

# No Shit!

## Priorities for sanitation and hygiene in Peru

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# Shit, with flies



# Faecally-transmitted infections (FTIs)

## [Chambers & von Medeazza, 2014]

Diarrhoea: 509,000 <5yr deaths/year (2015)

*“The visible tip of the FTI iceberg”*

Soil-based helminths (roundworm, whipworm & hookworm)

Trachoma

Schistosomiasis: >200m affected, mostly children; 20m with severe consequences.

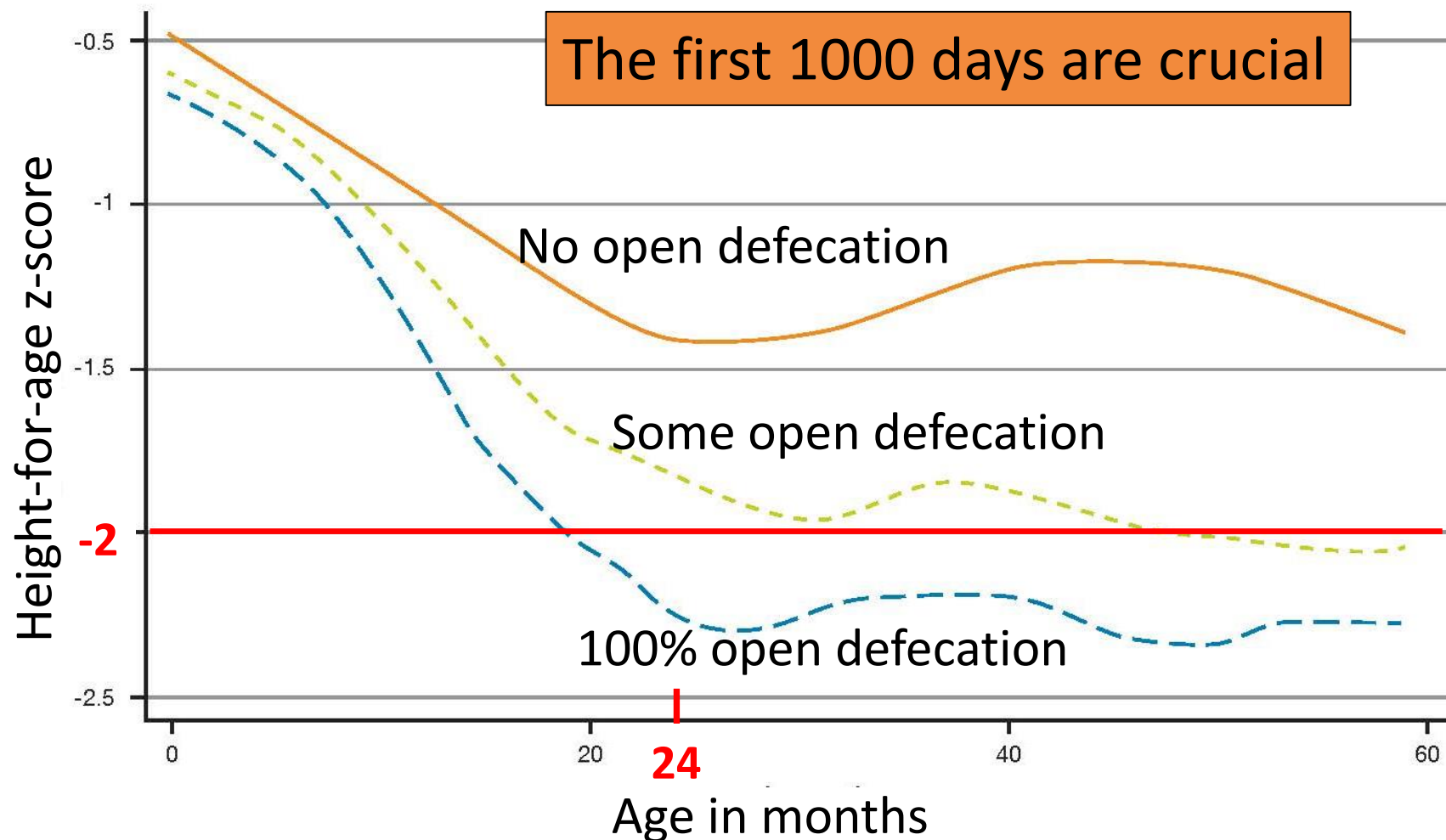
Plus: Hepatitis A, B & E, giardia, poliomyelitis ...



# Environmental enteric dysfunction (EED)



# Stunting and open defecation

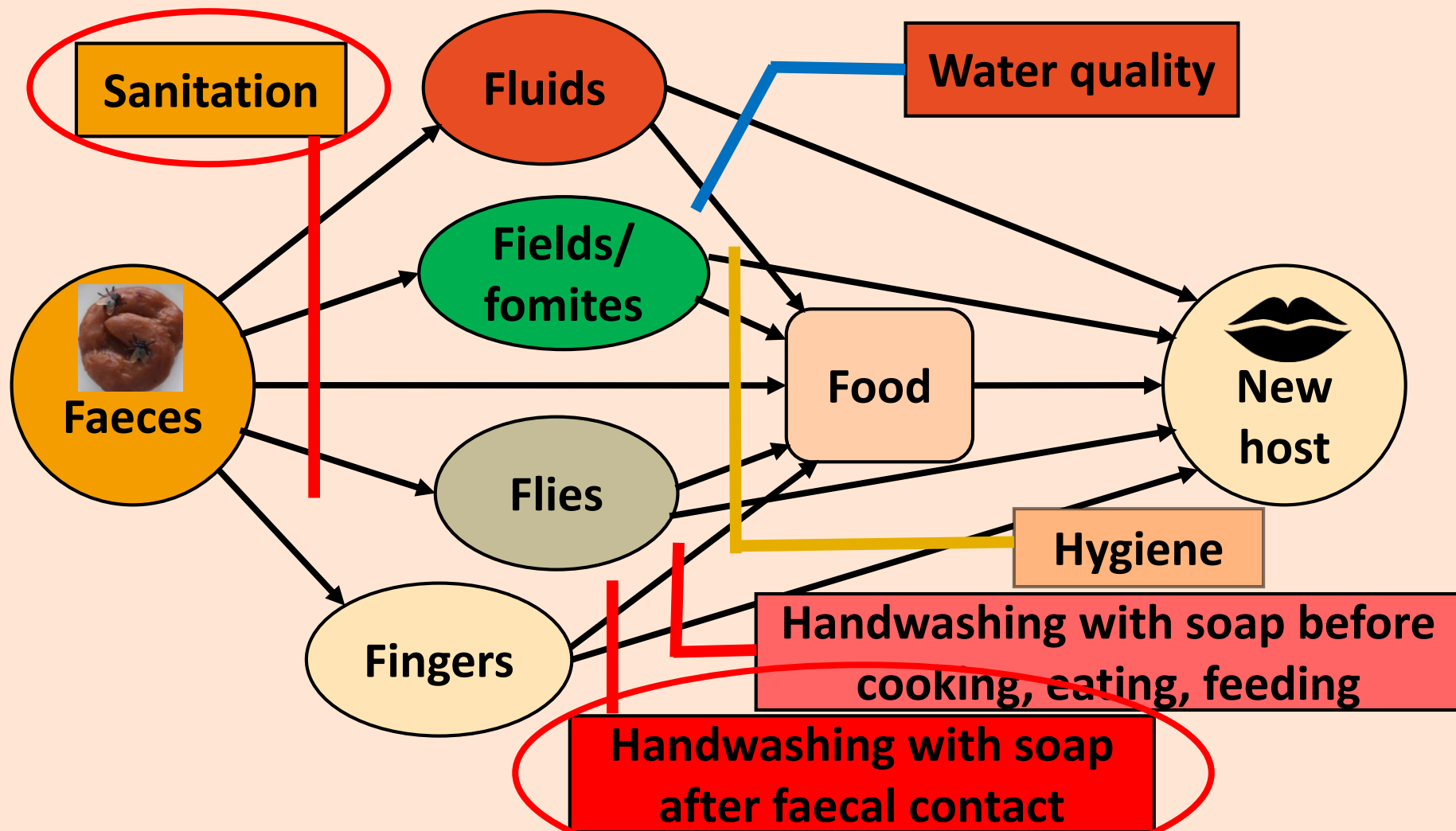


# Child stunting (World Bank, 2019)

Stunting in pre-schoolers (%)				
	All pre-schoolers		Poorest quintile	GDP per capita PPP (\$)
	2000	2017	2017	2018
Global	33	22	45	17,914
Latin America & C	17	10	24	16,583
Peru	31	13	29	14,393
India	54	38	51	7,762

