

Household Energy Access The World Bank Experience

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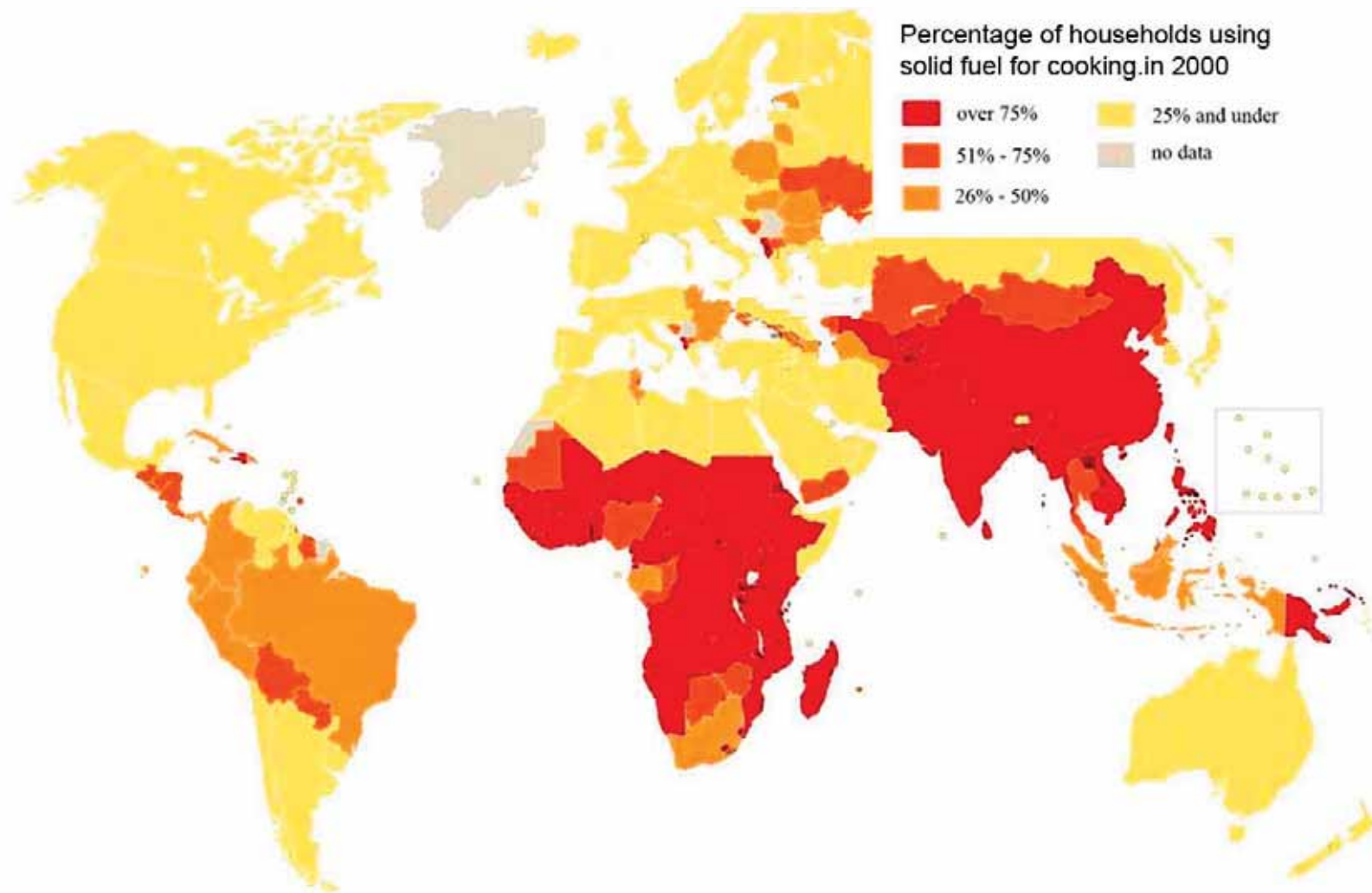
What are the key facts & issues?



