SEI STOCKHOLM ENVIRONMENT INSTITUTE U.S. Center

WISDOM
Woodfuel Integrated Supply/Demand Overview Mapping

Centro de Investigaciones en Ecosistemas
UNAM Campus Morelia

CENTRO DE INVESTIGACIONES EN GEOGRAFÍA AMBIENTAL
CIGA
CENTRO DE INVESTIGACIONES EN GEOGRAFÍA AMBIENTAL

GLOBAL ALLIANCE FOR CLEAN COOKSTOVES

Linking Clean Cooking and REDD+

Rob Bailis, Rudi Drigo, Omar Masera, Adrian Ghilardi

Clean Cooking Forum 2015
Accra, Ghana | November 10–13
www.cleancooking2015.org

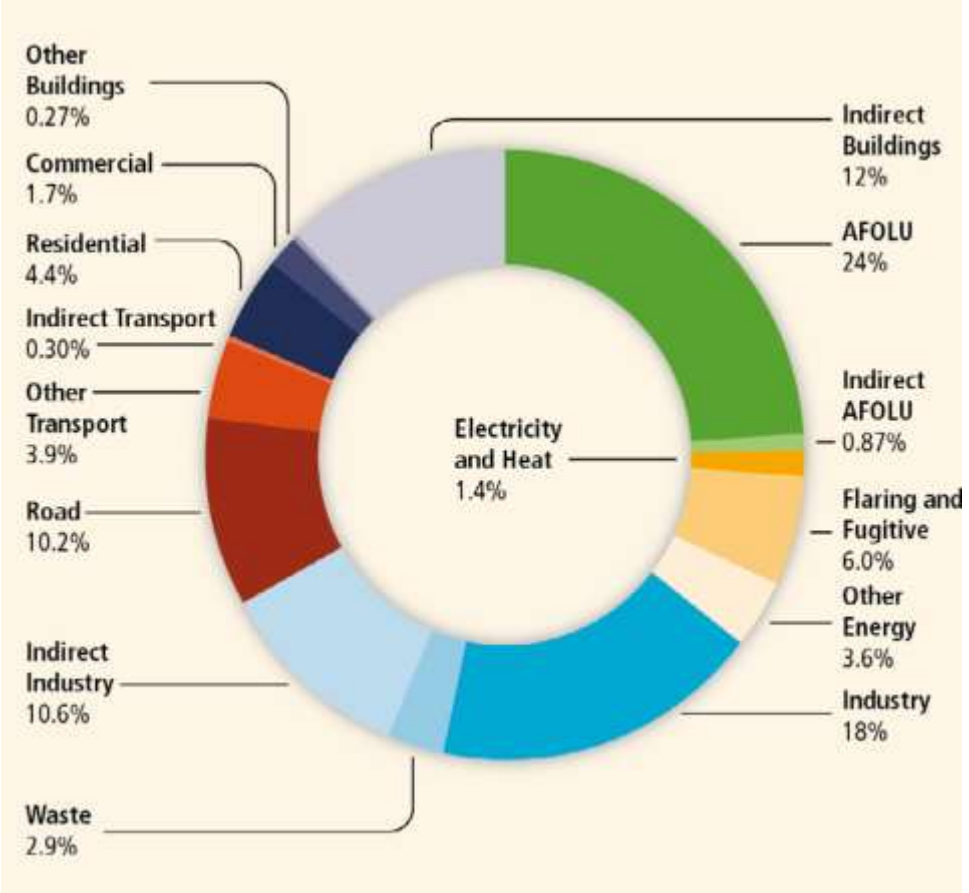
Fundamental questions

- What are the links between woodfuel consumption and deforestation or forest degradation (D&D)?

- What policies or interventions are effective at reducing D&D impacts resulting from woodfuel consumption?

Land use change and climate change

- AFOLU: 24% of global emissions
  - Split ~60:40 between Ag and Forests
- REDD+ mechanism promotes mitigation of forest-based emissions

