



Occupational health and safety among agriculture workers in Nepal

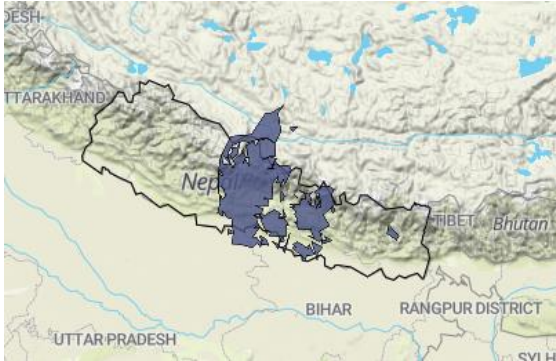
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Size



Nepal is ~3.4 times *bigger*

Population

Nepal: 29.6 million

Denmark: 5.8 million

GDP per capita

Nepal: 1155 USD

Denmark: 60908

If Nepal were your home instead of Denmark you would...

be 9.4 times more likely to be unemployed [more info](#) ▼

die 11.9 years sooner ▼

be 9.9 times more likely to die in infancy ▼

make 96.03% less money ▼

be 4.1 times more likely to be murdered ▼

spend 99.43% less money on health care ▼

use 98.54% less electricity ▼

consume 97.92% less oil ▼

experience 32.26% more of a class divide ▼

be 22.39% less likely to be in prison ▼

be 50% more likely to have HIV/AIDS ▼

have 2.1 times more babies ▼

<https://www.ifitweremyhome.com/compare/DK/NP>

<https://www.mylifeelsewhere.com/country-size-comparison/nepal/denmark>

[World Bank](#)