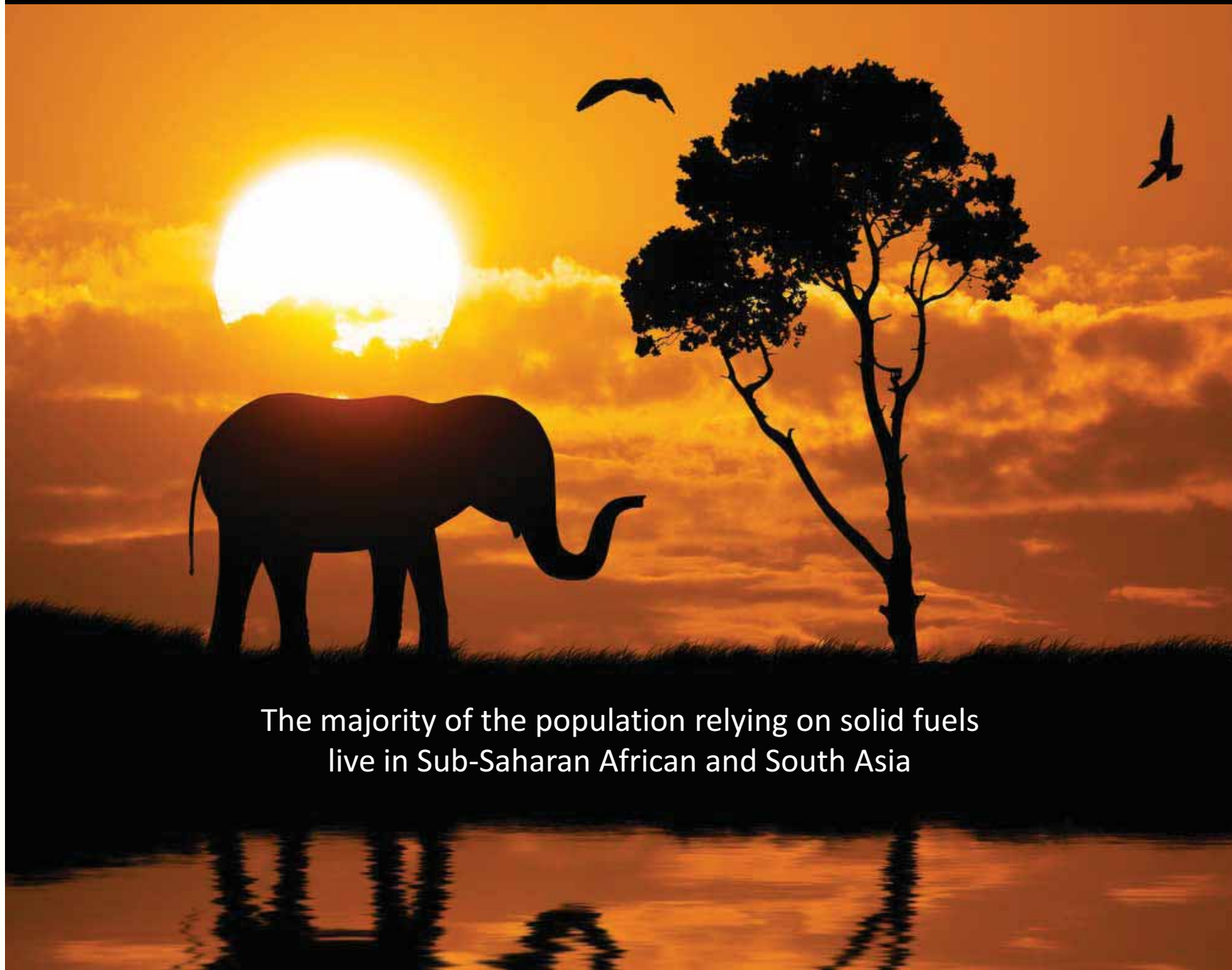


About half of humanity still relies on solid fuels for cooking & heating in the 21st Century.

Cooking with Solid Fuels



Source: Torres-Duque et al., 2008



The majority of the population relying on solid fuels
live in Sub-Saharan African and South Asia

The use of wood fuels in Central America is significant.

