Globalization, co-operation & global Governance: Health and environment at the heart of sustainable development

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Preventing Disease through Healthy Environments

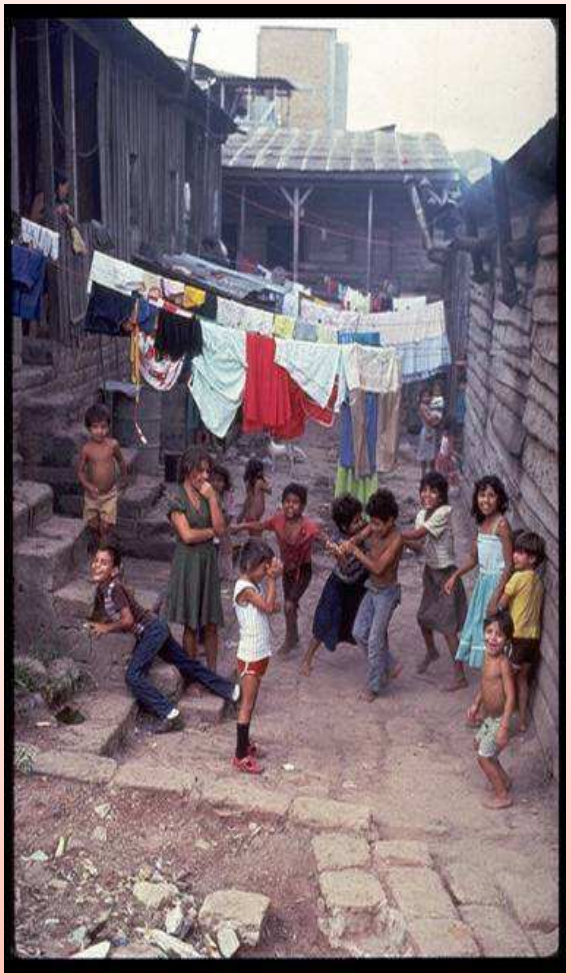
WHY PUBLIC HEALTH AND ENVIRONMENT?

What are the elements of Public Health and Environment?

GLOBAL CHALLENGES TO HUMAN HEALTH AND DEVELOPMENT

NEW DRIVING FORCES

Rapid globalization
New industrialization
Upsurge of urbanization
Poverty and inequity
Non-sustainable consumption
Excessive population growth
Trans-boundary chemical transport



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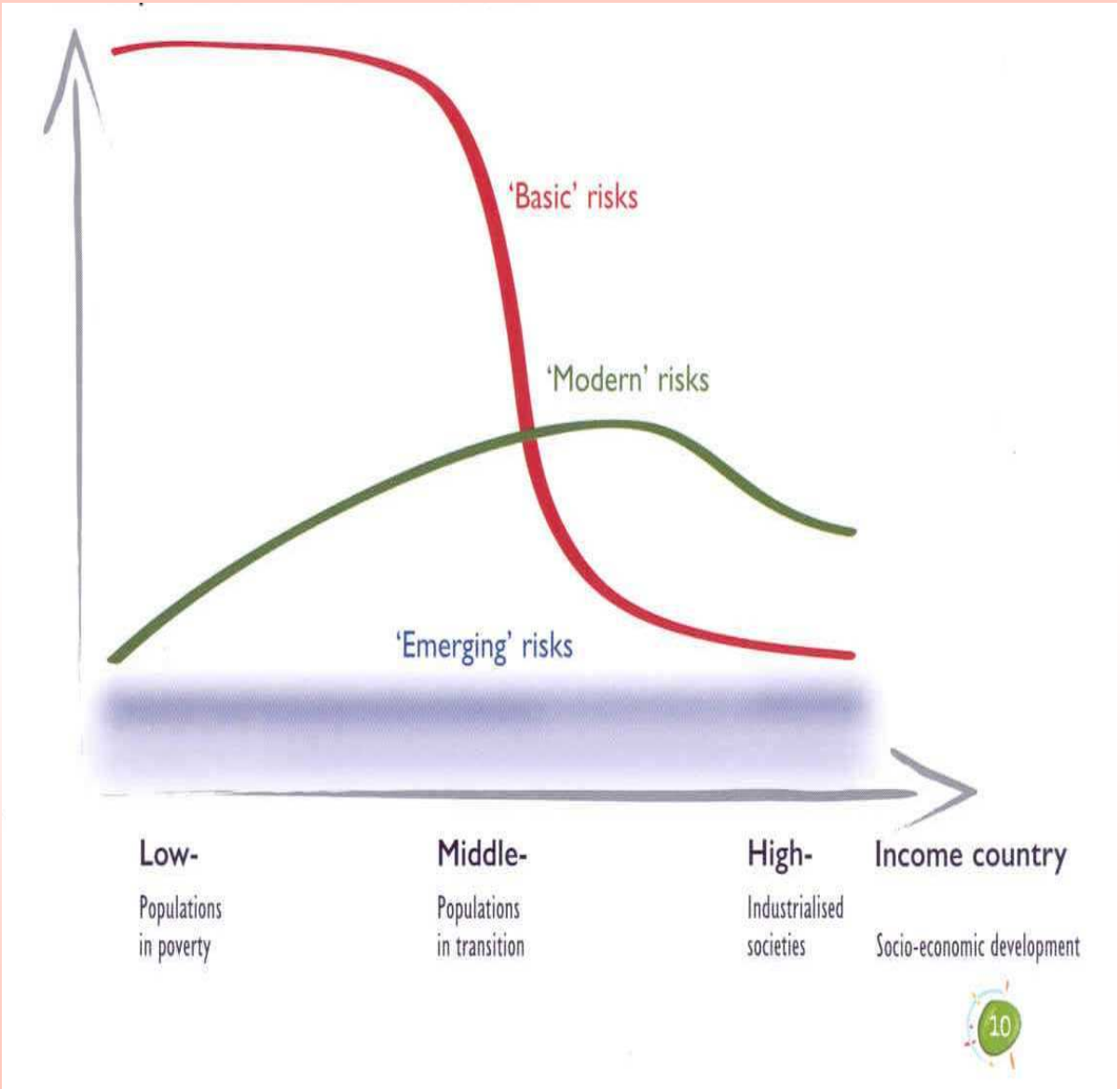
ENVIRONMENTAL CHANGE