Agriculture sector in Nepal

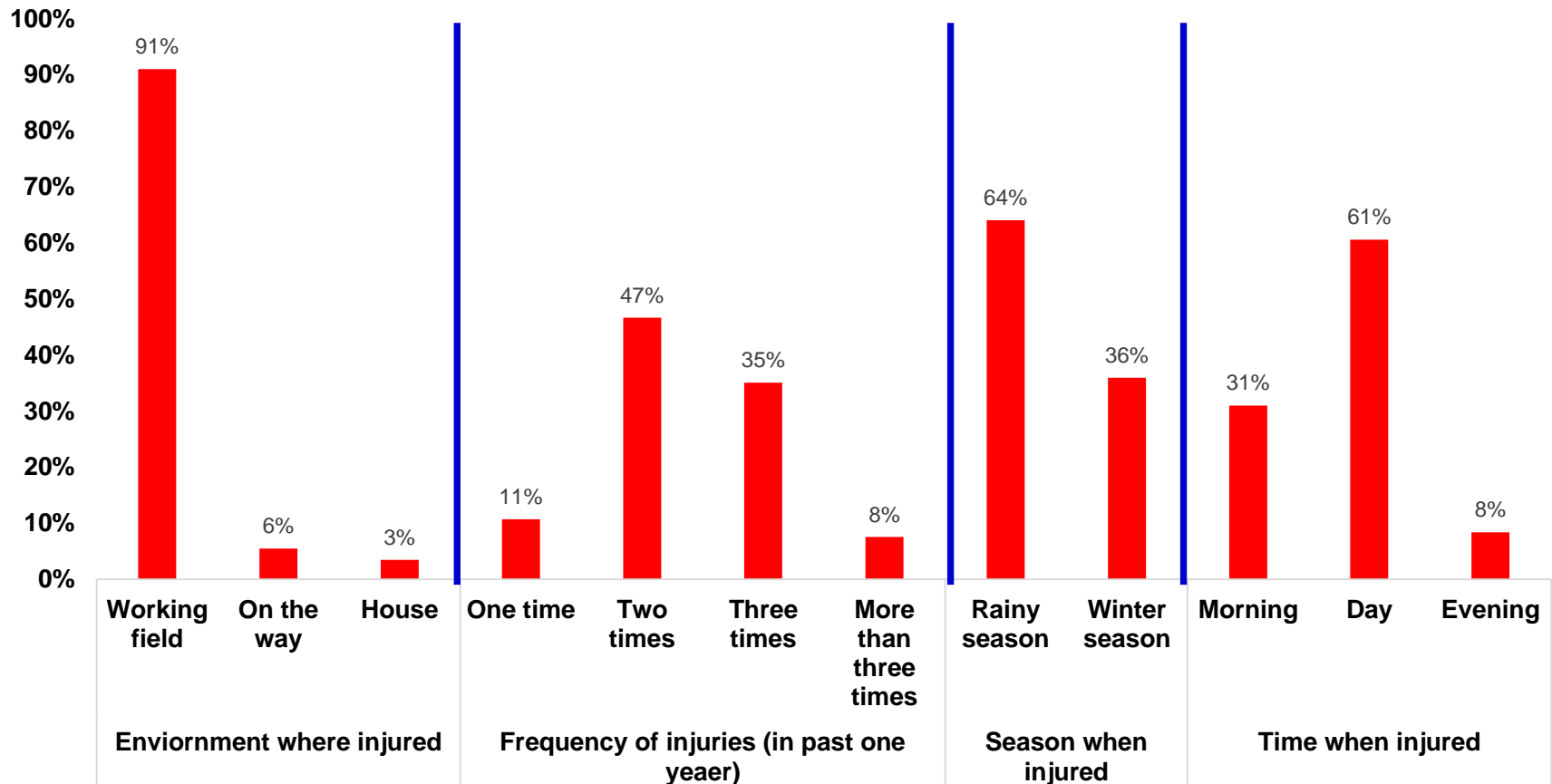


- Around 66% of the total population in Nepal.

* One-third of the nation's GDP.

Prevalence of injuries related to farmers in Nepal

The overall prevalence of work-related injuries among farmers was 69 % in the last 12 months



Mode of injury, type of injuries and body parts injured

Lost work

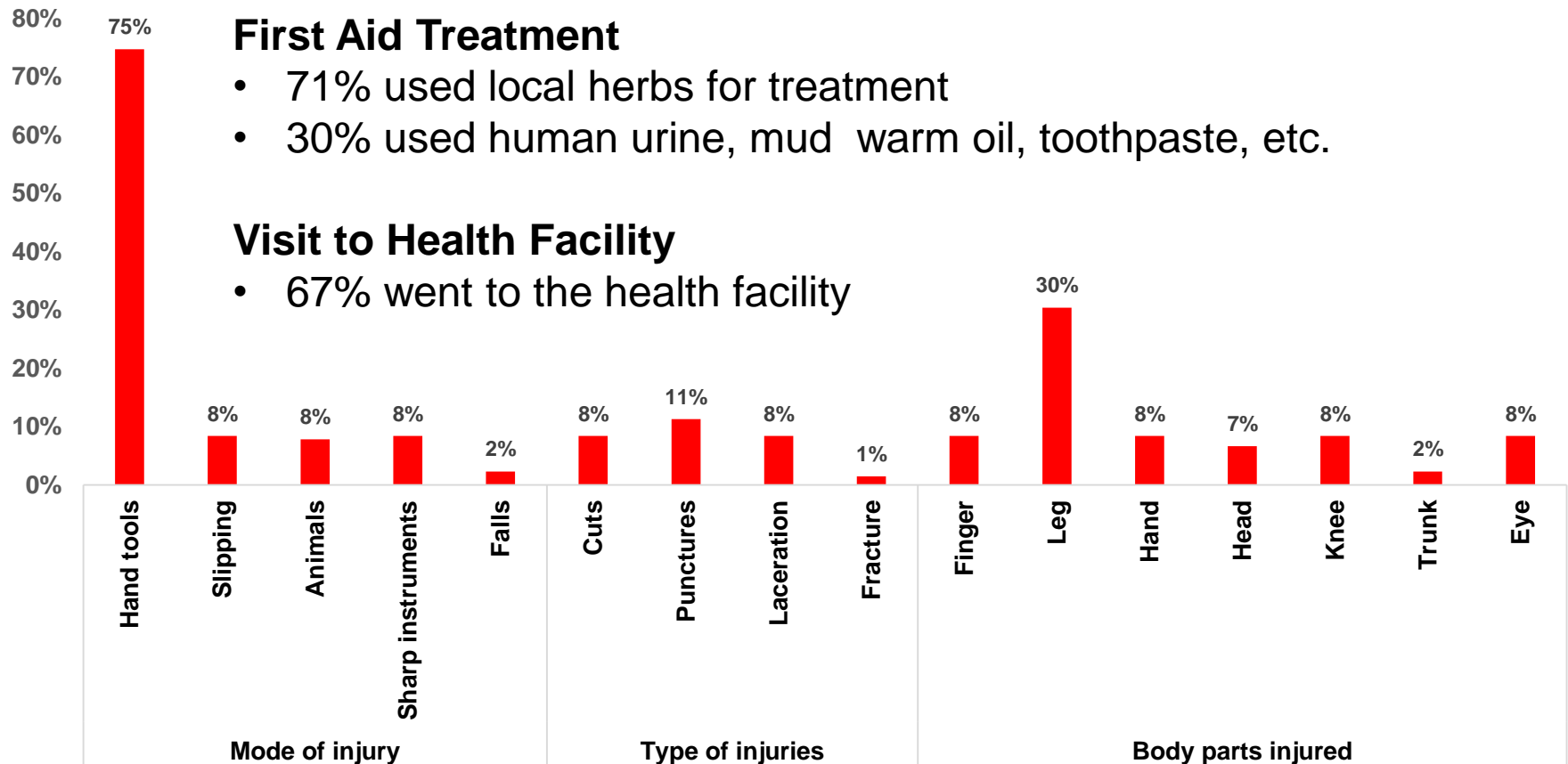
- 64% took some time off
- Mean # of days lost= 11 days

First Aid Treatment

- 71% used local herbs for treatment
- 30% used human urine, mud warm oil, toothpaste, etc.