# The F-diagram : faecal-oral disease transmission

(Wagner & Lanoix, WHO, 1958)





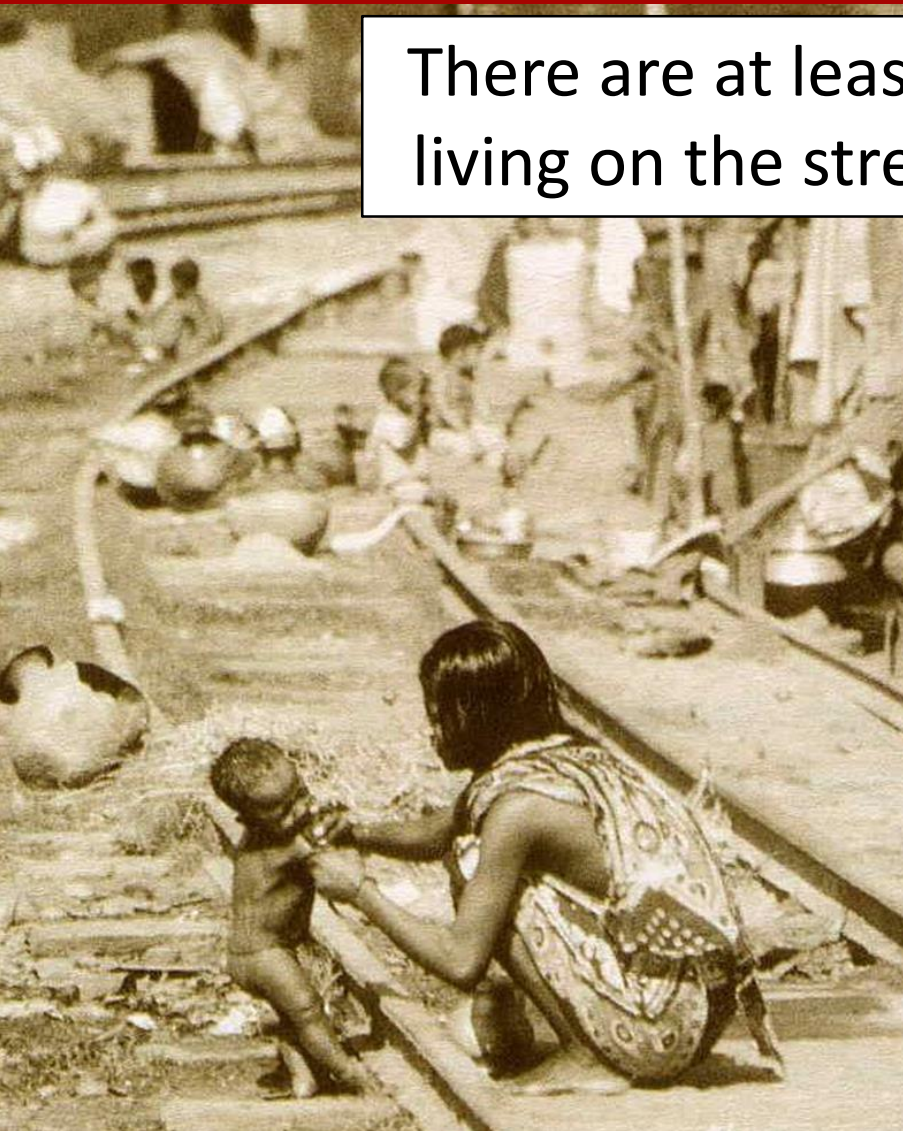
# Social impacts of inadequate sanitation



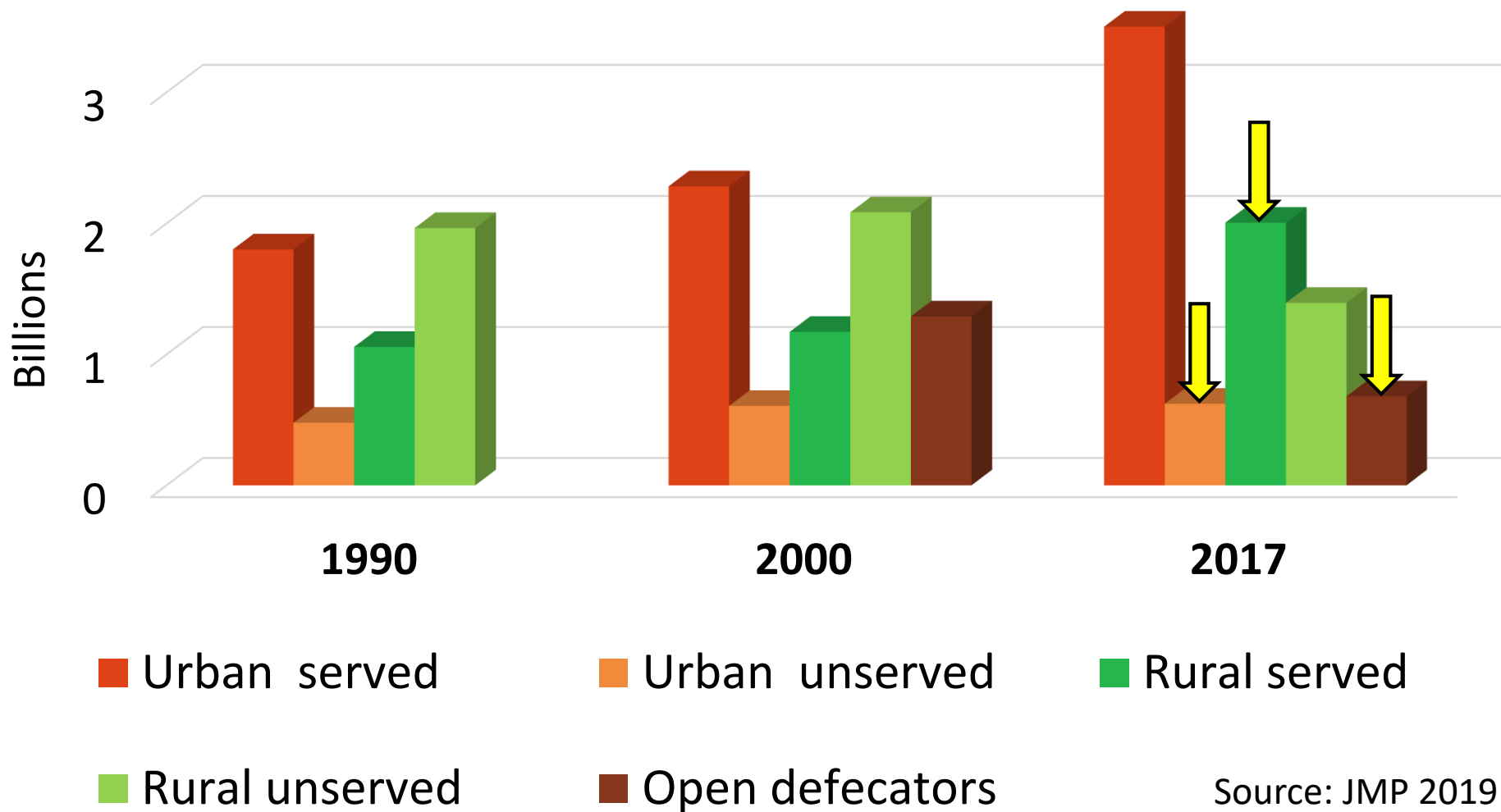


# Social impacts of inadequate sanitation

There are at least 100 million people living on the streets and pavements.