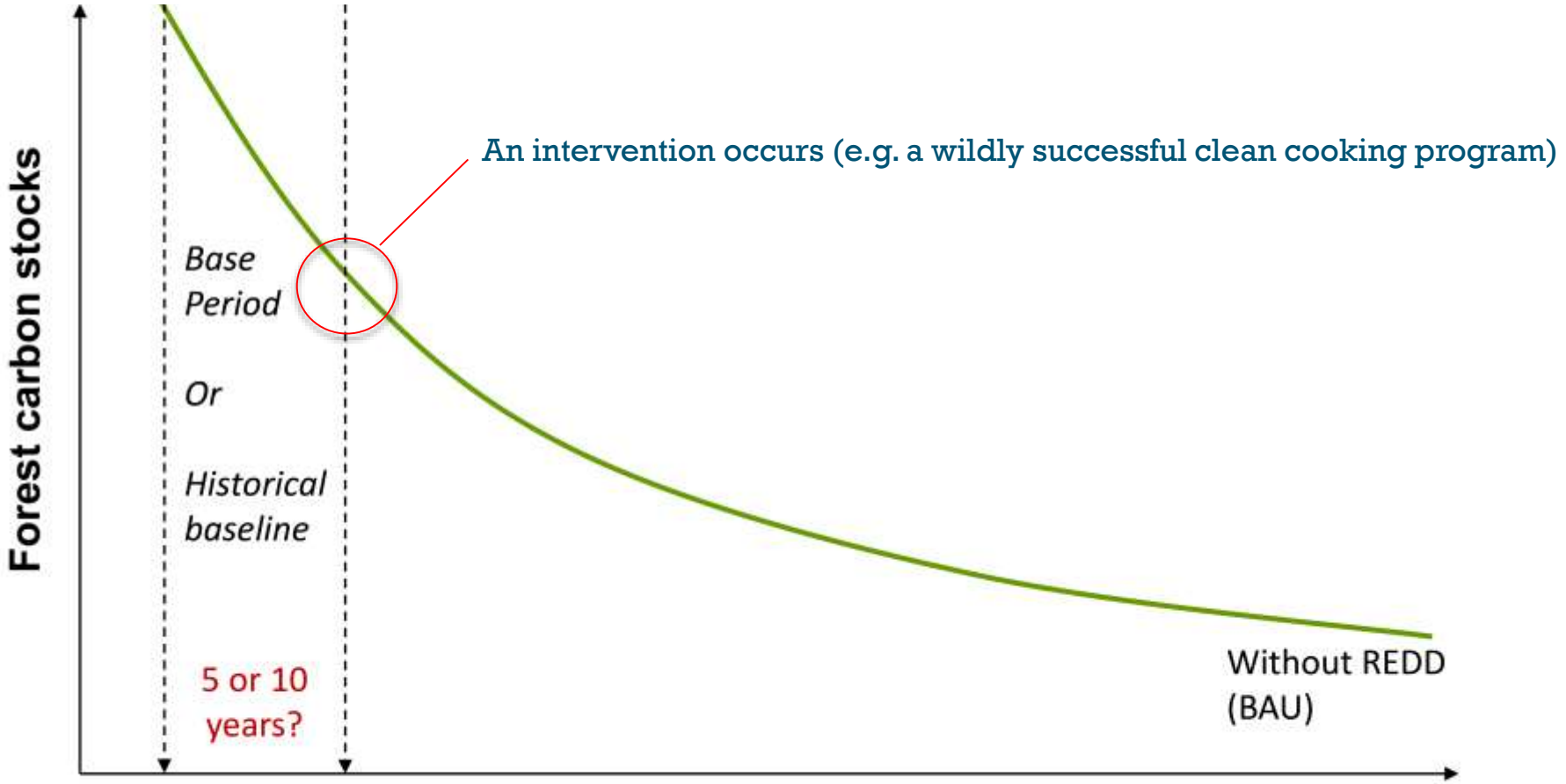


IPCC AR5, WGIII Fig. 1.3.b

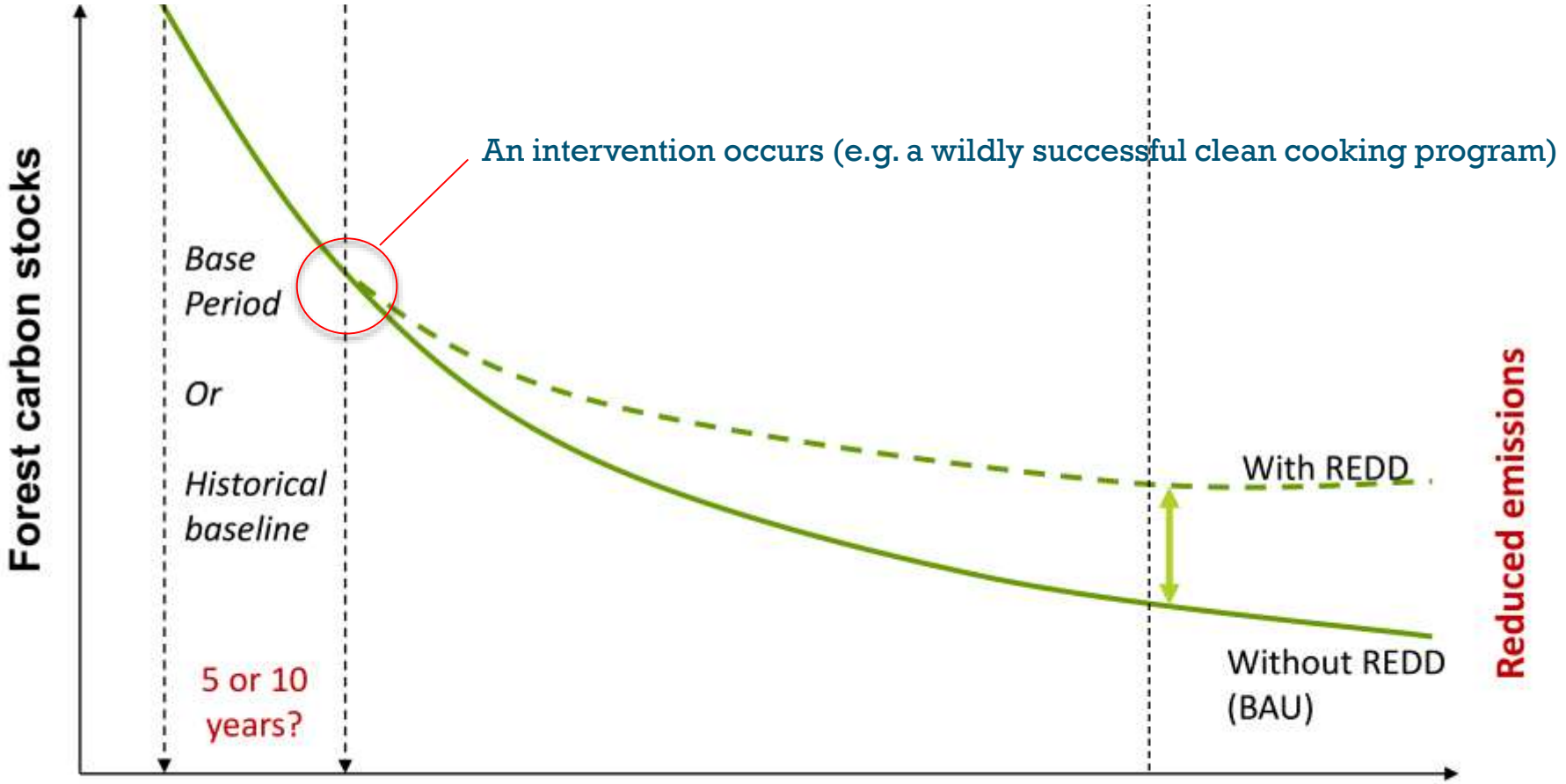
The REDD+ concept

- Reducing emissions from **deforestation**;
- Reducing emissions from forest **degradation**;
  - **Conservation** of forest carbon stocks;
  - **Sustainable management** of forests;
  - **Enhancement** of forest carbon stocks.