Climate change
Ozone depletion

Desertification/deforestation
Forest fires
Loss of biodiversity
Increased use of biotechnology

Vulnerable groups affected disproportionately



BASIC

Unsafe water and food

Indoor air pollution, Vectors

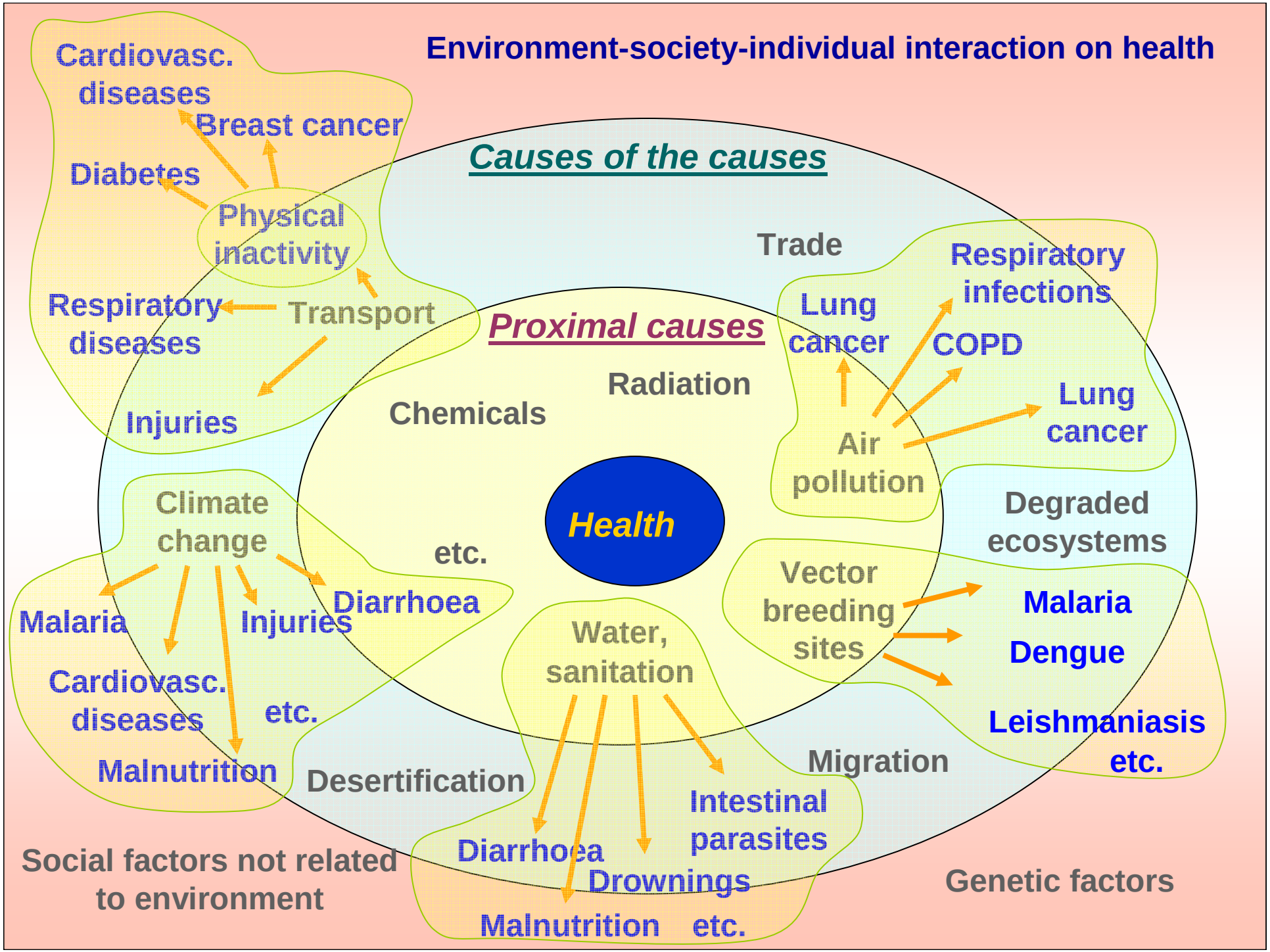
MODERN

Unsafe use of chemicals, traffic and industry, environmental degradation,...