# Global sanitation coverage





# Open defecation

	Global	India	Peru	LAC
2000	1290m			
2017	679m (9%)			

Data from JMP 2019

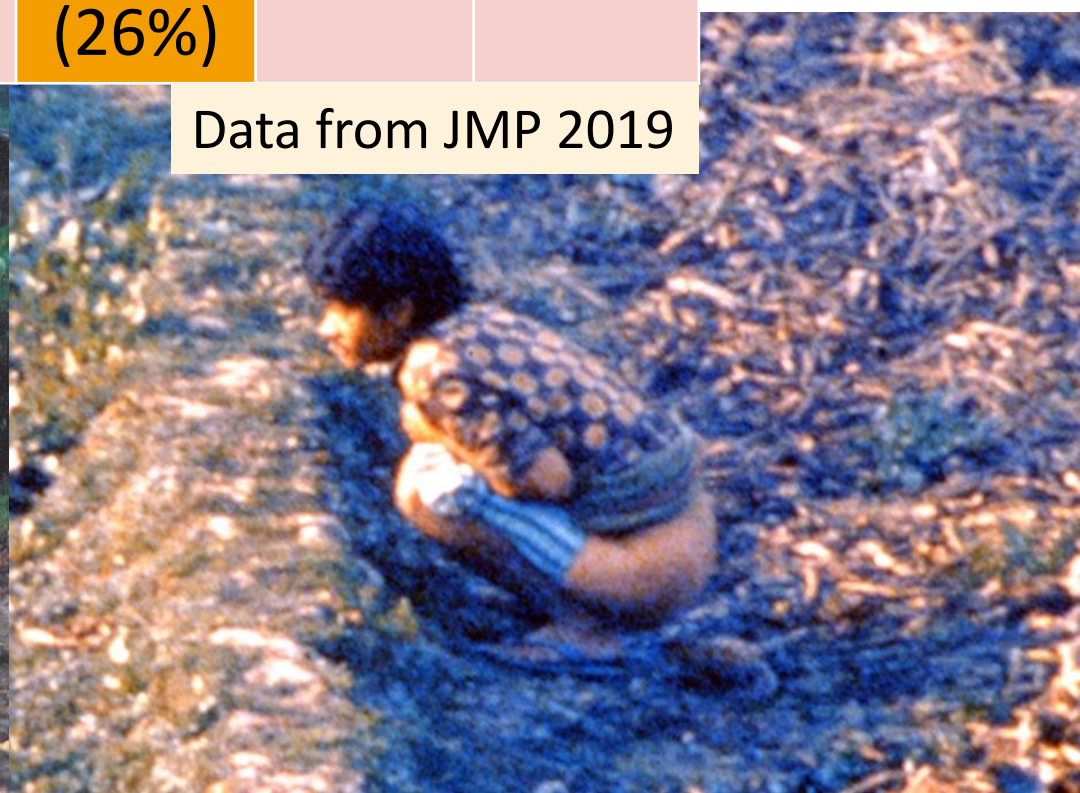




# Open defecation

	Global	India	Peru	LAC
2000	1290m	768m		
2017	679m (9%)	348m (26%)		

Data from JMP 2019

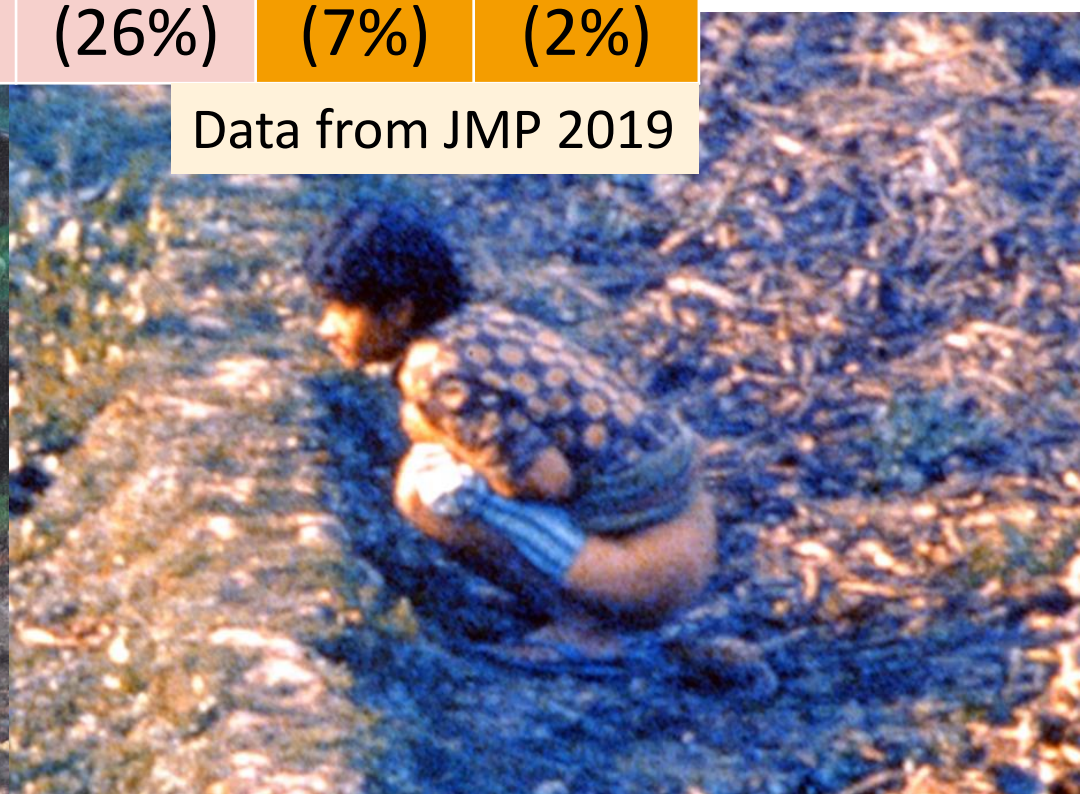




# Open defecation

	Global	India	Peru	LAC
2000	1290m	768m	4.7m	53m
2017	679m (9%)	348m (26%)	2.3m (7%)	13m (2%)