Visit to Health Facility

- 67% went to the health facility

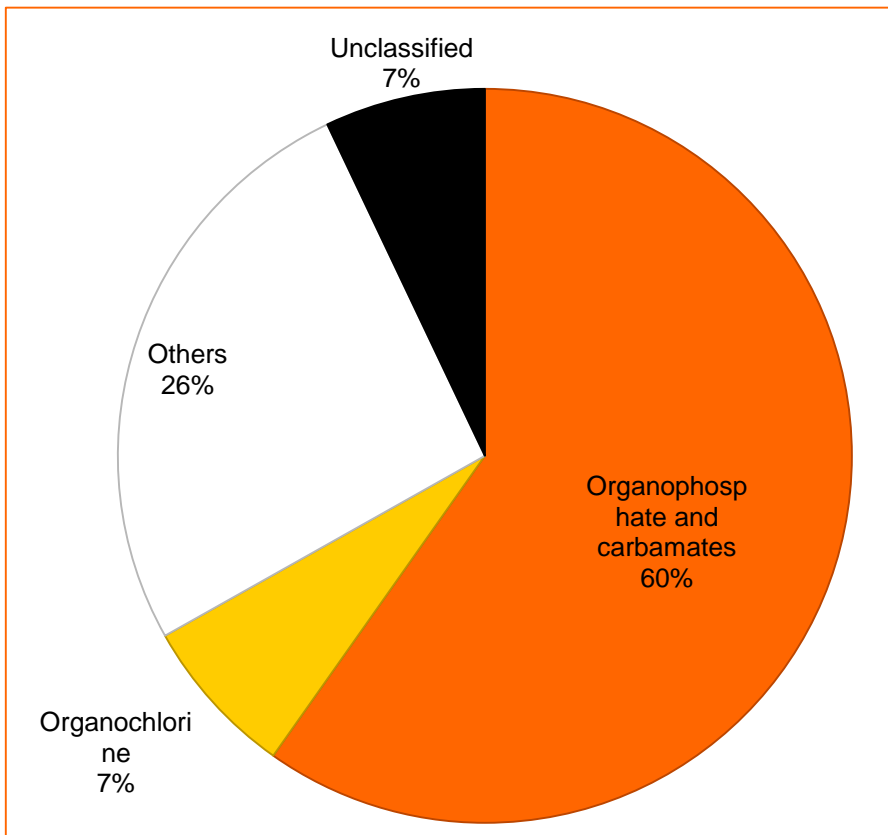


Pesticide Use

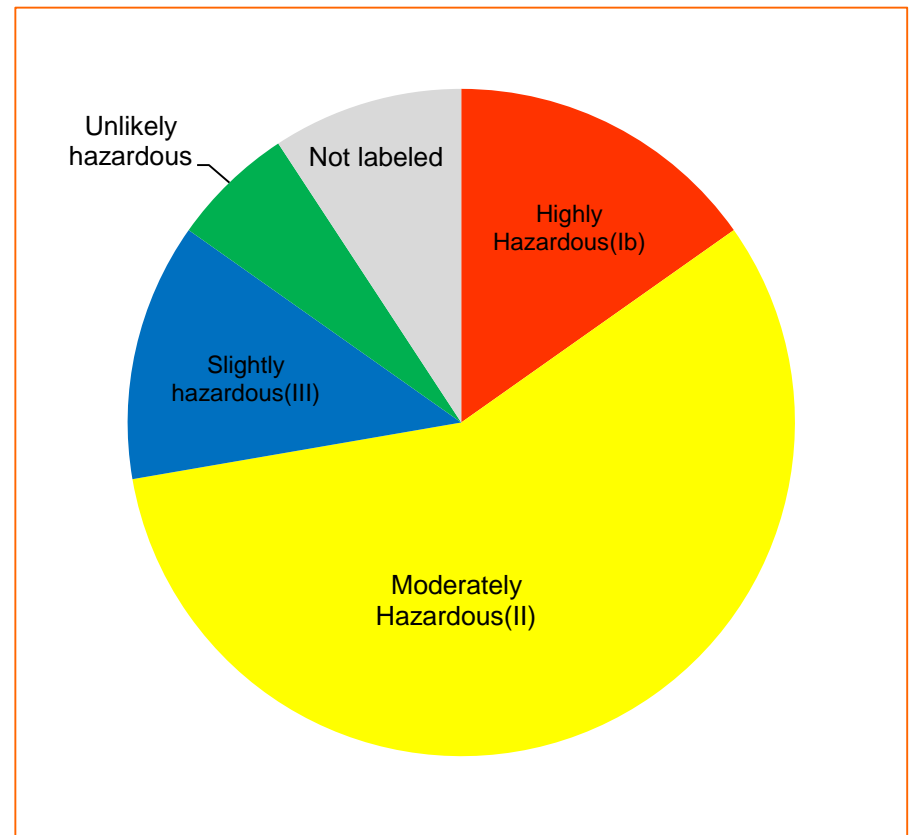


Type of pesticides

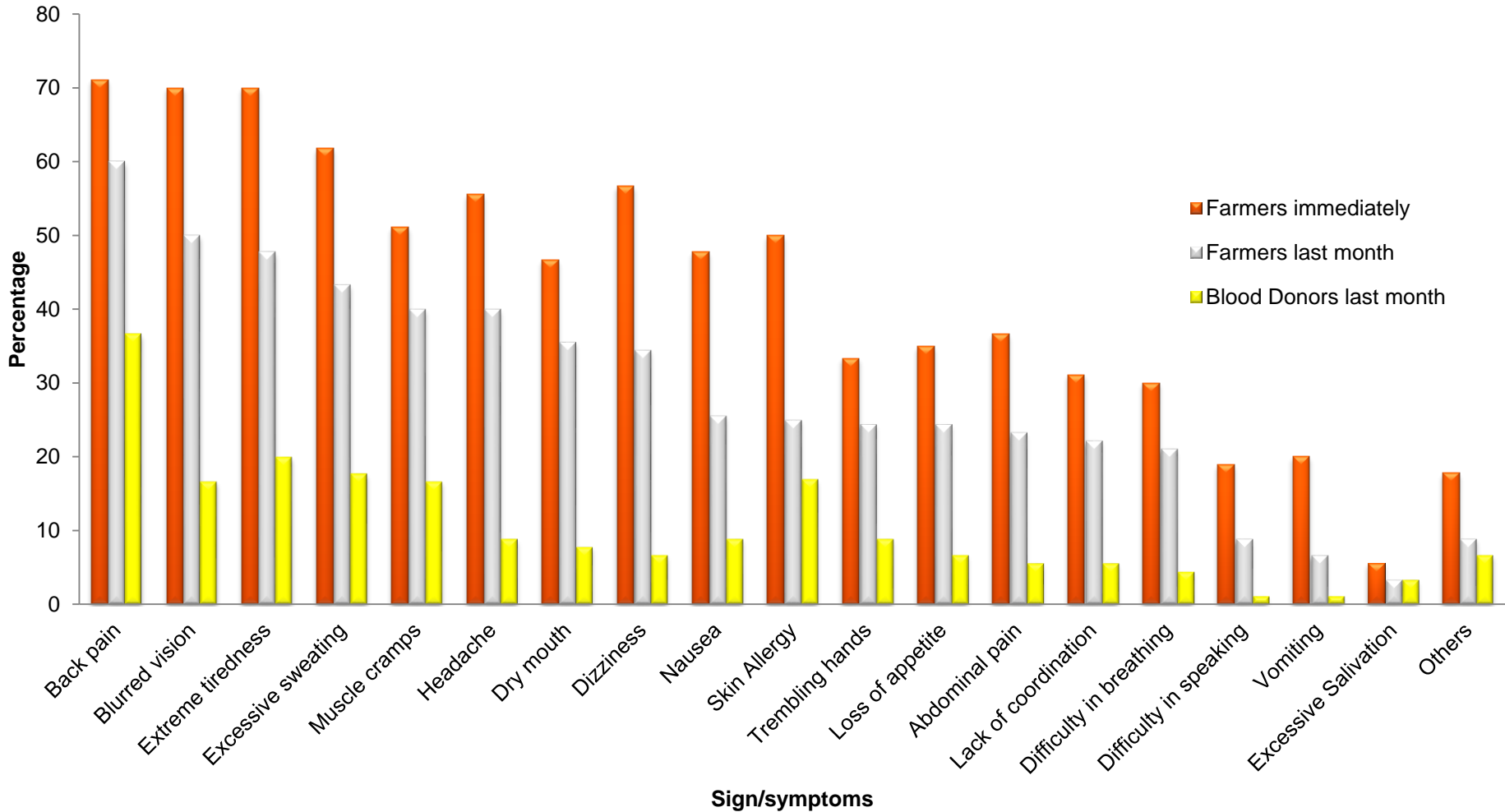
Composition



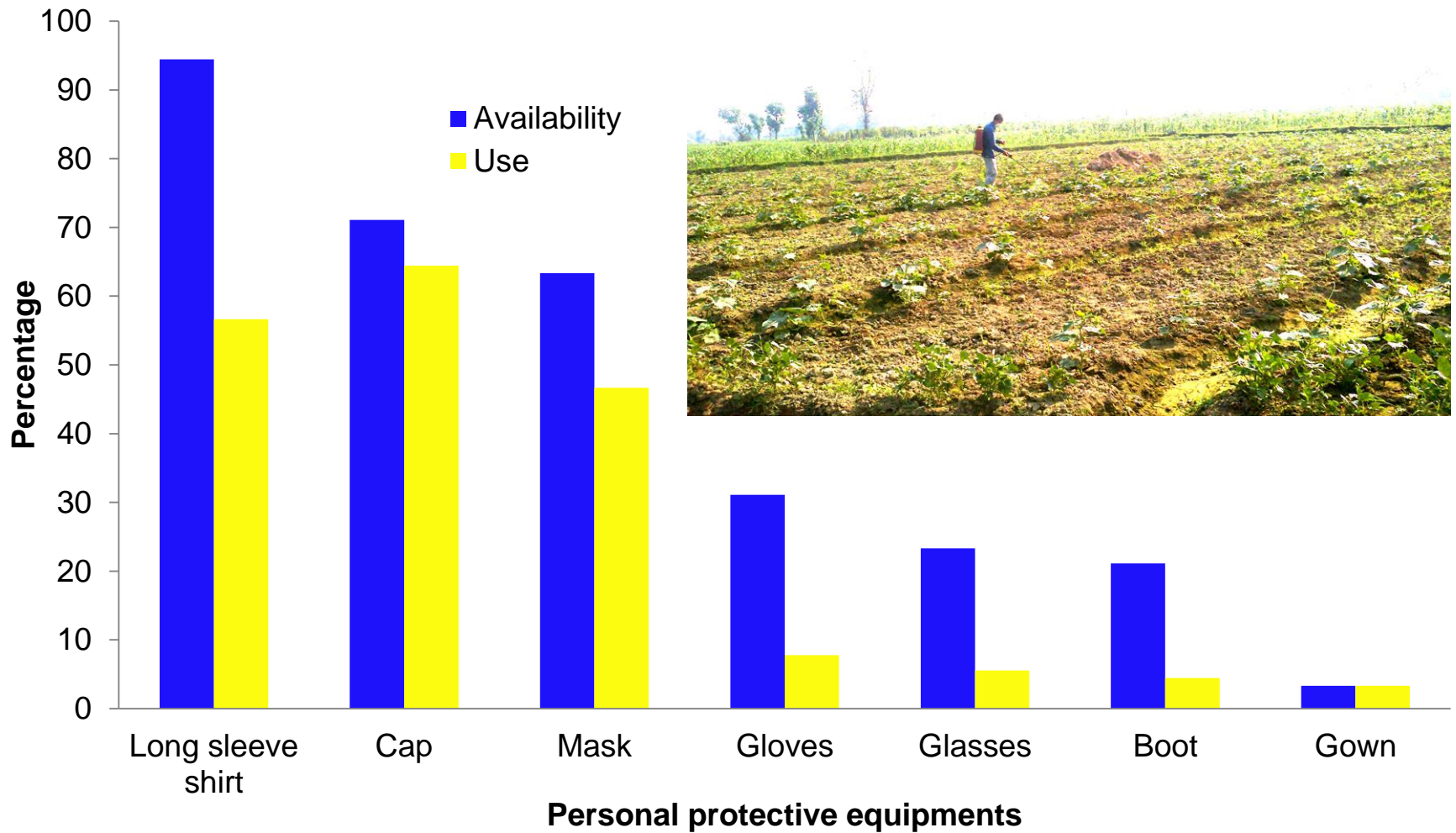
WHO Classification