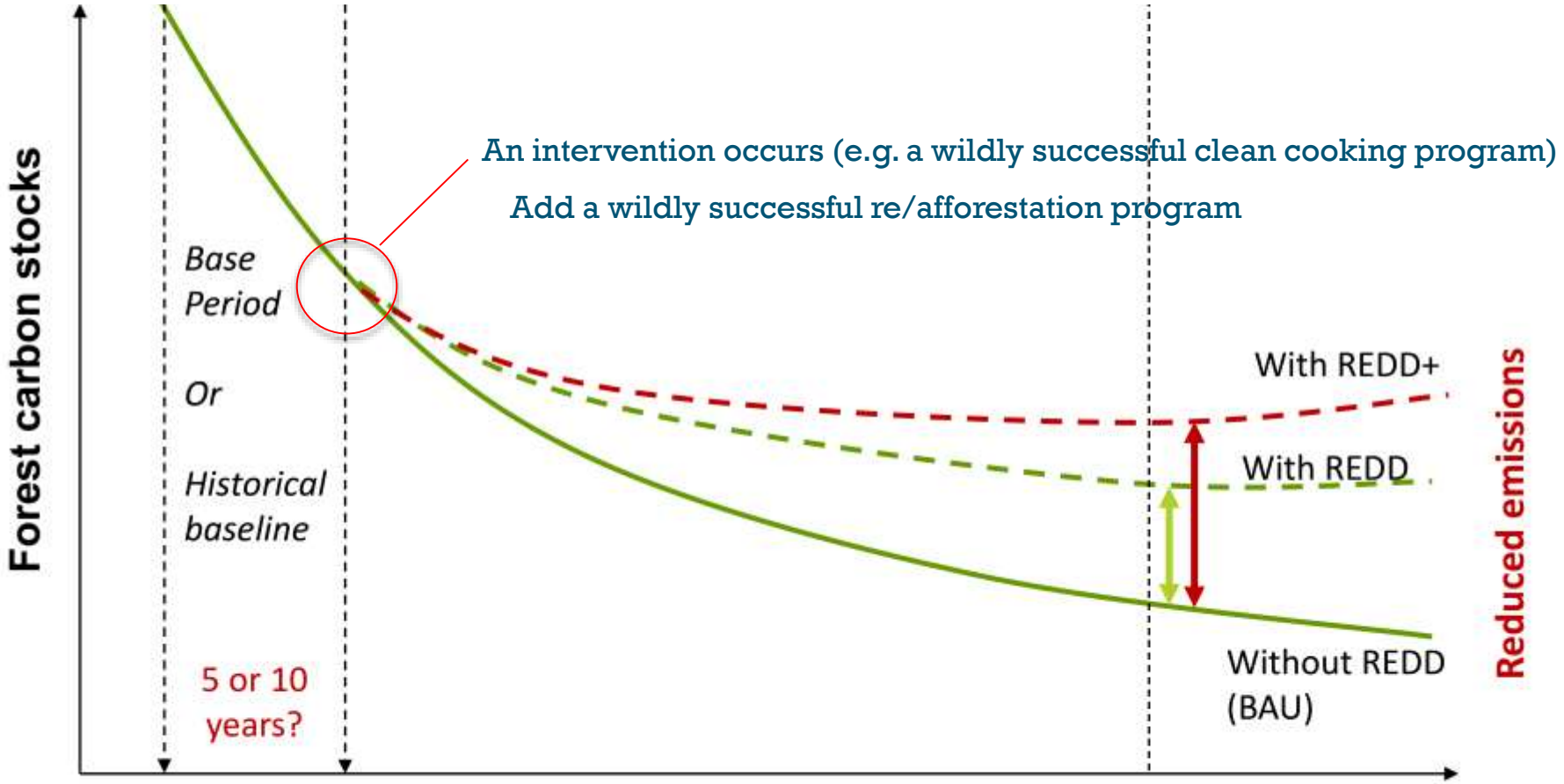
The REDD+ concept



The REDD+ concept



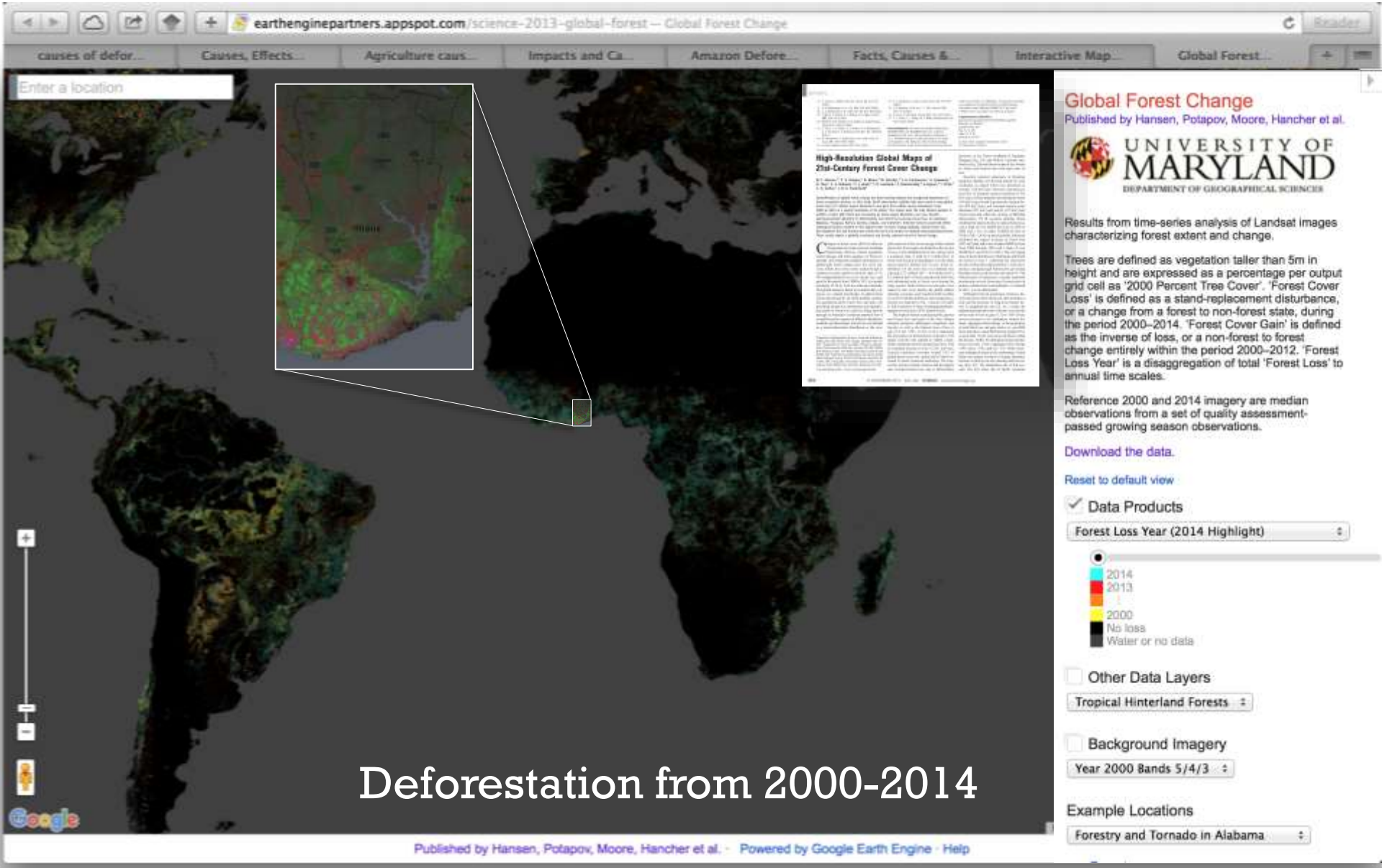
The REDD+ concept



Effective REDD+ policies

…require understanding **where** and **why** D&D occurs

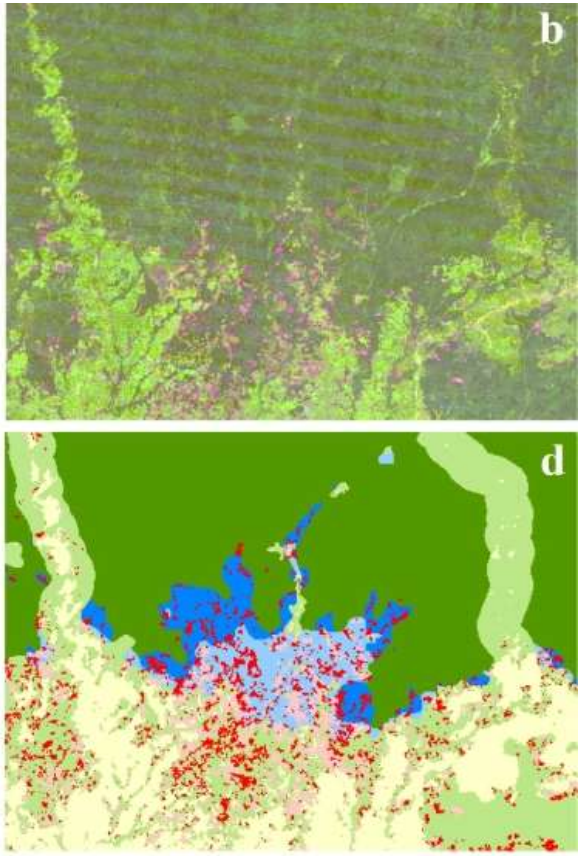
Where does deforestation occur?



Where does degradation occur?

More difficult to identify

- Difficult detect optically
- More sophisticated sensors only cover small areas
- Can be mapped indirectly (Potapov et al, 2008; Zhuravleva et al, 2013), but hard to validate