Data from JMP 2019





# India and open defecation

Urban India, 2017:  
5% open defecation = 23m





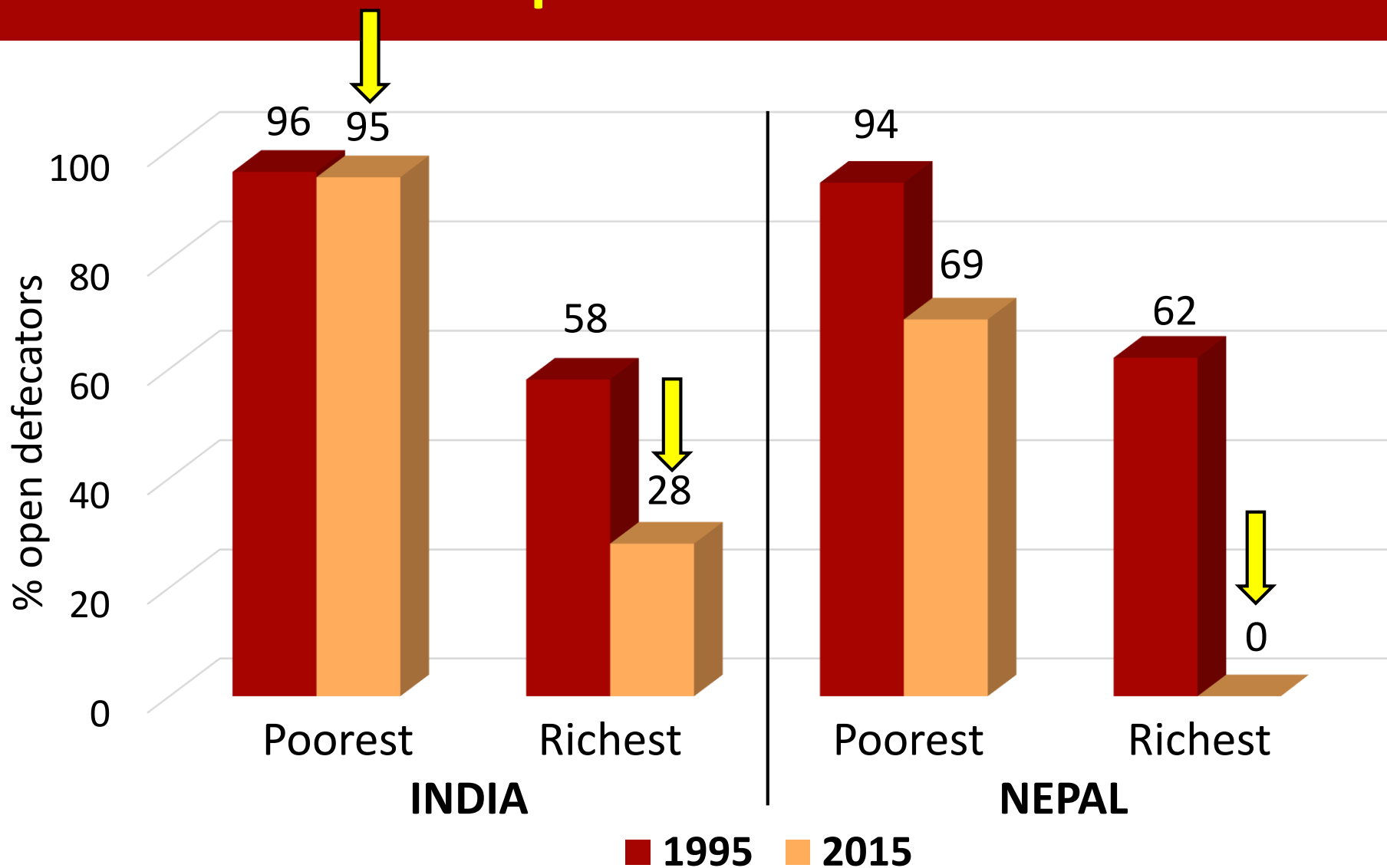
# India and open defecation

*“The real problem is promoting a social demand for initial and sustained toilet use. It would be like telling Americans or Europeans that they should now defecate in the street. We’re overlaying our belief system, norms and mindsets on others; this is a very complex development scenario.”*

Sue Coates, UNICEF WASH Chief in India.



# Open defecation



# Behaviour change

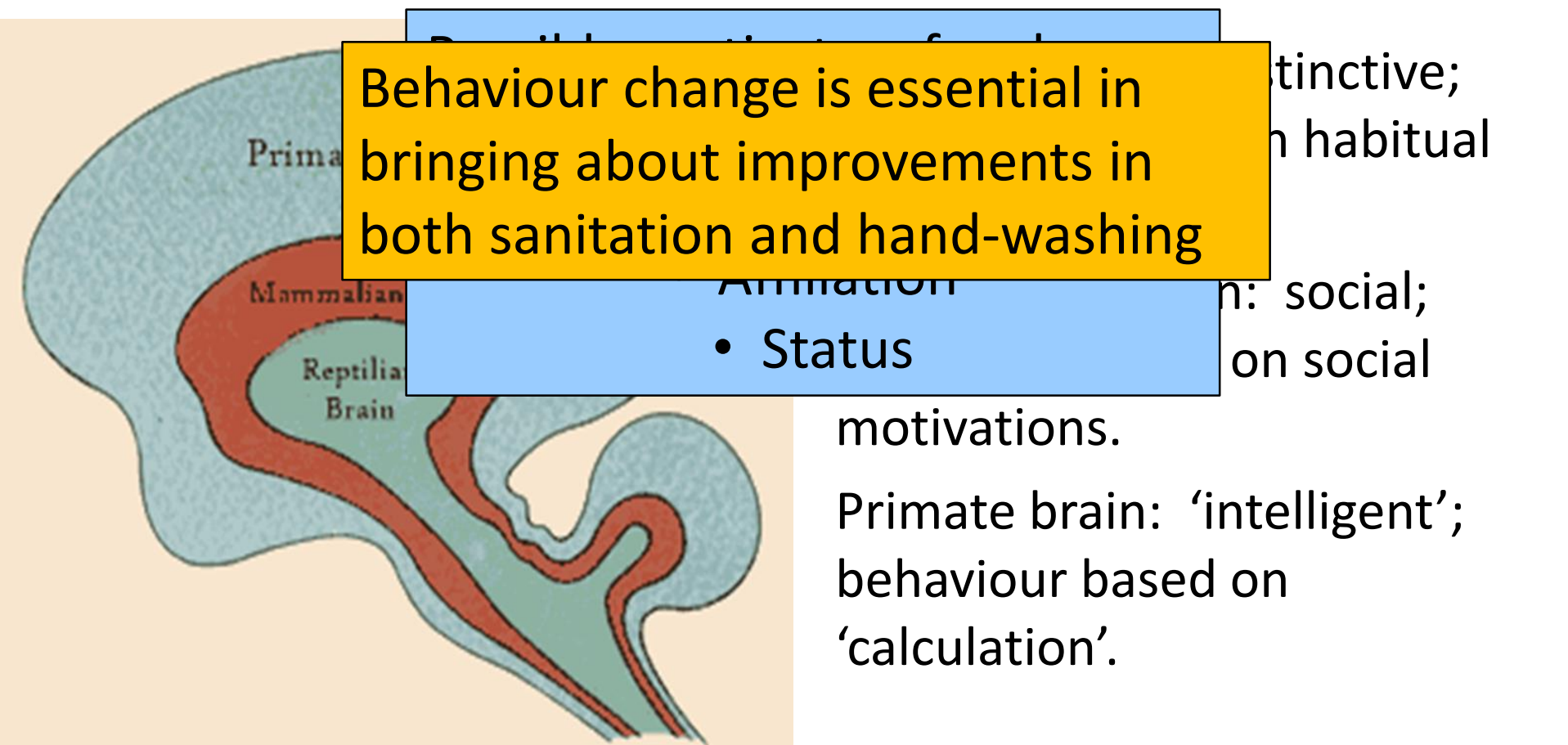
Moving someone, or a group, to a place where they think, feel and act differently.

Behaviour change is essential in bringing about improvements in both sanitation and hand-washing

- Status

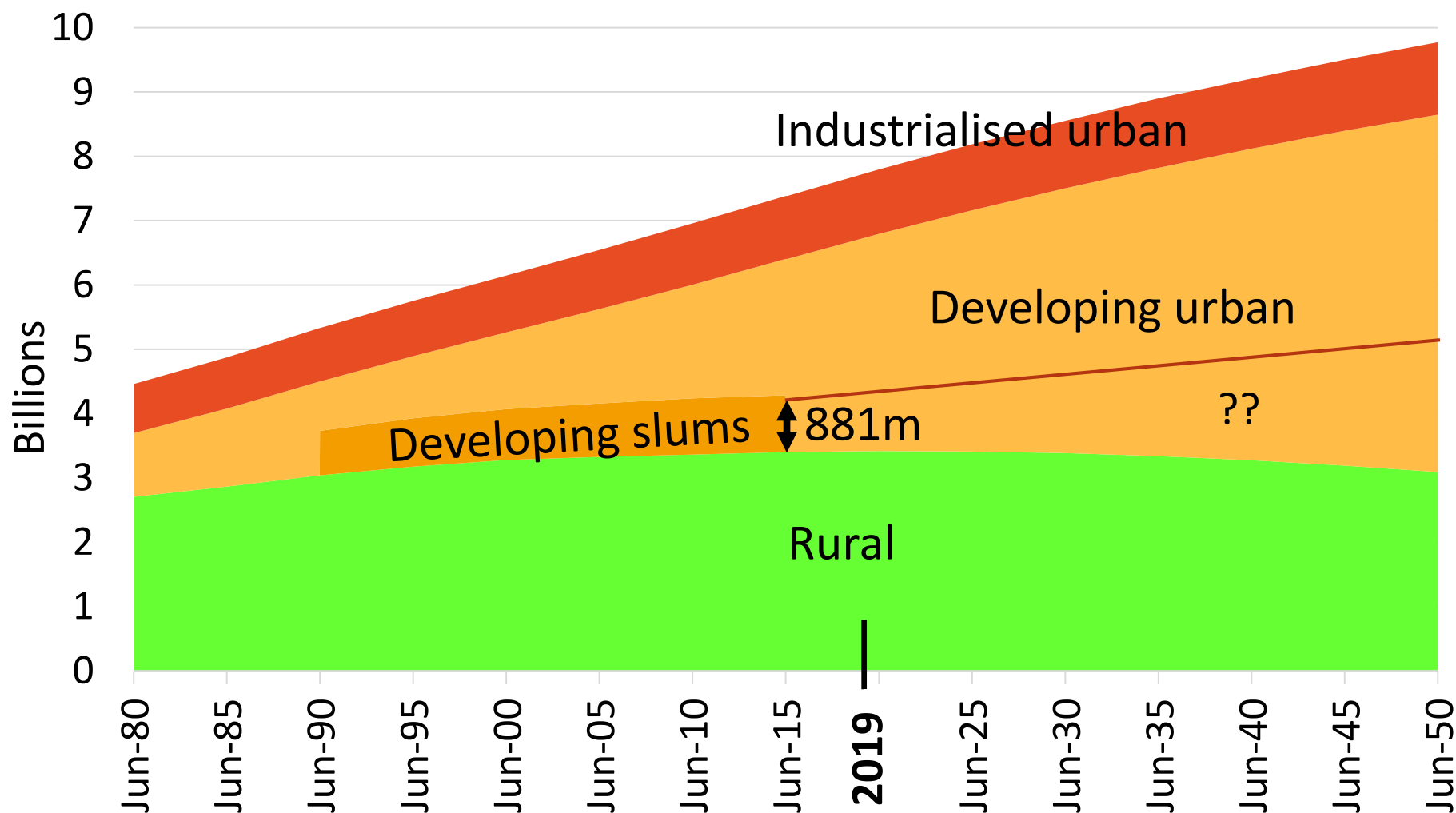
motivations.