EMERGING

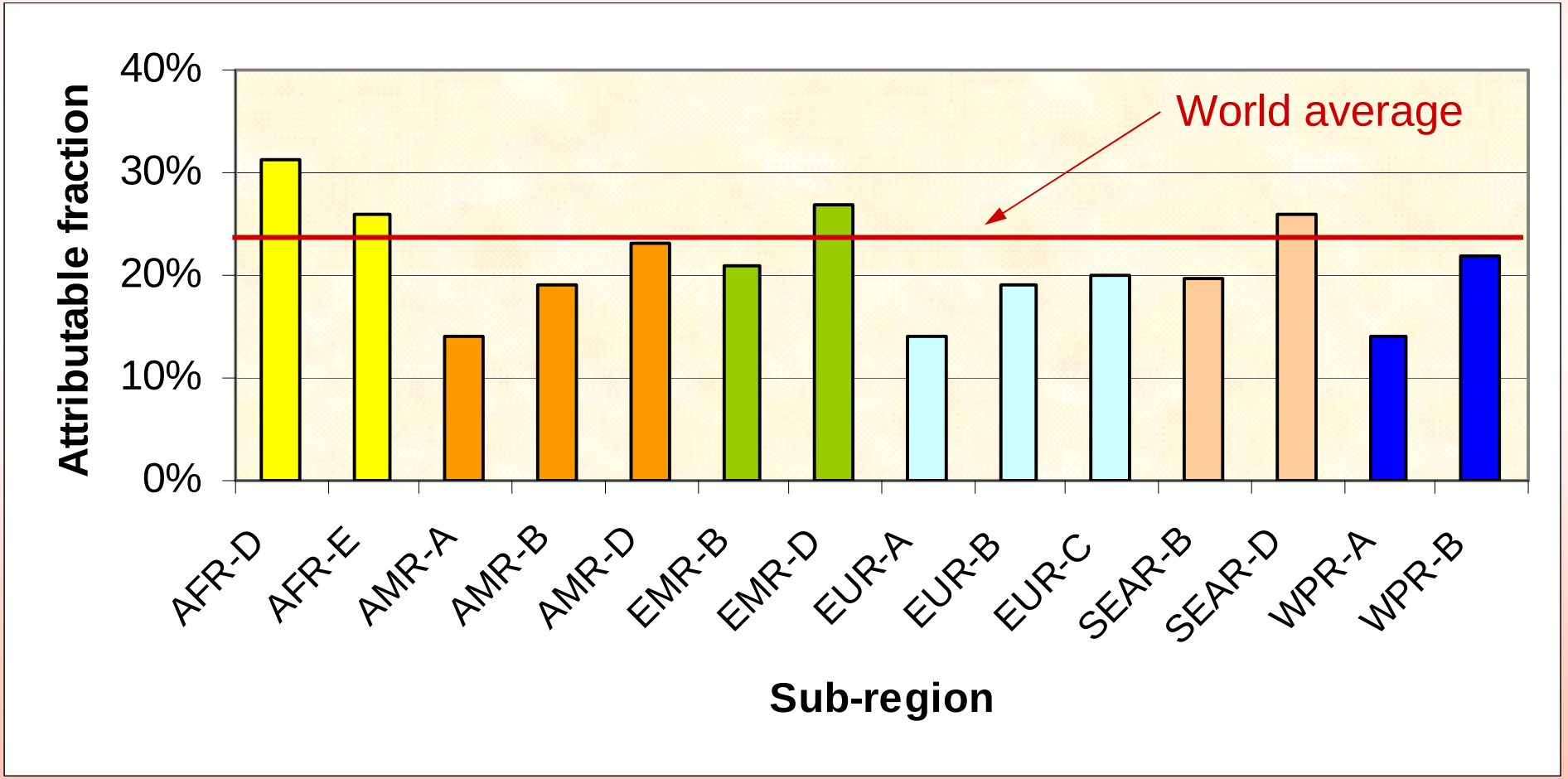
Nanoparticles, endocrine disrupters, radiations, POPs


GLOBAL ENVIRONMENT
COMMUNITY
HOME
Social environment
Housing and shelter
Air pollution
Noise
Road traffic
Solid waste
Sanitation and hygiene
Water supply
Vector-borne diseases
Natural hazards
Food
Hazardous chemicals
Radiation