  - Uses intact forest
  - Not applicable in woodlands



Why does D&D occur?

http://kanat.jsc.vsc.edu/student/lind/main.htm

http://www.livescience.com/27692-deforestation.html

http://news.mongabay.com/2014/08/95-of-amazon-deforestation-happens-near-roads-or-major-rivers/

"Illegal export of rosewood in Madagsacar" by Erik Patel. Licensed under CC BY-SA 3.0 via Commons

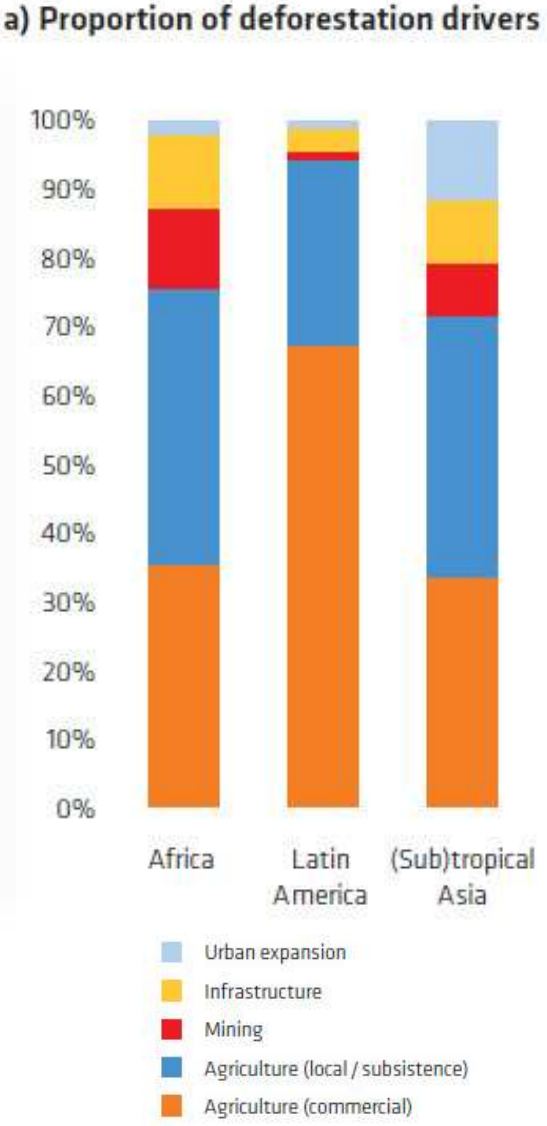
Charcoal production in Narok, Kenya (Bailis)