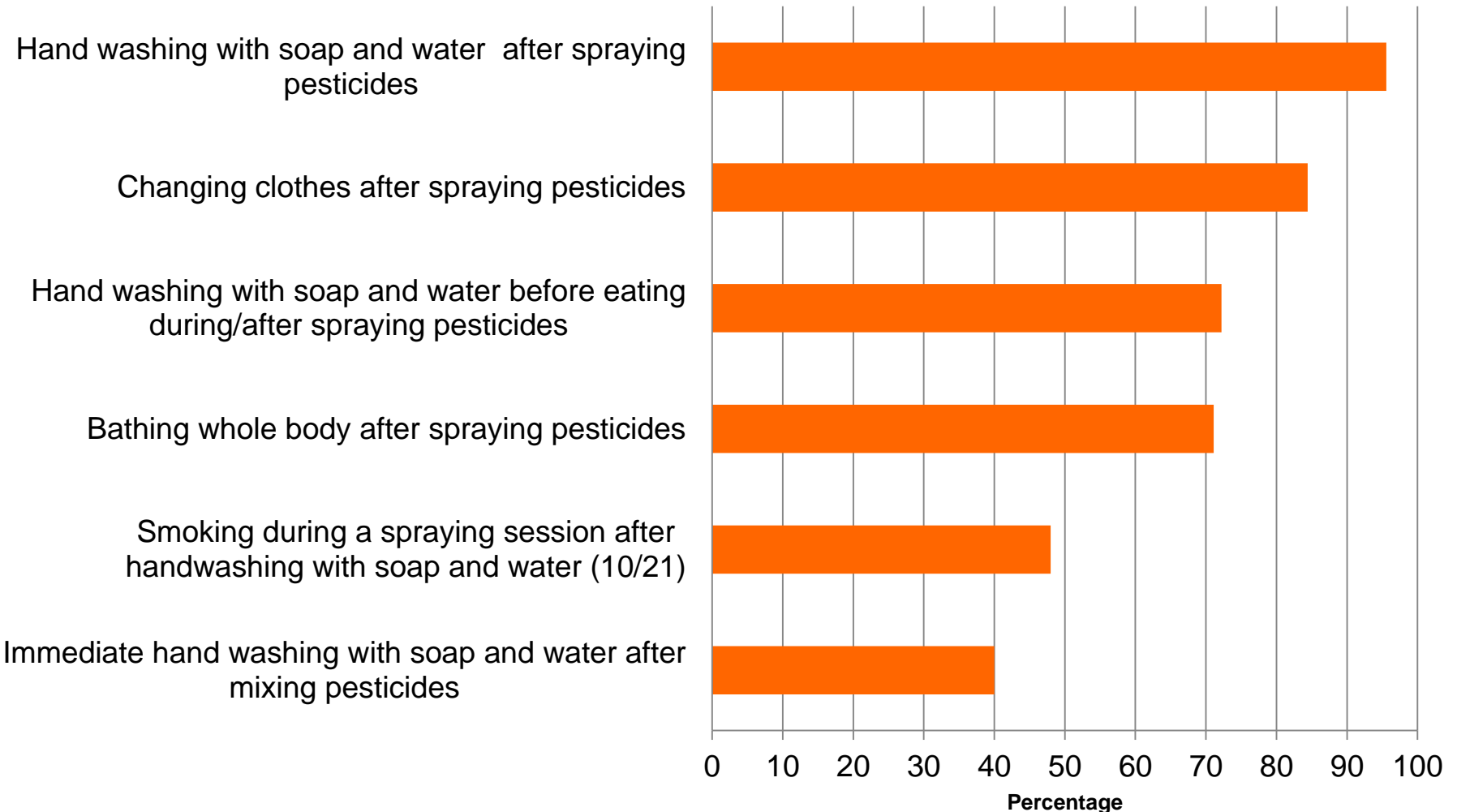
Self-reported sign/symptoms



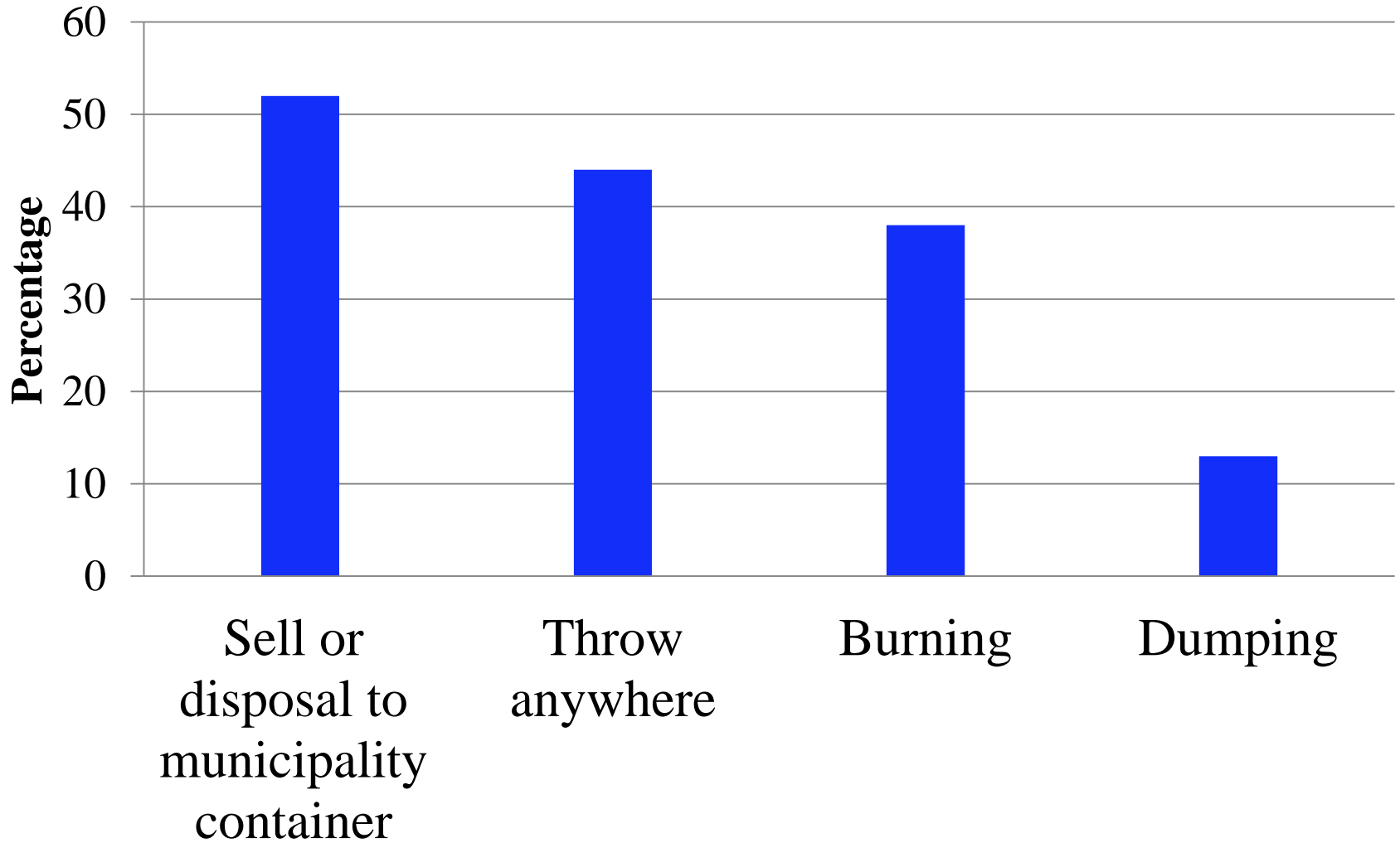
Availability and Use of PPE



Personal hygiene practices (N=90)



Method of disposal



Estimates of pesticide effect on biomarkers

Models	Model I Unadjusted	Model II Adjusted
AChE (U/mL)	-0.294 (-0.445, -0.142)	-0.143 (-0.268, -0.018)