Percentage of people using firewood for cooking

Guatemala 72%

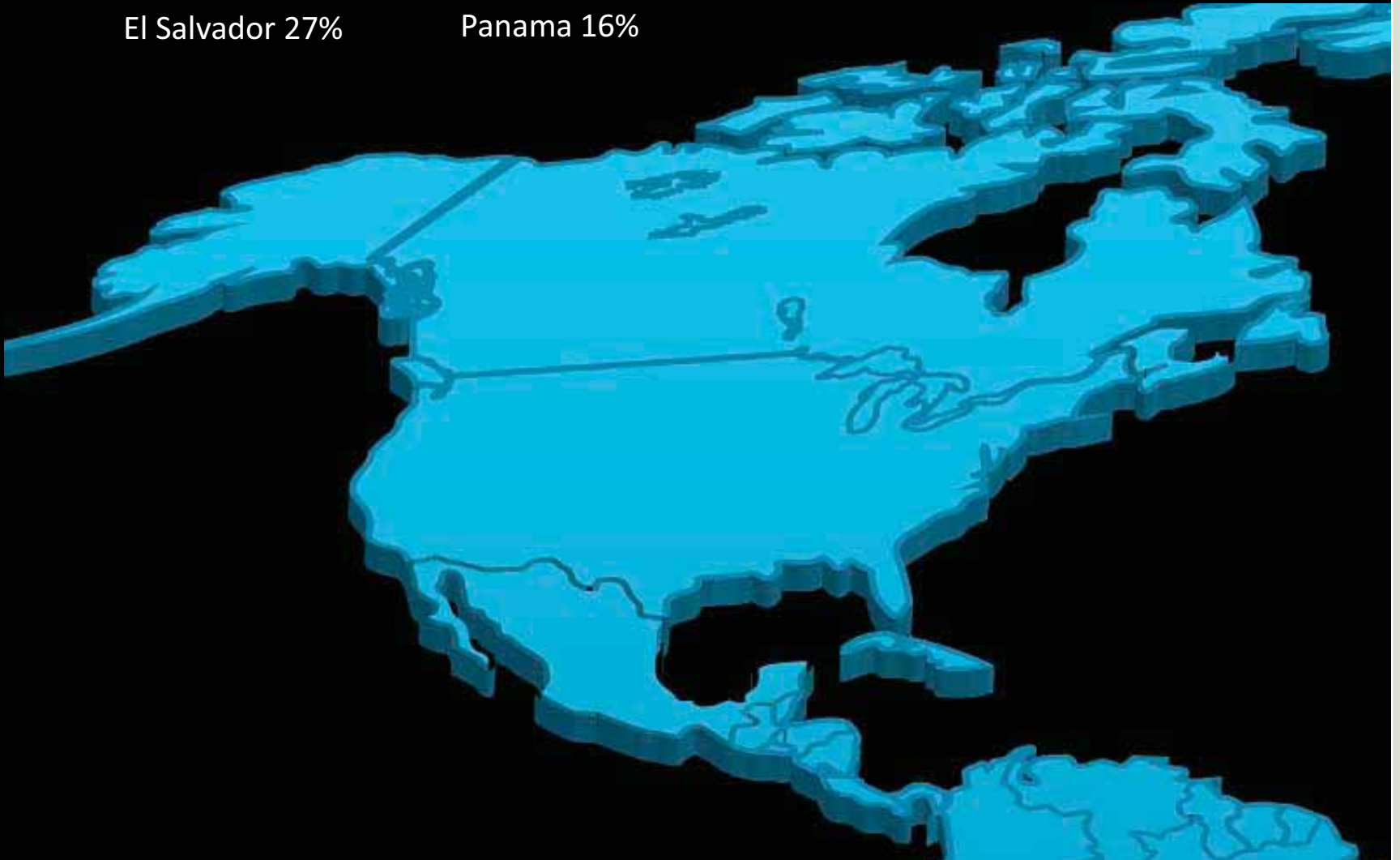
Honduras 69%

El Salvador 27%

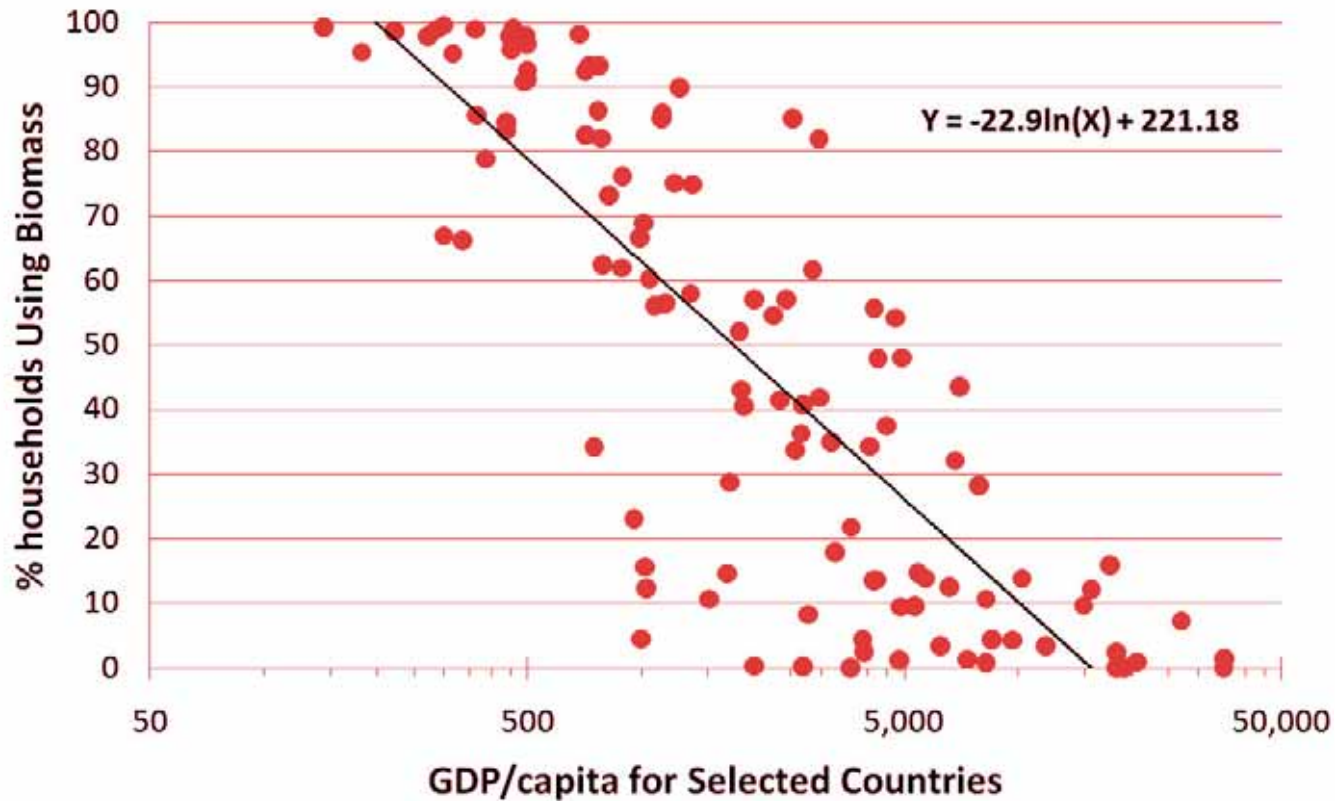
Nicaragua 67%

Costa Rica 9%

Panama 16%



High reliance on solid fuels is an indicator of poverty



Source: WHO and UNDP, 2009

There is strong evidence on negative health outcomes from inefficient use of solid fuels