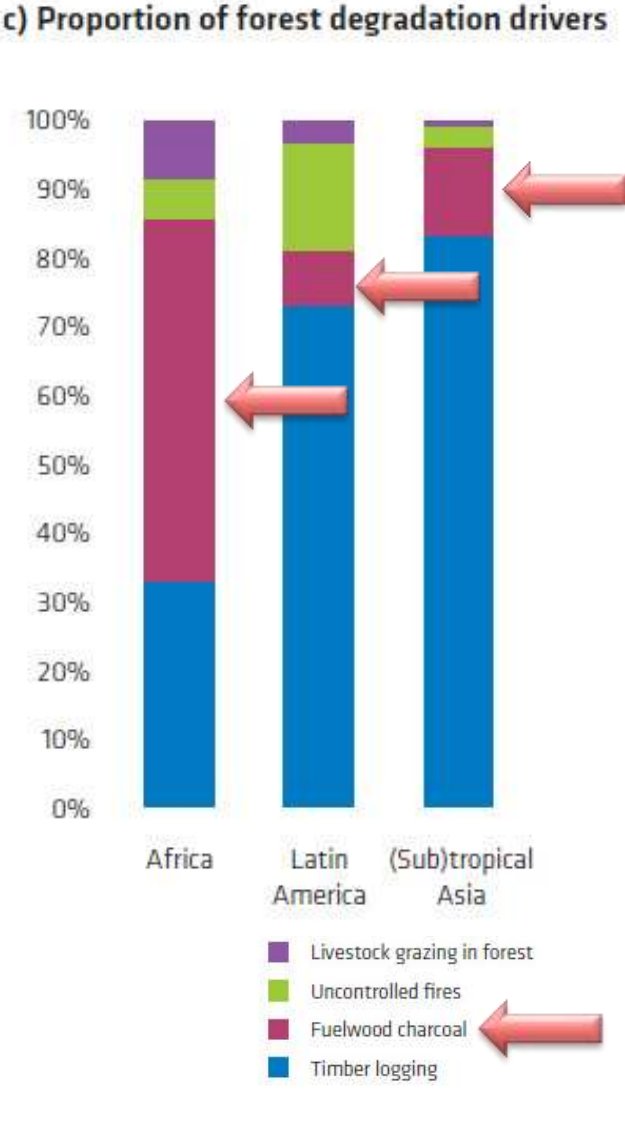
Why does D&D occur?

An assessment of deforestation and forest degradation drivers in developing countries

Noriko Hosonuma[1], Martin Herold[2], Veronique De Sy[2], Ruth S De Fries[3], Maria Brockhaus[4], Louis Verchot[5], Arild Angelsen[4,6] and Erika Romijn[1]

Hosonuma et al. (2012)





But D&D are rarely caused by just one factor…

- Geist and Lambin (2002) reviewed 152 cases of deforestation from 1880 to 1996:
  - Just 6% of cases had only 1 driver
  - > 50% had at 3 or more
  - Fuelwood mentioned in 28% of cases
  - Both *proximate* and *underlying* factors are relevant

Articles

Proximate Causes and Underlying Driving Forces of Tropical Deforestation

HELMUT J. GEIST AND ERIC F. LAMBIN

TROPICAL FORESTS ARE DISAPPEARING AS THE RESULT OF MANY PRESSURES, BOTH LOCAL AND REGIONAL, ACTING IN VARIOUS COMBINATIONS IN DIFFERENT GEOGRAPHICAL LOCATIONS

But D&D are rarely caused by just one factor…

…in most cases, three to four underlying causes are driving two to three proximate causes. A frequent pattern…stems from the necessity for ***road construction*** *that is associated with* ***wood extraction or agricultural expansion****, which is mostly driven by* ***policy and institutional factors*** *but also by* ***economic*** *and* ***cultural*** *factors (p. 147).*