Primate brain: 'intelligent'; behaviour based on 'calculation'.

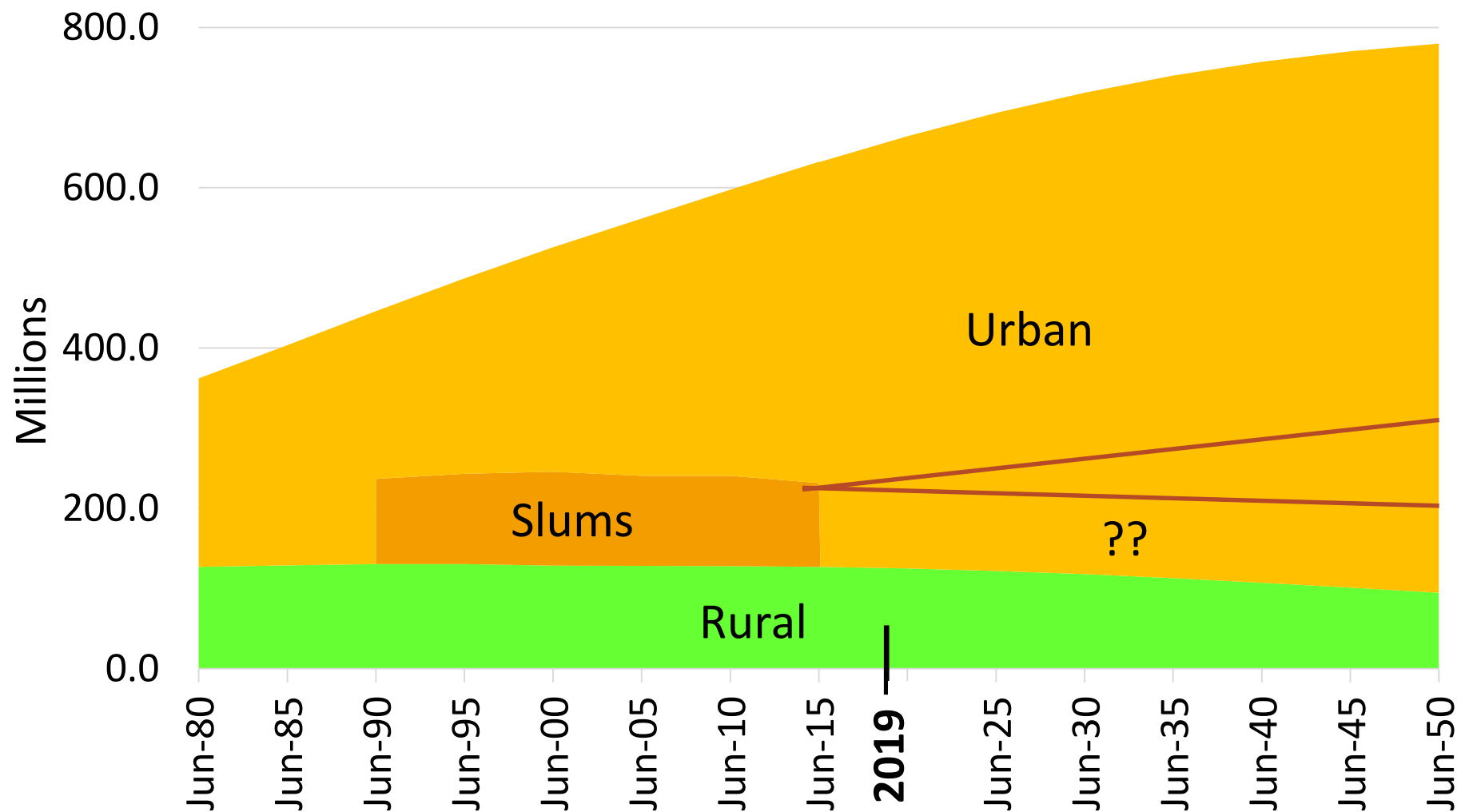




# A developing urban world

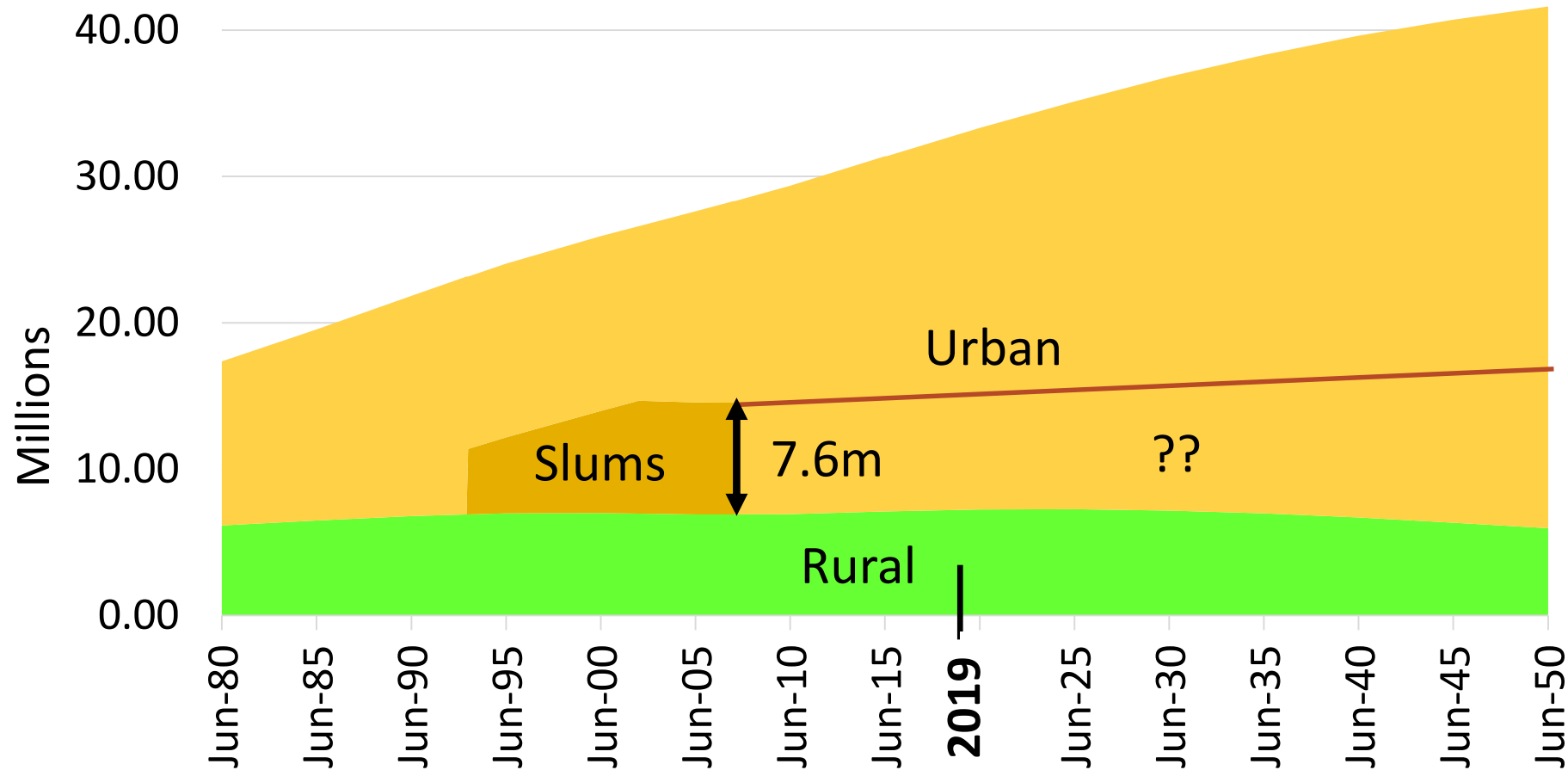


# Urbanizing Latin America



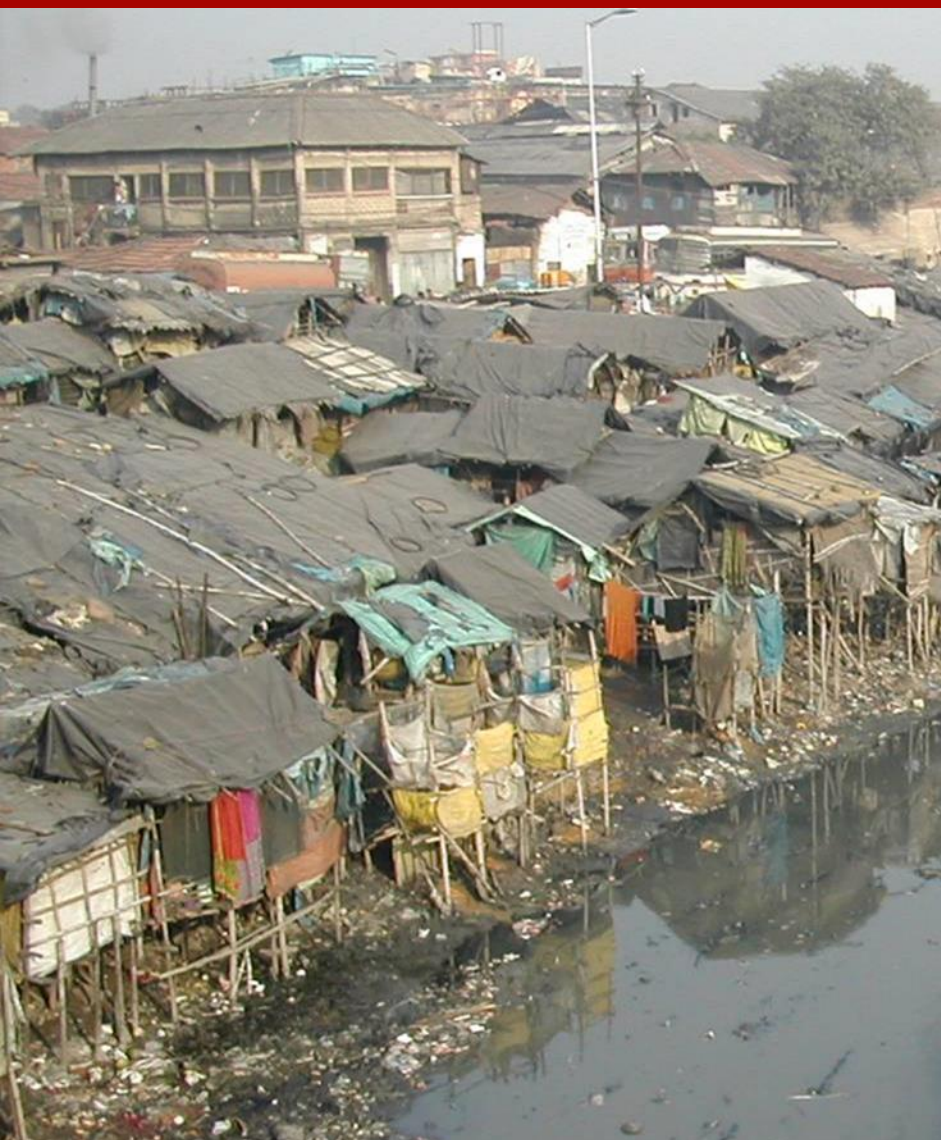


# Urbanizing Peru



Source: Calderón et al. 2015

# Poor health in slums





# Poor health in slums

Health in slums (Ezeh et al., & Lilford et al., 2016):

• “Diarrhoea and pneumonia are the two main killers of under-5s in slums.”

Health in slums in India (Pörtner & Su, 2017):

- “In terms of height-for-age averages ... slum children fare significantly worse than their rural counterparts ... and girls suffer worse than boys.”
- “Slum conditions amplified the spread of Ebola in West Africa.”