The Killer in the Kitchen

Source: WHO, 2006

Exposure to Wood Smoke and Adverse Health Outcomes

Emissions \neq Health impacts

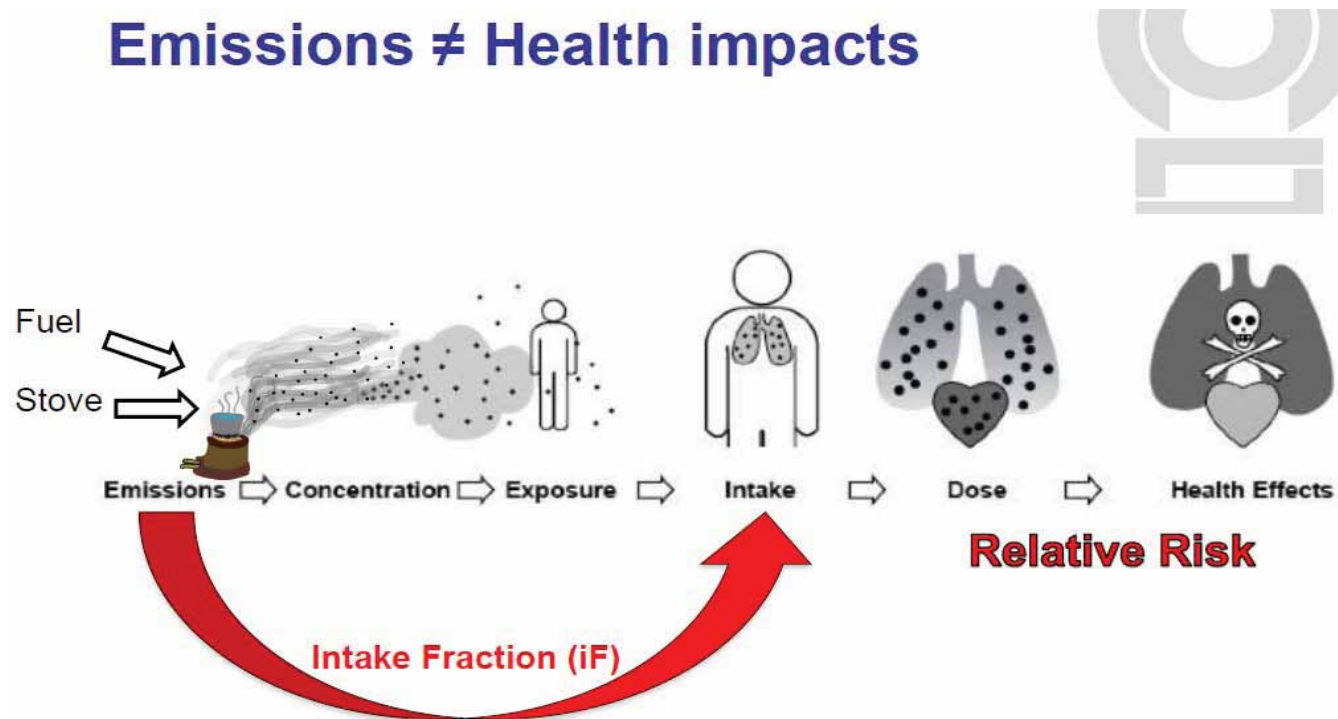
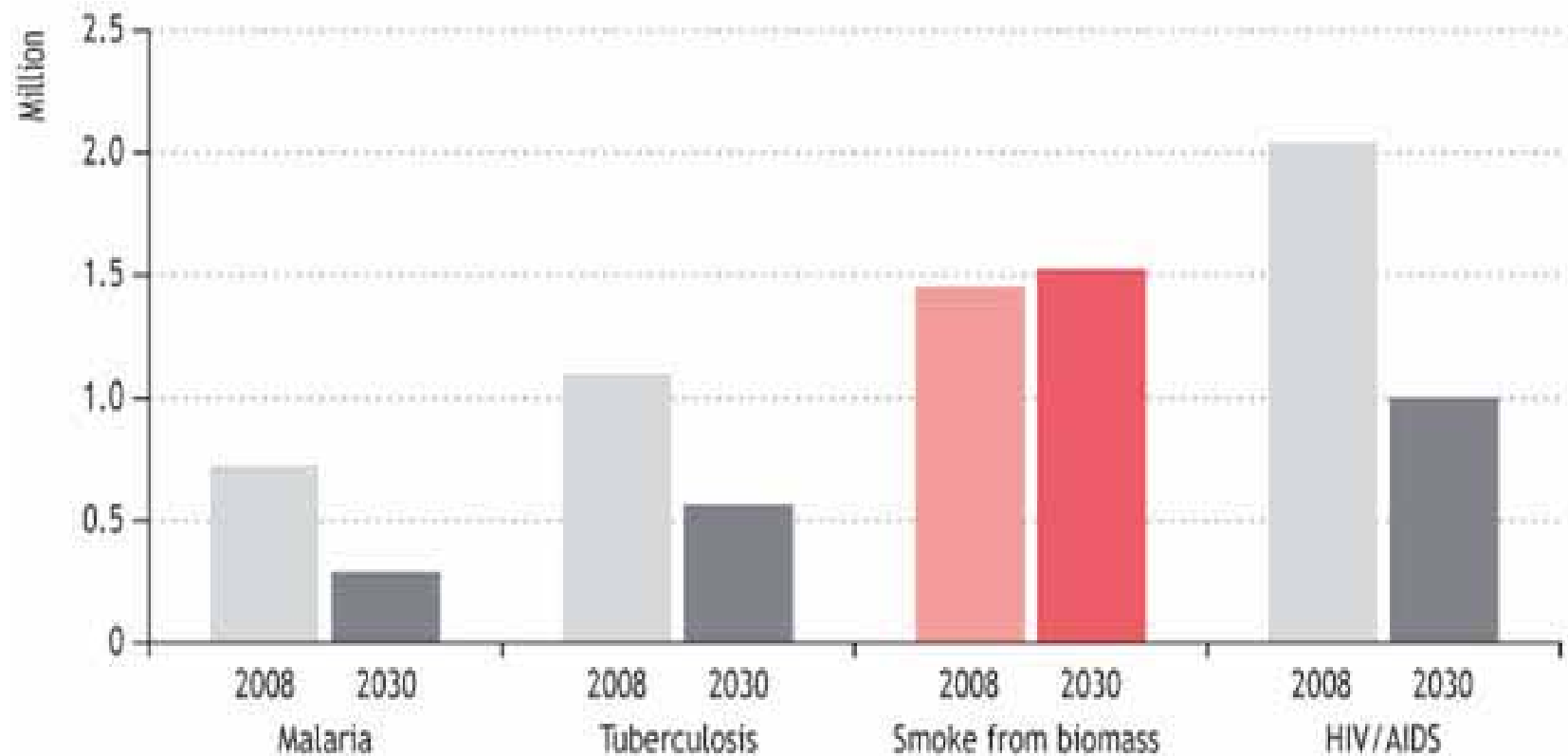