Articles

Proximate Causes and Underlying Driving Forces of Tropical Deforestation

HELMUT J. GEIST AND ERIC F. LAMBIN

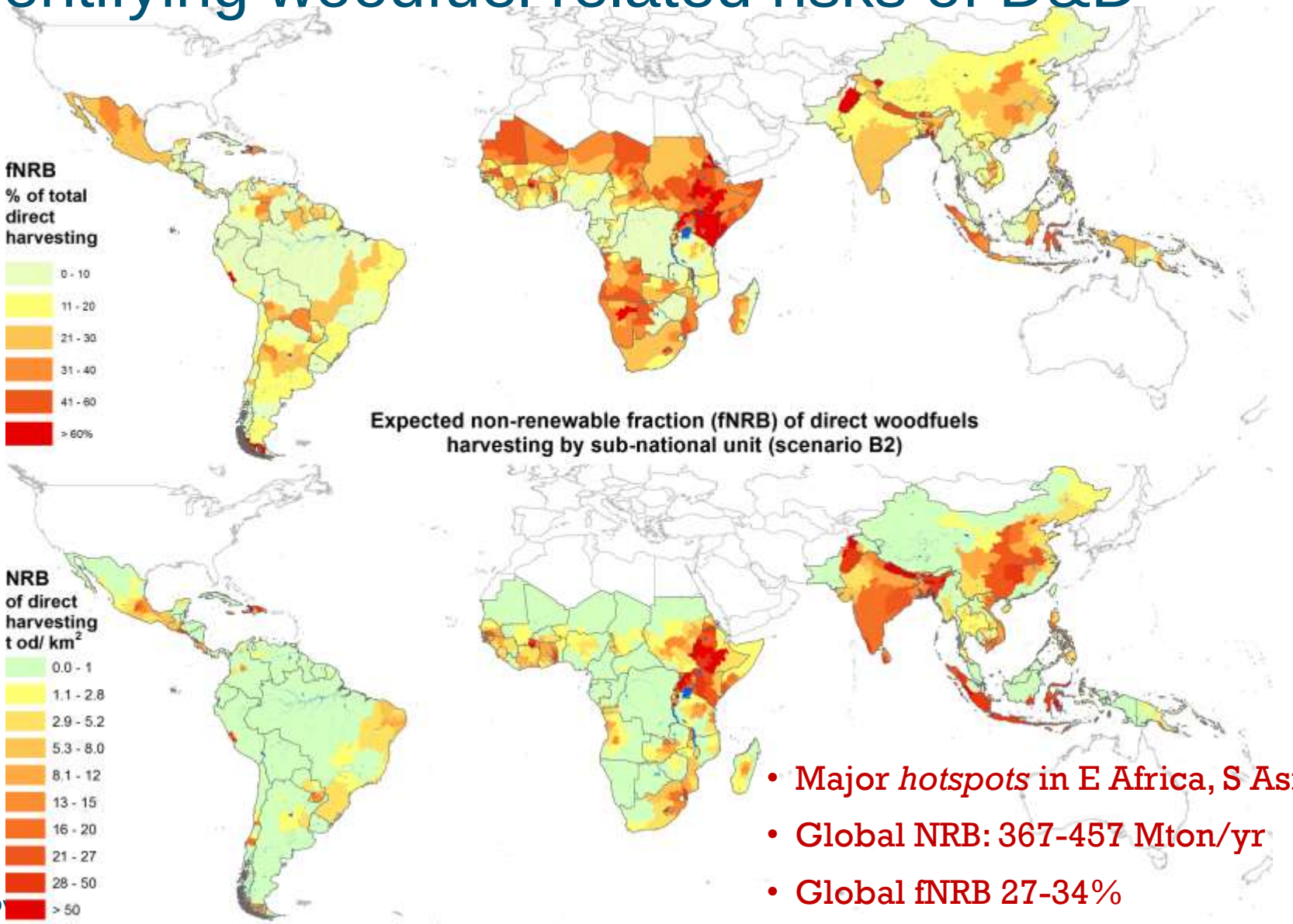
TROPICAL FORESTS ARE DISAPPEARING AS THE RESULT OF MANY PRESSURES, BOTH LOCAL AND REGIONAL, ACTING IN VARIOUS COMBINATIONS IN DIFFERENT GEOGRAPHICAL LOCATIONS

Do clean cooking solutions fit into REDD+?