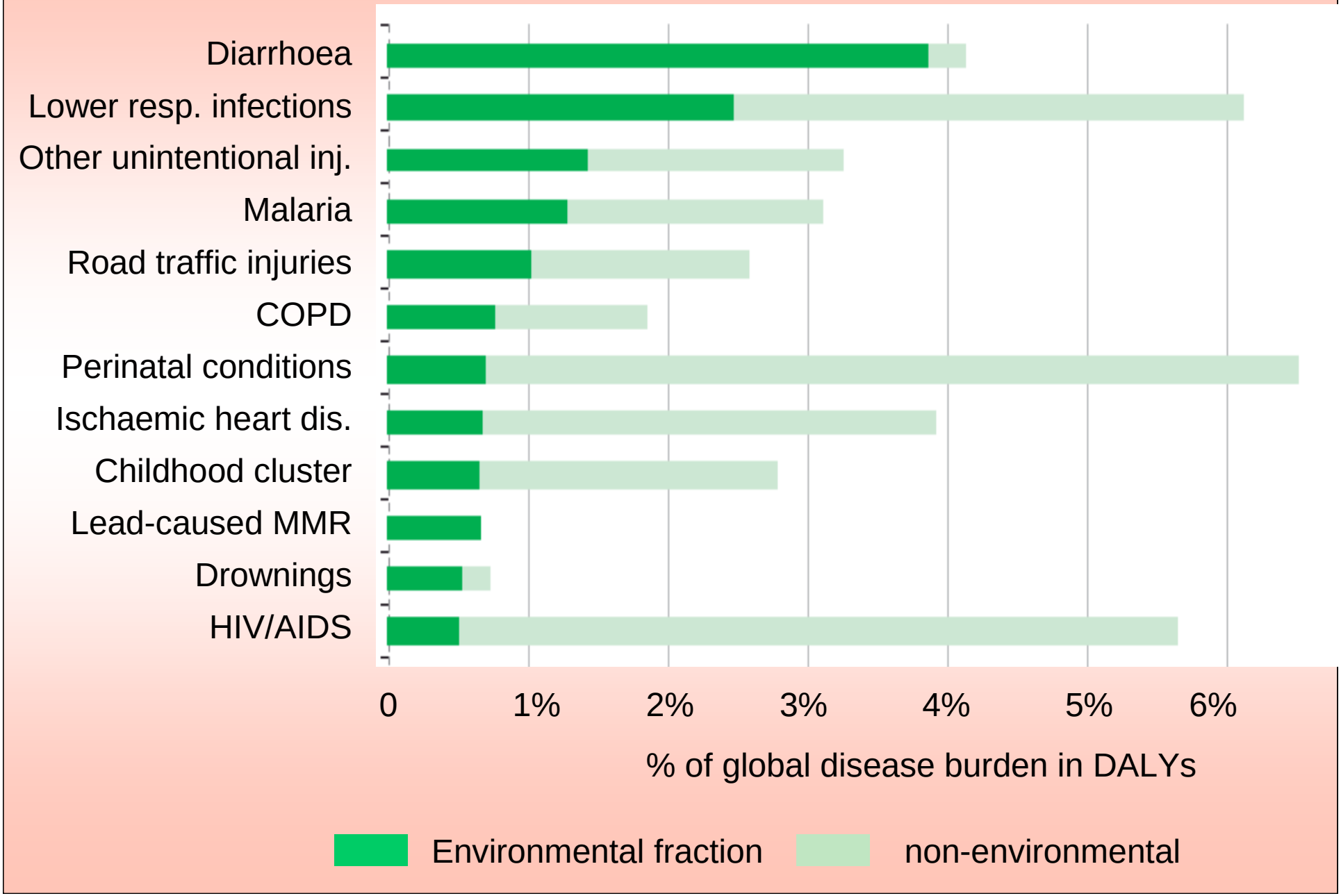

Environment-society-individual interaction on health
Causes of the causes
Proximal causes
Health
Cardiovasc. diseases
Breast cancer
Diabetes
Physical inactivity
Respiratory diseases
Transport
Injuries
Trade
Respiratory infections
Lung cancer
COPD
Lung cancer
Air pollution
Radiation
Chemicals
etc.
Climate change
Malaria
Injuries
Diarrhoea
Cardiovasc. diseases
etc.
Malnutrition
Vector breeding sites
Malaria
Dengue
Leishmaniasis
etc.
Degraded ecosystems
Water, sanitation
Desertification
Migration
Intestinal parasites
Diarrhoea
Drownings
Malnutrition
etc.
Social factors not related to environment
Genetic factors

How much disease is could be prevented by modifying the environment ?