Figure courtesy of Julian Marshall

Premature annual deaths from household air pollution and other diseases



Sources: Mathers and Loncar (2006); WHO (2008); Smith *et al.*, (2004); WHO (2004) and IEA analysis.

Local & Global Environmental Impacts



Improved cookstoves have entered
the climate change debate
with Black Carbon.



However there are uncertainties about the effect of black carbon emitted from burning biomass in inefficient cookstoves.

On one side..

It may be affecting the rise
in global temperatures.

(Ramanathan and Carmichael, 2008; Gustafson, 2009).

On the other side..

It may be interacting with other aerosols
in the atmosphere to produce
a net cooling effect on the climate.

(Bauer et al, 2010).

Type of Interventions

- Promote efficient and sustainable use of traditional biomass fuels
- Create an enabling environment for households to switch to modern cooking fuels and technologies

Co-benefits

- Significant gains for health outcomes
- Can impact climate change
- Supports local business development
- Impacts livelihoods of men and women in communities
- **Good for green growth**



The World Bank

Analytical Work on Household Energy Access
Over 25 years of experience



Africa Renewable Energy
Access Program (AFREA)

ESMAP's Household Energy Activities



GLOBAL

ESMAP's past household energy activities have provided policy recommendations for improved cook stoves dissemination & cleaner cooking fuel adoption in many countries.



ESMAP joined the UN's Global Alliance for Clean Cookstoves, which calls for 100 million households to adopt clean and efficient stoves and fuels by 2020.



ESMAP is revamping its energy access program, which includes support to household energy initiatives.

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Some Key Initiatives on Household Energy

- **ESMAP/SEGEN**
- **Biomass Energy Initiative for Africa**
- **Africa Clean Cooking Initiative**
- **Clean Stove Initiative for East Asia and Pacific**
- **White Paper on Improved Cookstoves in Central America**
- **Discussions towards a Household Energy Strategy for South Asia**



The World Bank

Household Energy Lending 1989 - 2010



Africa Renewable Energy
Access Program (AFREA)

World Bank household energy lending: 1989 - 2010

19 projects with the objective of improving household cooking and heating energy access.

The total cost of these projects is \$1.2 billion, to which the World Bank has contributed \$698 million.

4 biogas projects for cooking and lighting at the household level (China and Nepal).

The total cost of these projects is \$1 billion to which the Bank has contributed \$365 million with 70 percent allocated to household energy access components.

8 natural gas projects for cooking and heating mostly in Europe and Central Asian countries with one exception of a project in Columbia.