Q (U/g Hgb)	- 1.130 (-1.965, -0.294)	-1.275 (-2.34, -0.200)

Note : Adjusted for Hb, BMI, Smoking, Alcohol, Chronic Illness and Education

Signs/symptoms reported by farmers before and after spraying

VARIABLE	BEFORE SPRAYING (N)	AFTER SPRAYING (N)
Abdominal pain	0	1
Blurred vision	2	8
Breathing difficulties	1	3
Difficulty in speaking	1	1
Dizziness	3	3
Dry mouth	1	8
Excessive salivation	0	0
Excessive sweating	1	8
Extreme tiredness	1	7
Headache	0	3
Lack of coordination	1	1
Loss of appetite	0	1
Muscle cramp	1	2
Nausea	0	0
Others	1	2
Skin allergy	2	3
Trembling hands	1	4
Vomiting	0	0

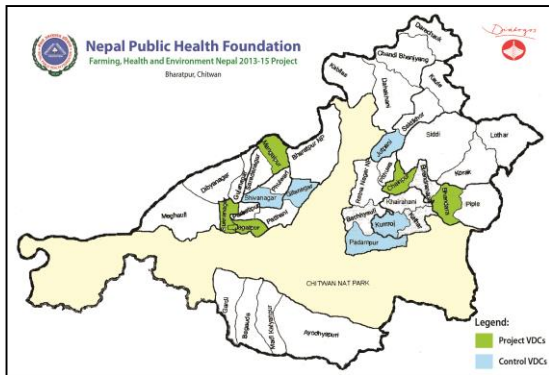
Comparison of biomarkers before and after spraying (N=25)

	BEFORE SPRAYING	AFTER SPRAYING	P VALUE
Mean PChE (SD)	1.41 ± 0.59	1.29 ± 0.54	.0548
Mean haemoglobin (SD)	12.59 ± 1.27	11.93 ± 1.39	.0049

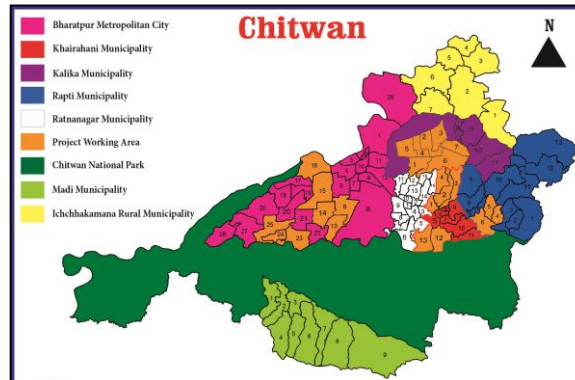
Abbreviation: PChE, plasma cholinesterase.