Current evidence - best conservative estimate 24%



Diseases with largest environmental contributions



Diseases with largest environmental contributions

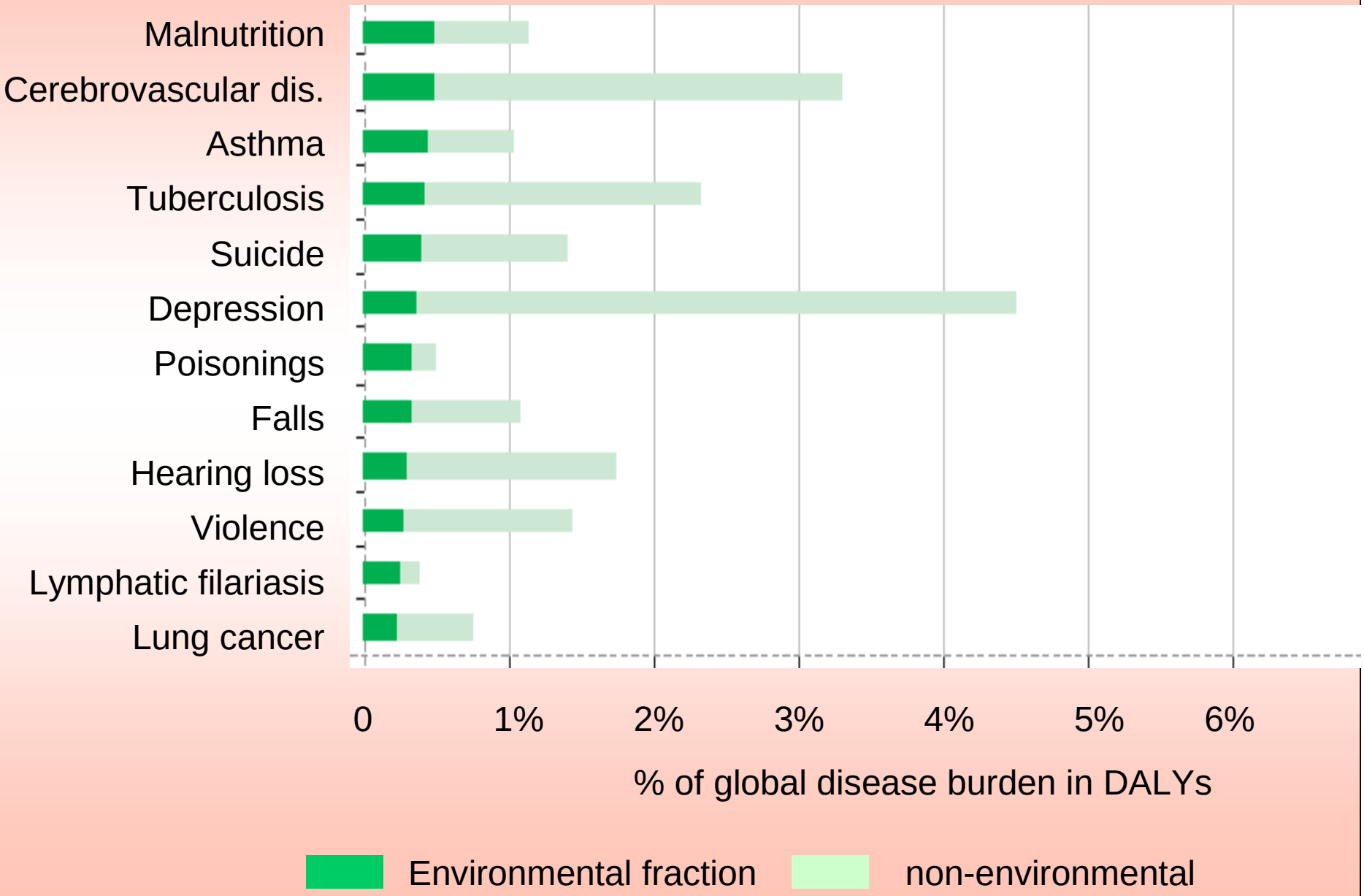


FIGURE 6 ENVIRONMENTAL DISEASE BURDEN IN DALYS PER 1000 PEOPLE, BY WHO SUBREGION (2002) [a]

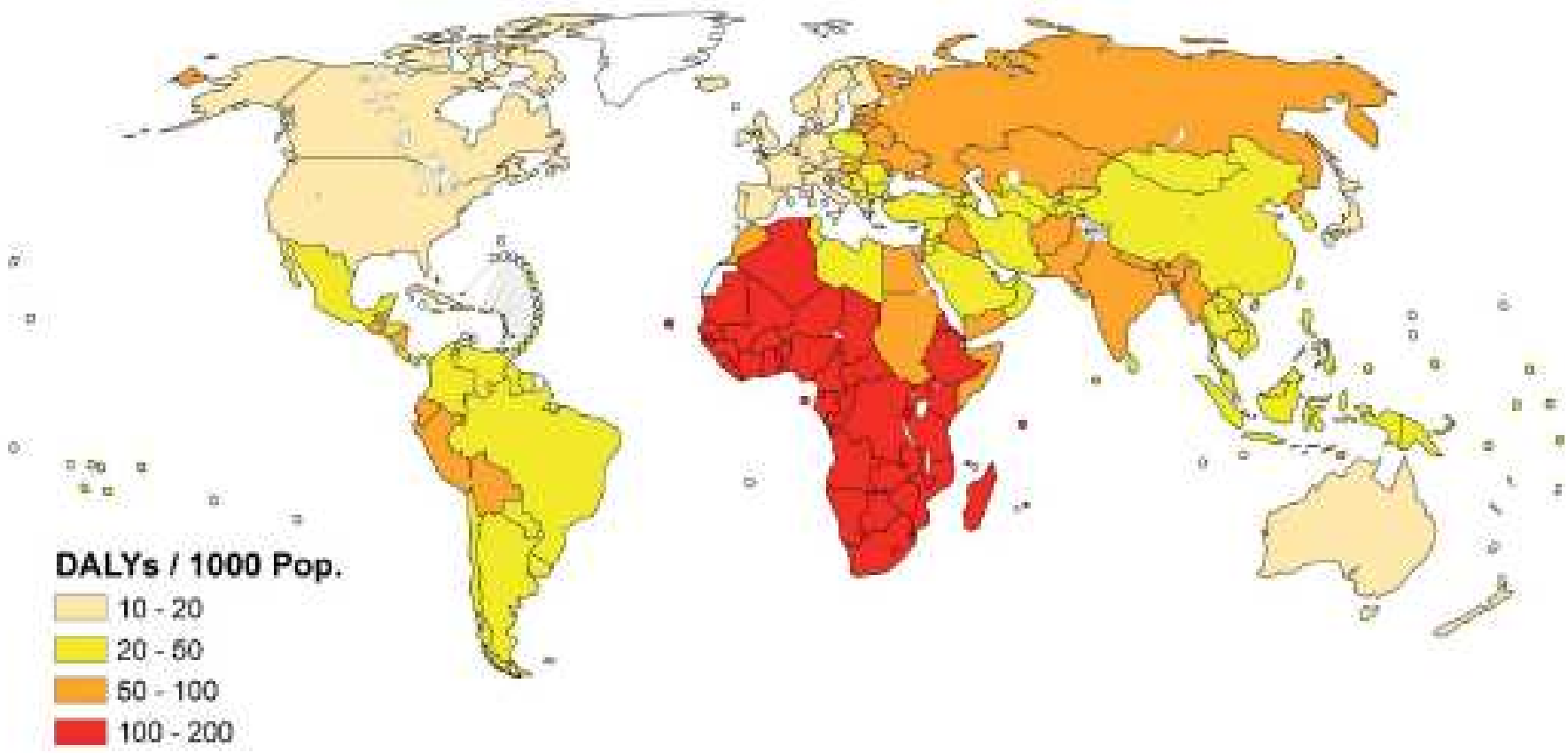
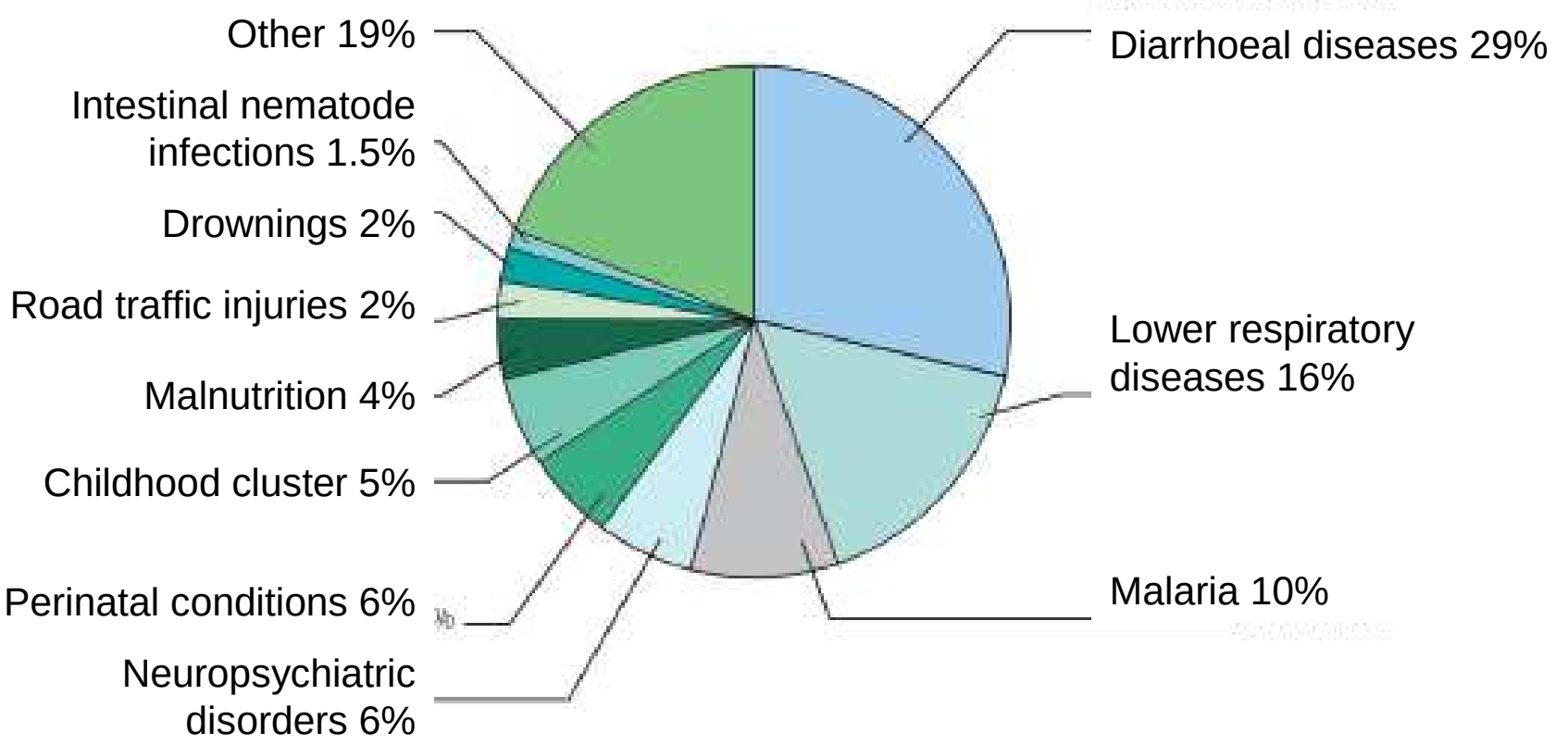