- “Overcrowding contributes to the high prevalence of TB.”
- “Young, highly mobile populations in slums contribute to the higher incidence of HIV.”
- “High rates of under-nutrition and food insecurity are found in slums (85% in Nairobi, 77% in northern India, 74% in Addis Ababa), associated with recurrent diarrhoea and stunting.”
- “Breast-feeding rates are low in slums.”



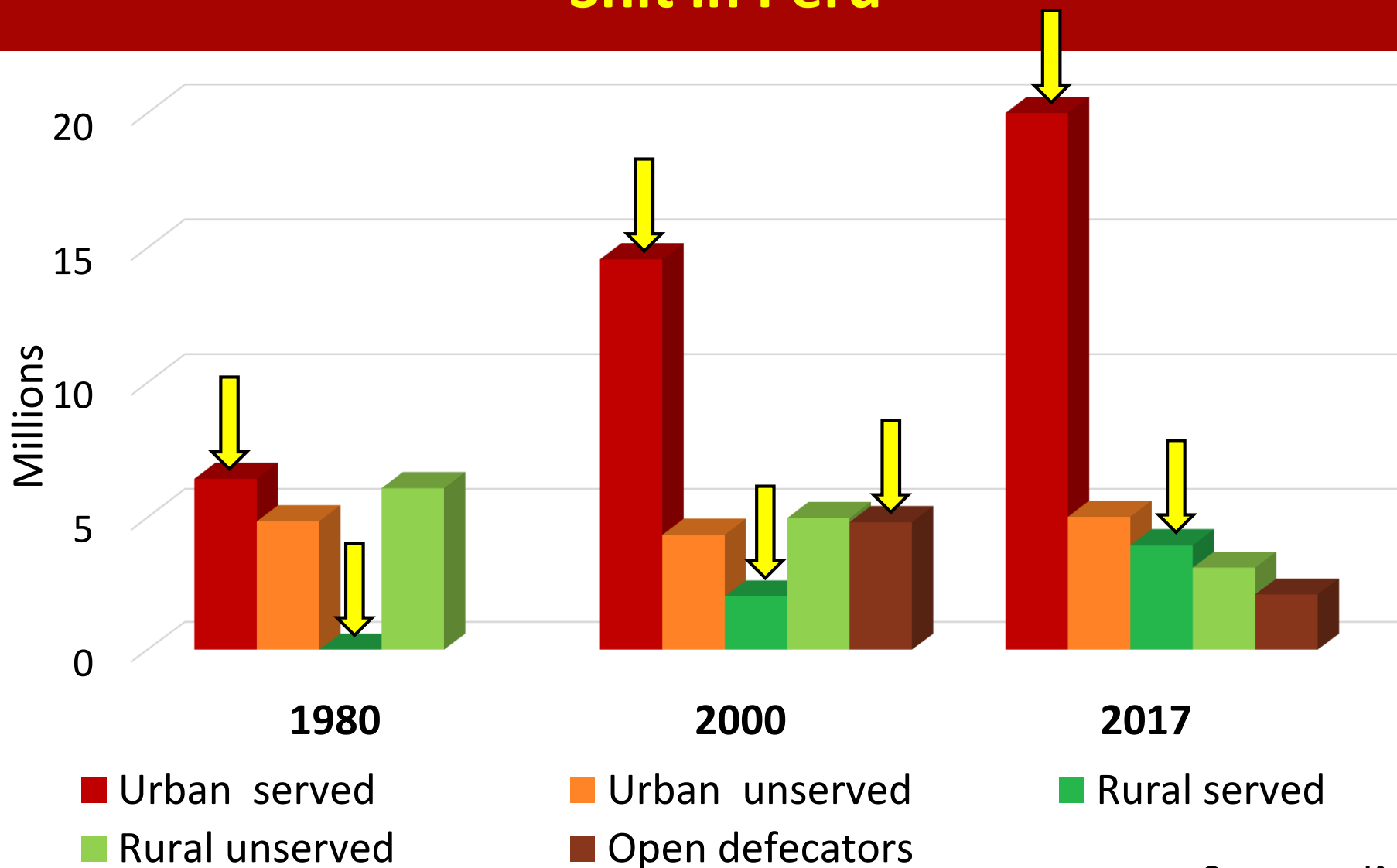
# Poor health in slums

These papers, amongst others, stress:

- The need for much more research on child health in slums;
- And for more research on the health improvements deriving from WaSH improvements in slums.
- The ongoing SaniPath studies (Robb et al. 2017) should provide very useful information on faecal exposure pathways.