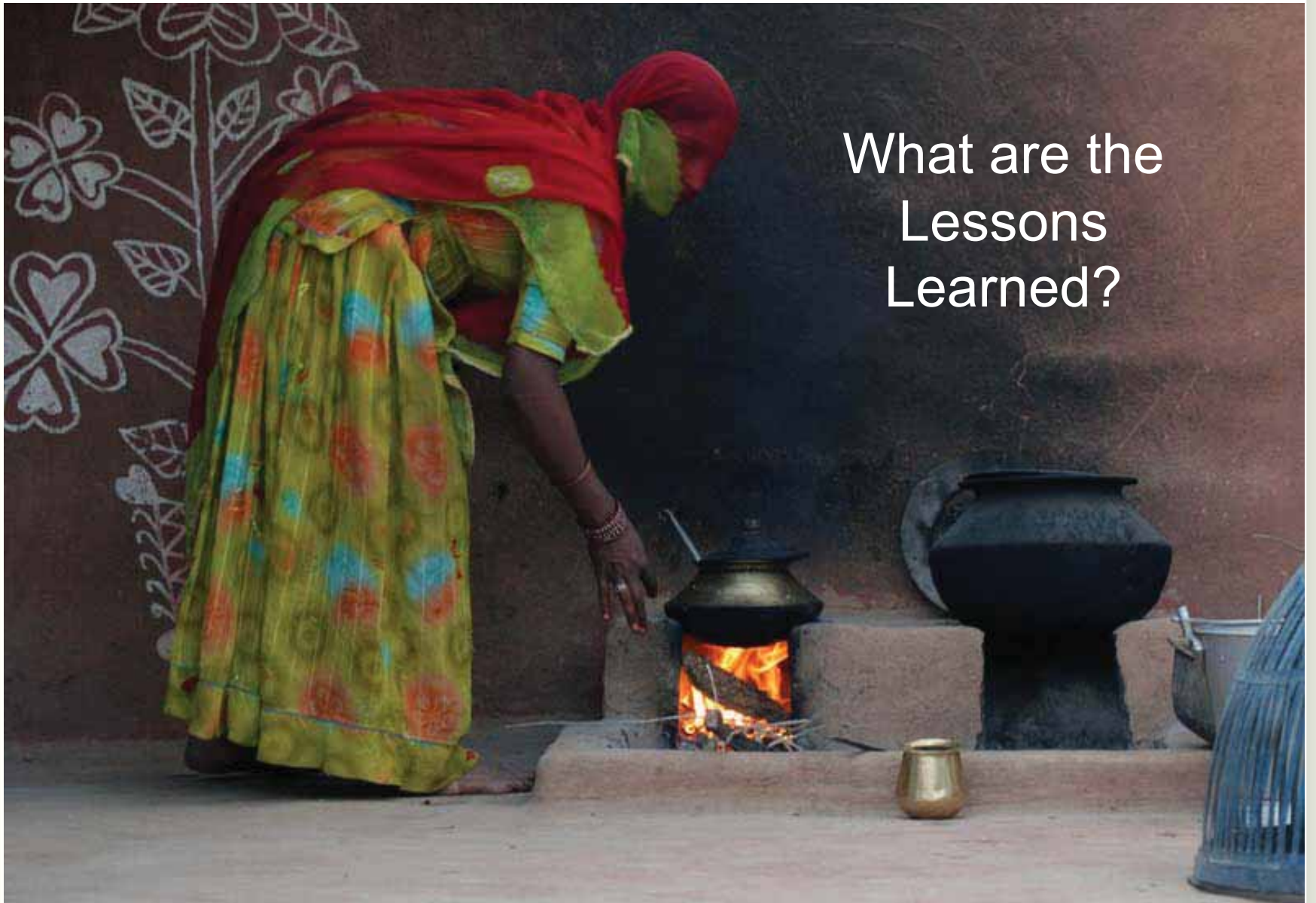
The total cost for these projects is \$203 million to which the Bank has contributed \$126 million.