Farming, Health and Environment Project

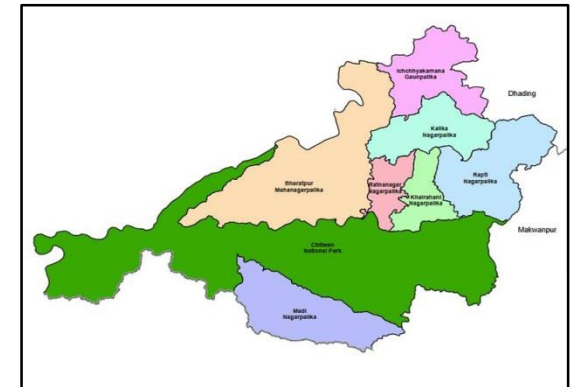
Phase I (2013-2015)



Phase II (2017-2020)

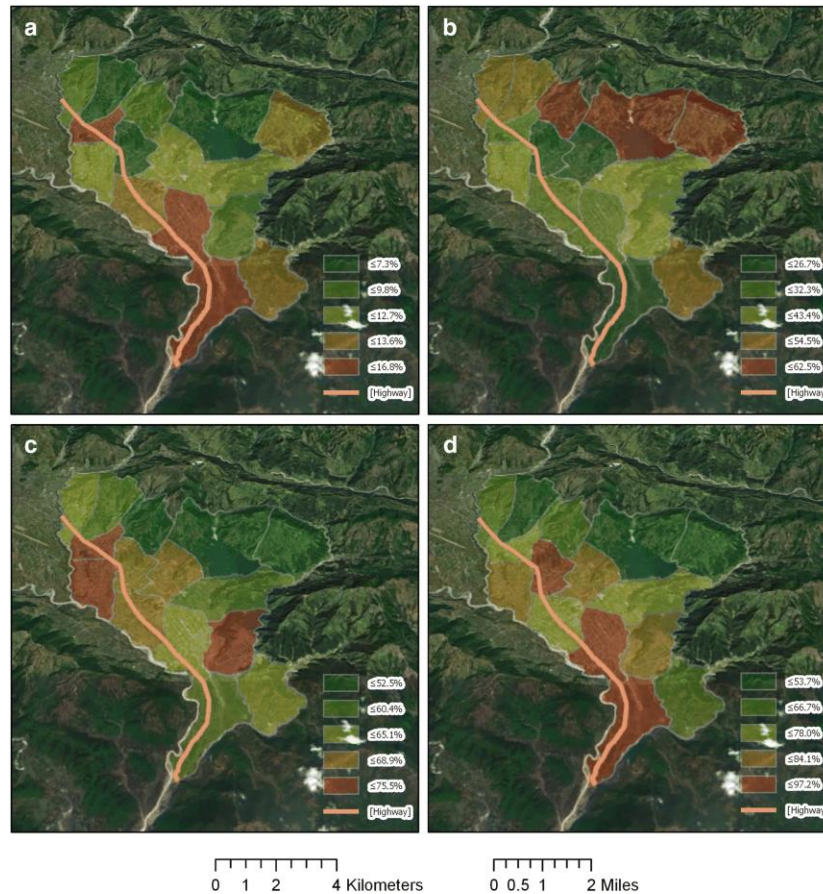


Phase III (2021-2024)



Pesticide and diabetes

Adjusted Odds Ratio
0.68 [0.52; 0.90]



Satellite image sources: Esri, DigitalGlobe, GeoEye, Earthstart Geographics, CNES/Airbus DS, USDA, USGS, AeroGrid, IGN and the GIS User Community. Administrative areas and road source: National Geographic Information Infrastructure Programme (Kathmandu, Nepal)

Spatial distribution of diabetes mellitus and pesticide exposure in the study area. **a** Percentage of diabetics. **b** Percentage of farmers. **c** Percentage of pesticide-exposed participants (out of all participants). **d** Percentage of pesticide-exposed participants (out of farmers only). Categories are quintiles. To better show what is lowlands and highlands, elevation was exaggerated by a factor of 2.

CKDnt



Coordinate to Protect Workers



Thank You