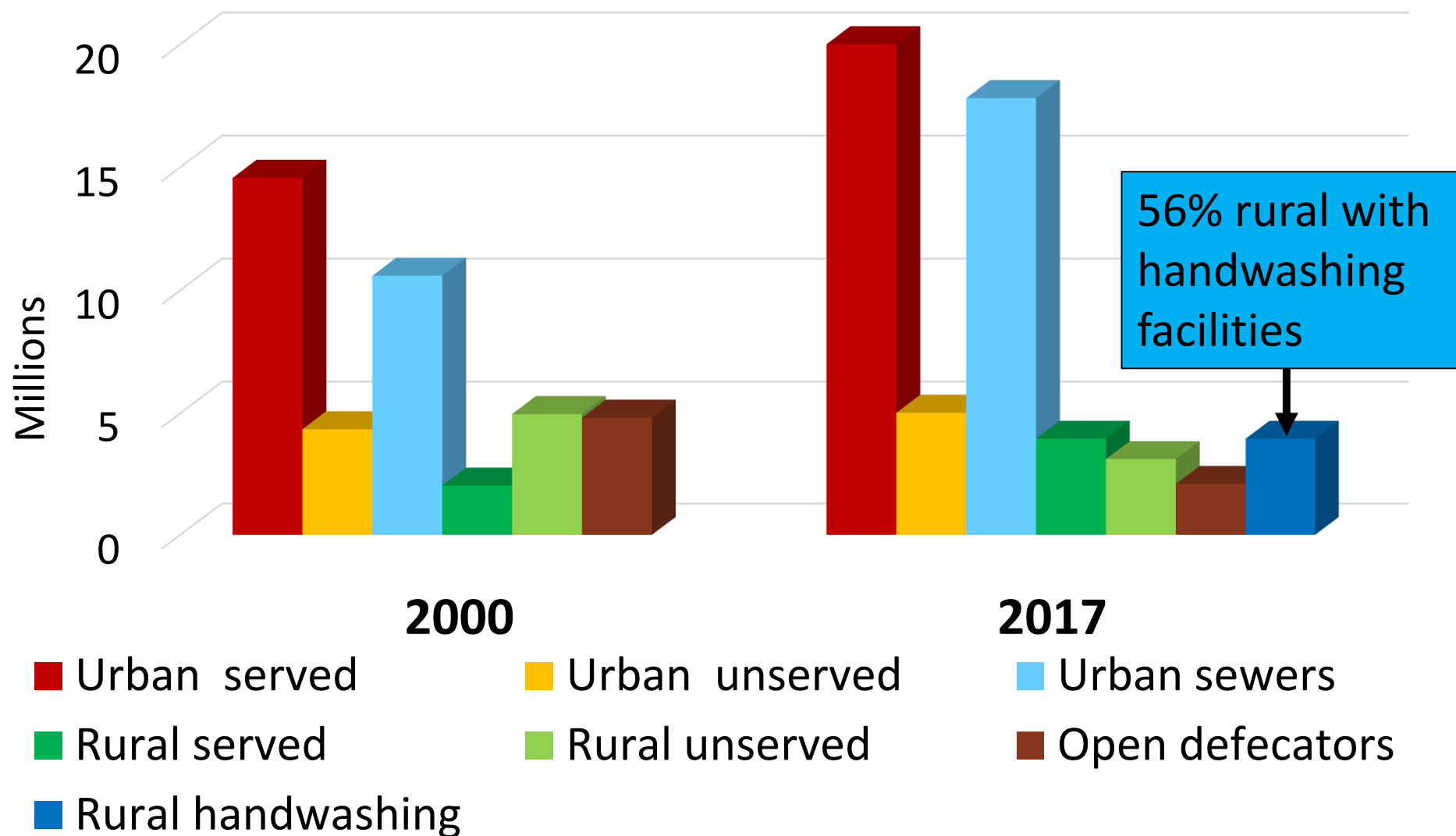


# Shit in Peru



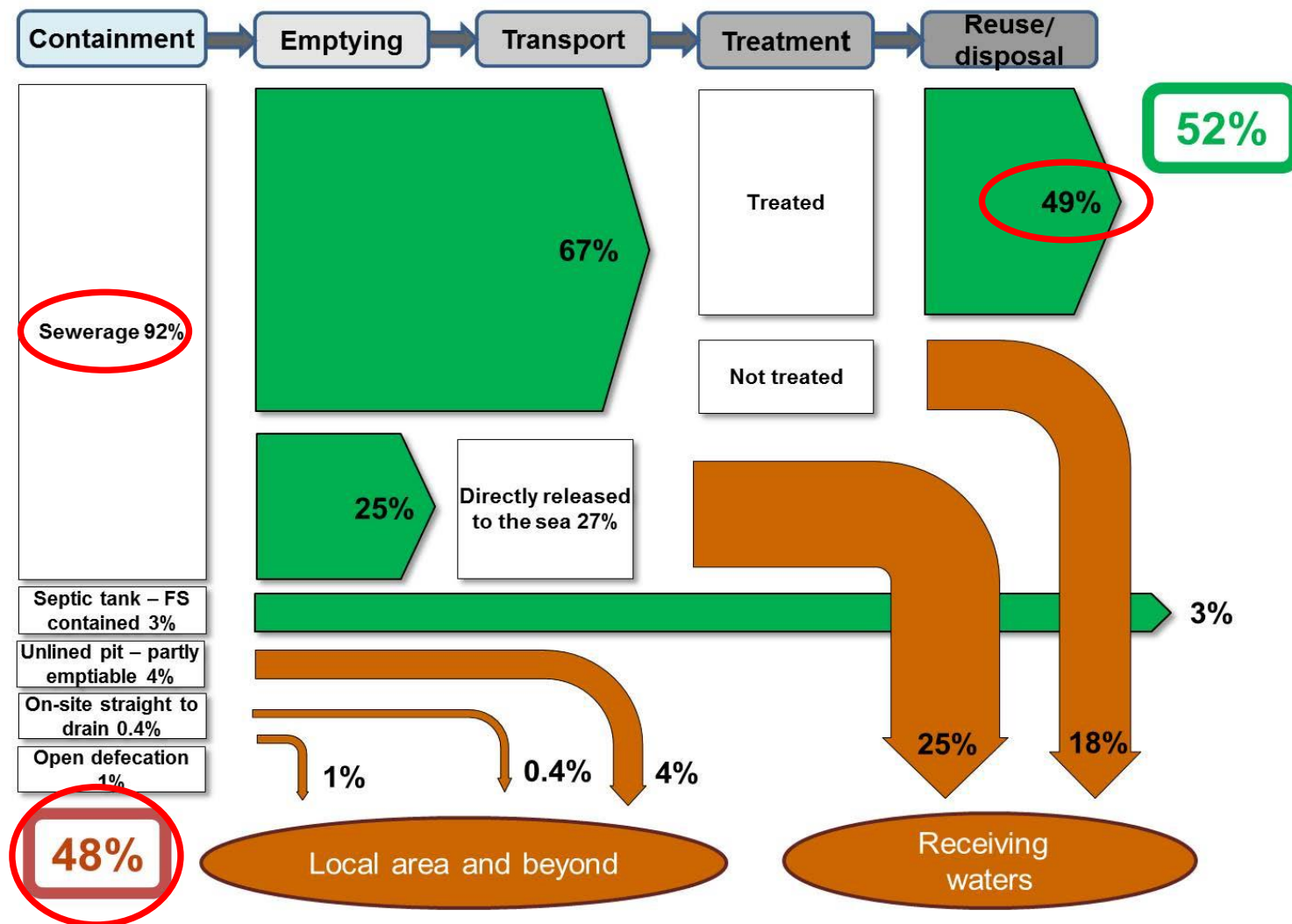
Source: JMP

# Shit in Peru

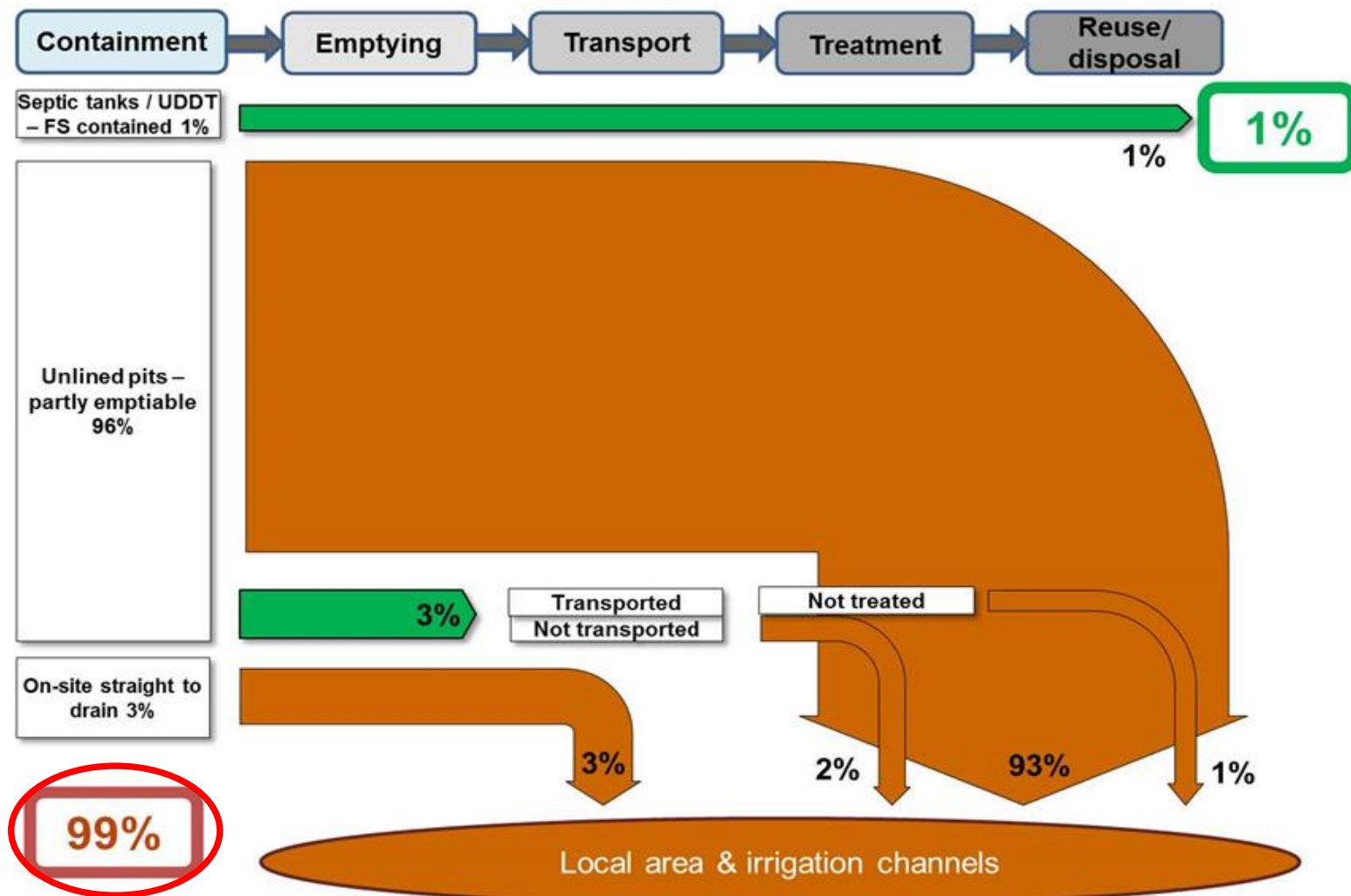




# Lima: Shit flow diagram, city-wide (WSP, 2016)



# Lima: Shit flow diagram, non-sewered (WSP, 2016)



# Shit in Peru

There are currently 25 million urban Peruvians:

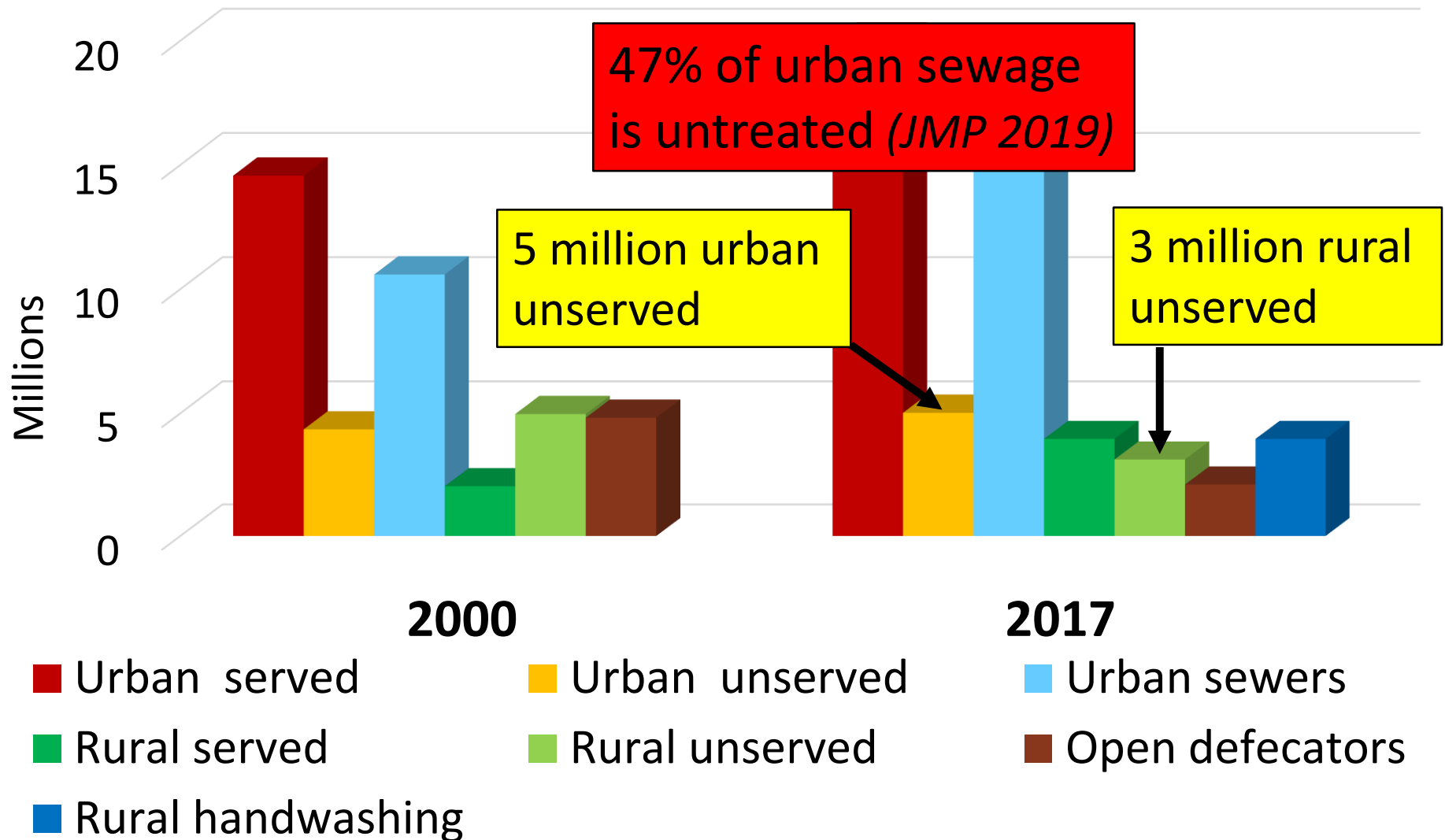
- Of whom 18 million are served by sewers; 7 million are not.
- 11 million are in Lima,  
of whom maybe half (5.5m) are in slums.

What about the other 15 million?

- Of whom 5 million live in 10 cities of more than 250,000;
- A further 10 million live in smaller towns;
- And possibly 4 or 5 million live in slums ...



# Shit in Peru



# References & reading

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- Ezeh, A et al. 2016. "The history, geography and sociology of slums and the health problems of people who live in slums." *The Lancet*, 389, No 10068.
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