Main components of household energy access projects



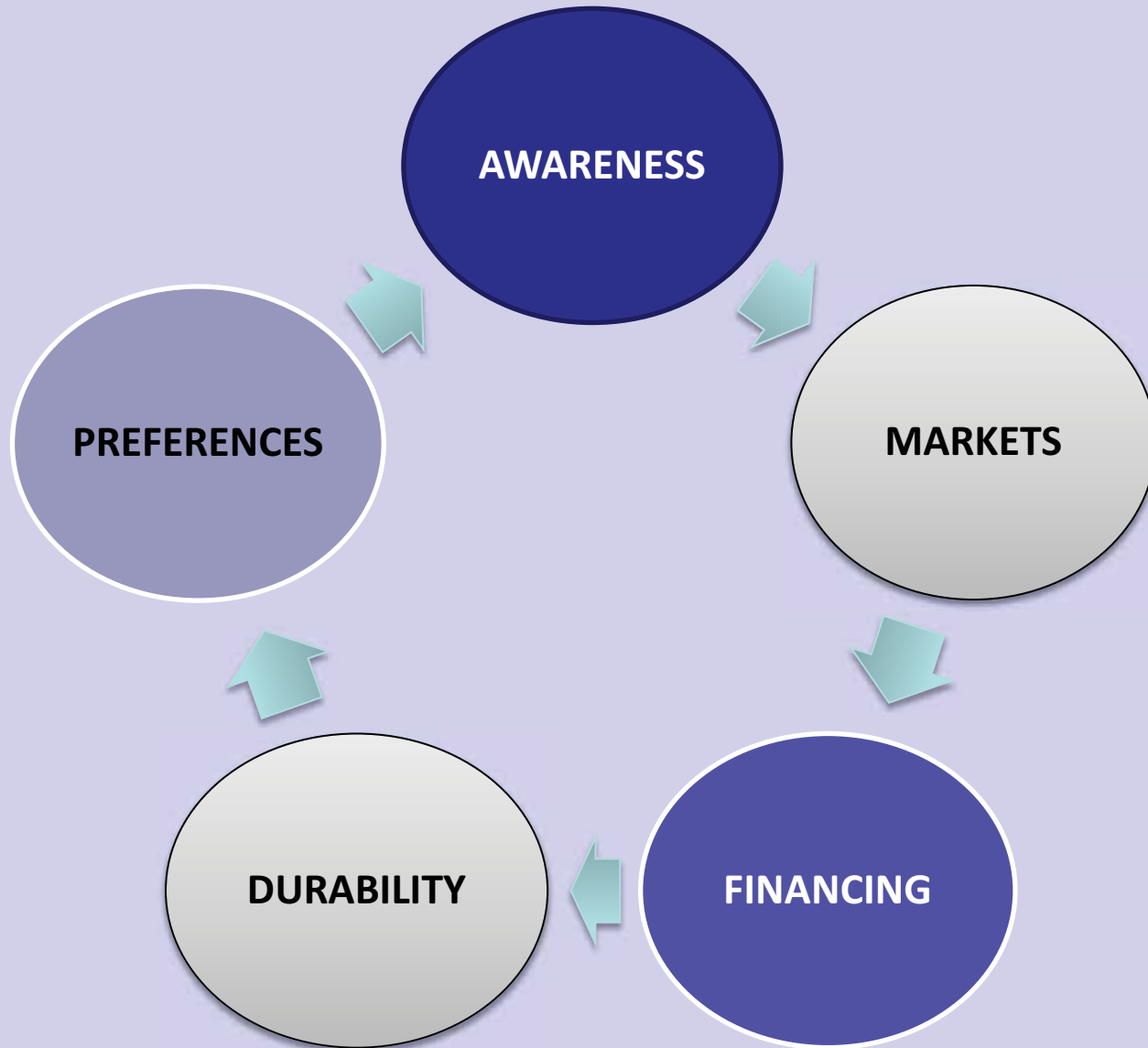
Barriers to mainstream household energy interventions in operations

- these projects require detailed upstream studies that **are time-consuming**, which can delay project preparation;
- the interplay of **many disciplines** in dealing with household energy access issues makes it difficult for teams to deal with them in the context of a limited project preparation budget;
- the number of staff equipped to prepare household energy access projects is low, and this **expertise is scattered** throughout the institution;
- **transaction costs** in preparing a household energy access project is high compared to the volume of lending it can leverage;
- **low demand** for interventions on household energy access from countries probably caused by **low awareness** of the issues at stake by the majority of the affected populations and by many governments;
- there are **more pressing priorities** in the sector; and,
- **other development partners** are already doing it and they are better equipped



What are the
Lessons
Learned?

Some Lessons Learned





Needs and preferences
of users should be given priority

Alternative Use of a Kerosene Stove





Public awareness
campaigns are
pre-requisites for
successful interventions



Market based
& public support

Going Forward

Outreach for Partnerships

INTERNAL PARTNERSHIPS | MULTISECTORAL APPROACH

- Partnerships between teams working within energy, health, forestry, gender, rural development & climate change sectors are needed due to the **multidimensional nature of household energy access** issues to help leverage expertise and funding.
- This is not only relevant for the World Bank but can be helpful as well at the level of **national institutions**.

EXTERNAL PARTNERSHIPS | GREATER IMPACT

- The Bank could partnership with grassroots organizations well grounded **with easy access to communities** to promote awareness and the behavioral changes on clean cooking.
- **Selectivity** should be however exercised in the choice of partners and tools should be developed to **measure performance and impact**.





Thank You