FIGURE 9 MAIN DISEASES CONTRIBUTING TO THE ENVIRONMENTAL BURDEN OF DISEASE, AMONG CHILDREN 0–14 YEARS [a]



Summary findings

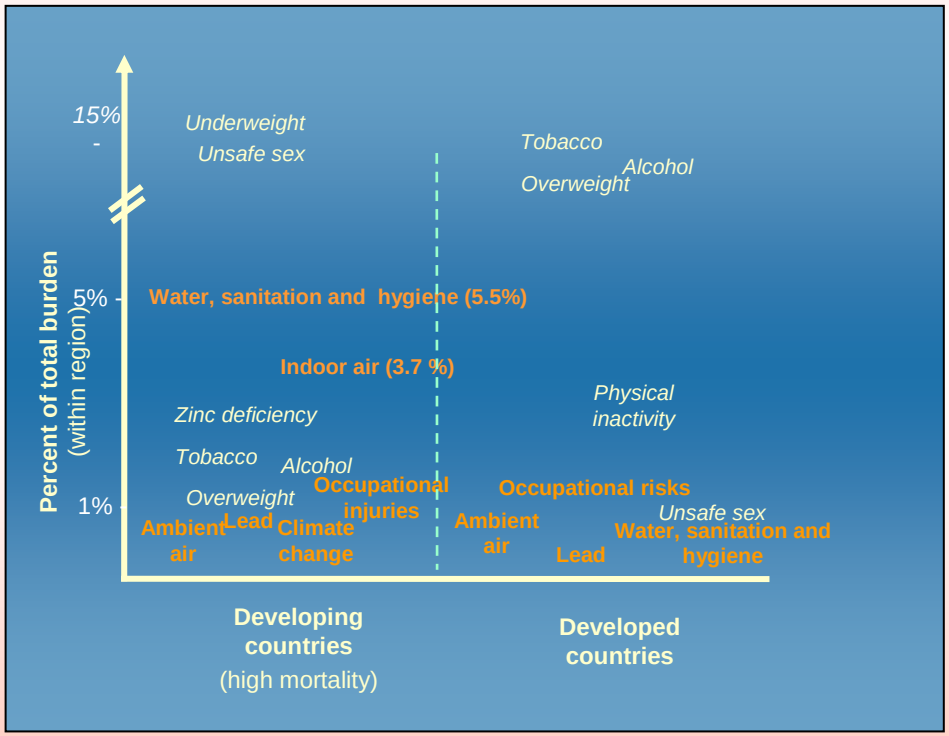
Nearly one quarter of disease burden is due to the environment
37% in children of 0-4 years
85 of 102 diseases with environmental components

Per capita results:

15 times more infectious diseases in developing than in developed countries
2x more injuries per capita in developing countries
2-3x more cancers and CVD in developed countries
More than 100x more diarrhoeal and LRI burden if comparing worst and best performing regions

