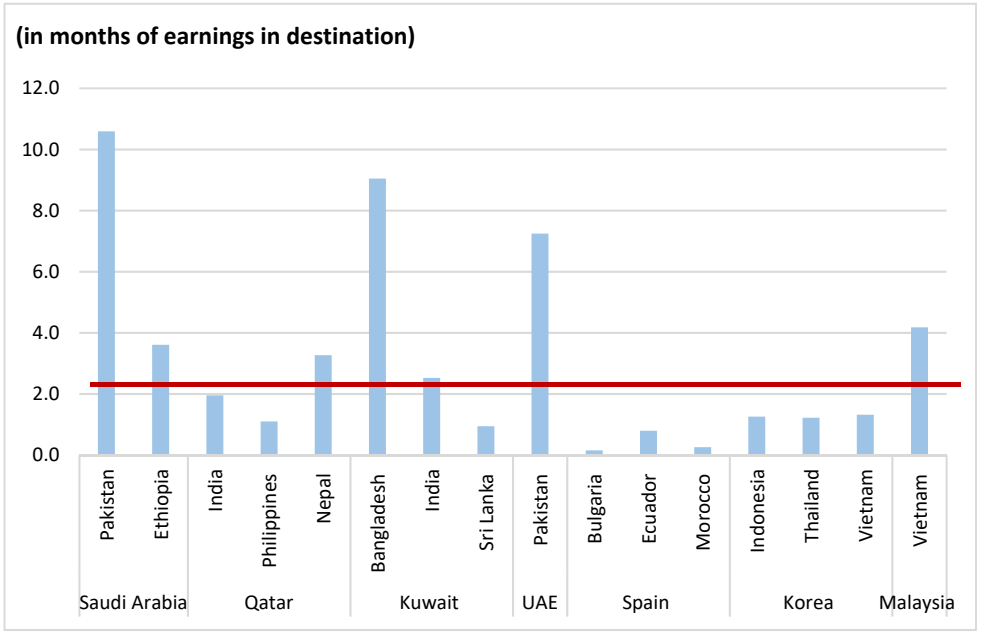
Migration to the Gulf and Malaysia is largely low-skilled





Shrestha, M. 2017. The impact of large-scale migration on poverty, expenditures, and labor market outcomes in Nepal

The costs of migration for Nepali workers are high but not abnormal



Source: World Bank KNOMAD Migration Cost survey dataset.
Note: "red line" refers to migration costs in one-month earning.