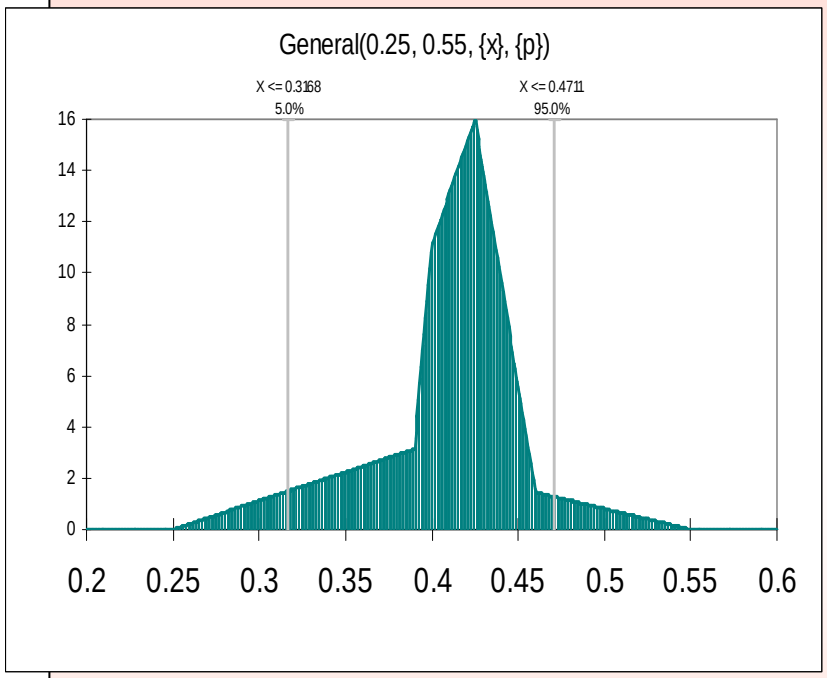
We have the vision,
the evidence and the strategy.

Roughly one quarter of the global burden of disease is linked to environmental factors



Example: respiratory infections

- CRA for solid fuel use: 36% of LRI
- CRA for outdoor air: 1% of RI
- ETS: Burden estimate for Italy of 21% of RI in infants
- Other key literature



- Result:

  42%(32-47%) in developing countries

Example: Lung cancer

- CRA: Smoking is largest contributor with 66%
- CRA: 9% due to occupation
- CRA: 5% due to outdoor air
- CRA: 1% due to indoor smoke from solid fuel use
- Also: ETS, radon, other chemicals
- Multiplicative effects between smoking and other exposures

Results:

  - 25% of women in developing countries
  - 33% of men in developing countries
  - 30% in developed countries

Example: Malaria

- Deep forests and hills, rural settings, urban and peri-urban
- Consultation of at least 3 experts per region
- Environmental modification: drainage, land levelling, lining of canals etc.
- Urban interventions: Modify house design, waste water treatment etc.
- Reduce contact between humans and vectors

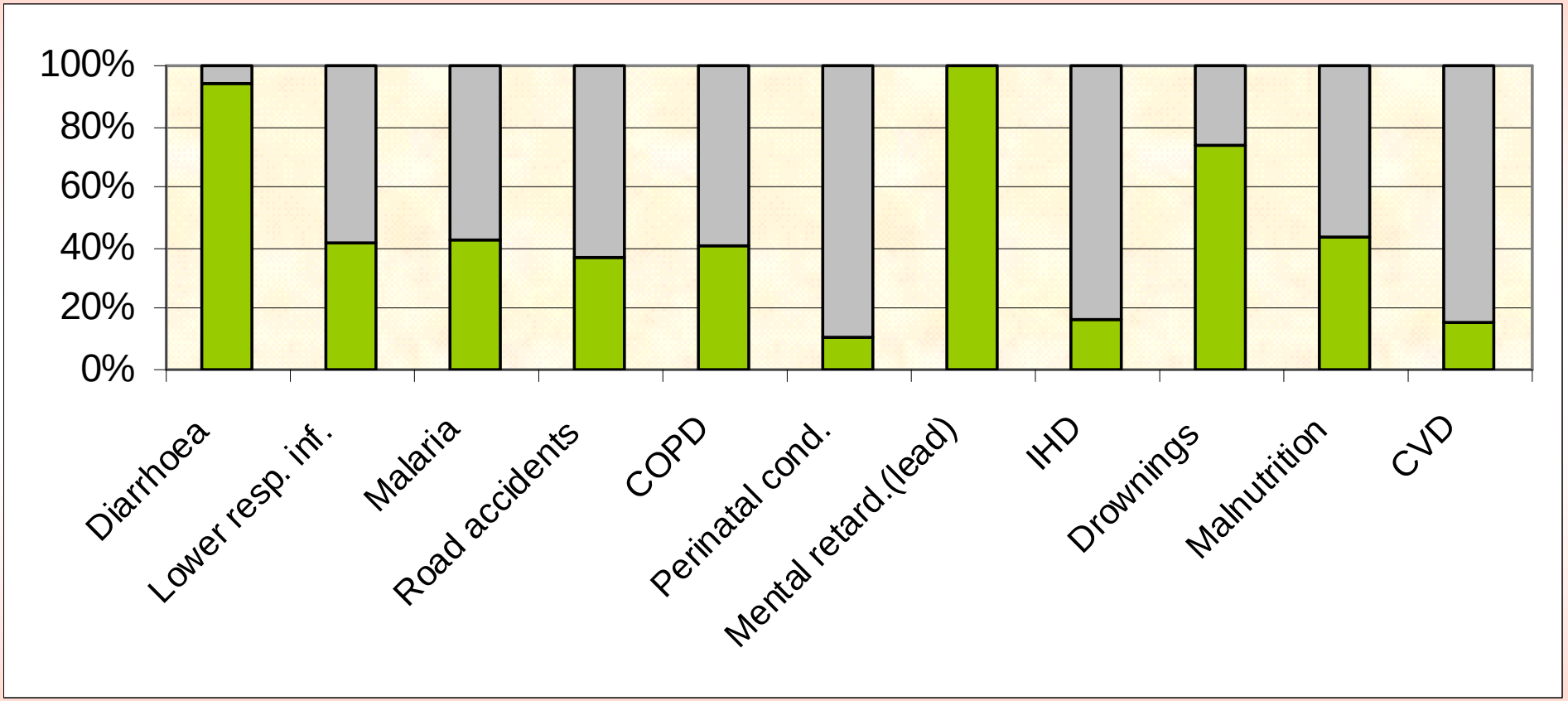
Example: Suicide

- Reduction of suicides by reducing means of self harm
- Methods include ingestion of pesticides, hanging, gun use etc.
- Modifying the environment has proven to have an impact such as improving chemical safety, detoxifying domestic gas, limiting access to guns
- Method for self-harm shows great variation, environmental attribution

Physical inactivity

- ischaemic heart disease and stroke, cancers of the breast, colon and rectum, and diabetes mellitus
- 58% of the global population is not sufficiently active
- Activity levels can be increased by environments that facilitate more active lifestyles
- Examples: Pedestrian- and bicycle-friendly environments, transport policies, infrastructure, building layout etc.

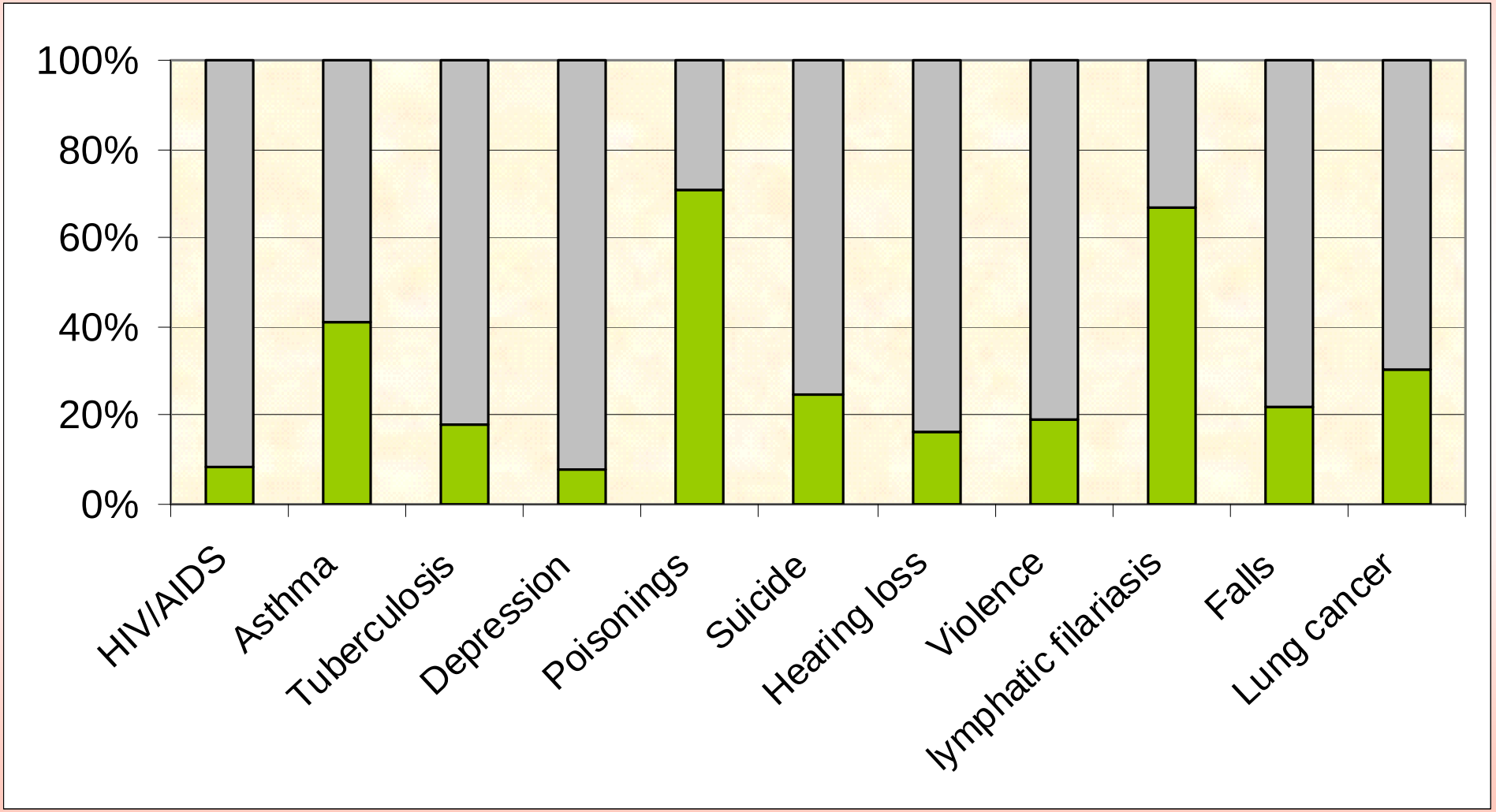
Percentage of diseases that could be prevented by modifying the environment (top 10 environmental contributors to total disease burden)



Environmental fraction

COPD: Chronic obstructive pulmonary disease
IHD: Ischaemic heart disease
CVD: Cerebrovascular disease

Percentage of diseases that could be prevented by modifying the environment (top 11-20 environmental contributors to total disease burden)



Thank you.