- Think about where and why…
- We shouldn't simply identify cases of D&D and assume stoves are the solution…
  - We need a causal connection

http://earthenginepartners.appspot.com/science-2013-global-forest

Identifying woodfuel related risks of D&D



- Major *hotspots* in E Africa, S Asia
- Global NRB: 367-457 Mton/yr
- Global fNRB 27-34%

Examples of woodfuel-based REDD+ strategies

Fund	National strategies	Examples
FCPF Readiness Fund	17 of 31 Readiness Preparation Plans	• **Ethiopia**: Adoption of more efficient fuelwood stoves
Forest Investment Program	4 of 8 pilot countries	• **DRC**: Sustainable production, improved cookstove dissemination, improved charcoal making techniques and development of alternative energy sources.
FCPF Carbon Fund	9 of 11 ER-PINs	• **Nepal**: biogas plants to replace the need for woodfuel

- The majority of nat'l REDD+ strategies include woodfuel interventions

(borrowed from Charlie Parker of Climate Focus)

What's next?

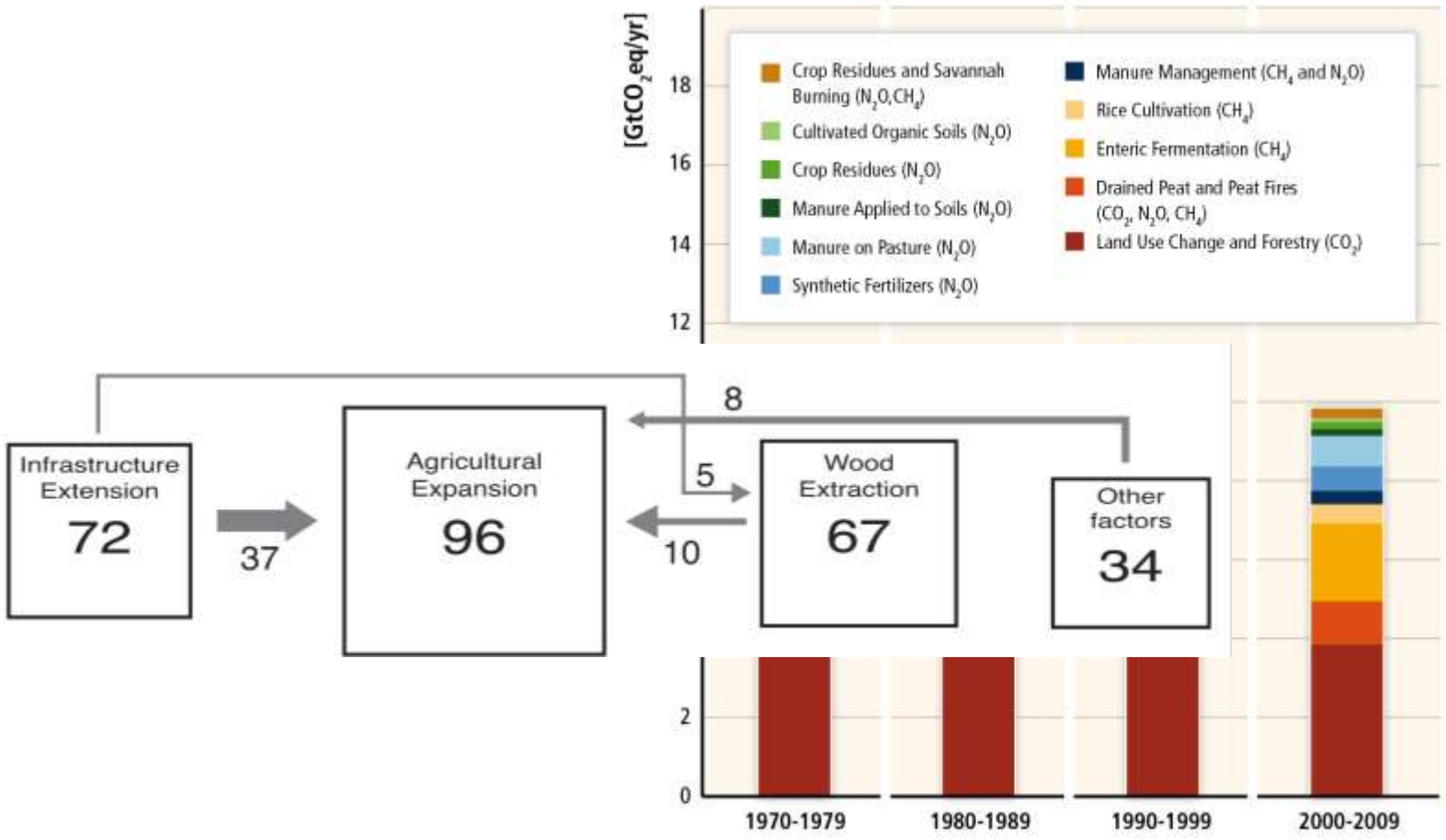
- Hear from colleagues about analyzing and implementing woodfuel-based REDD+ interventions

A closing question

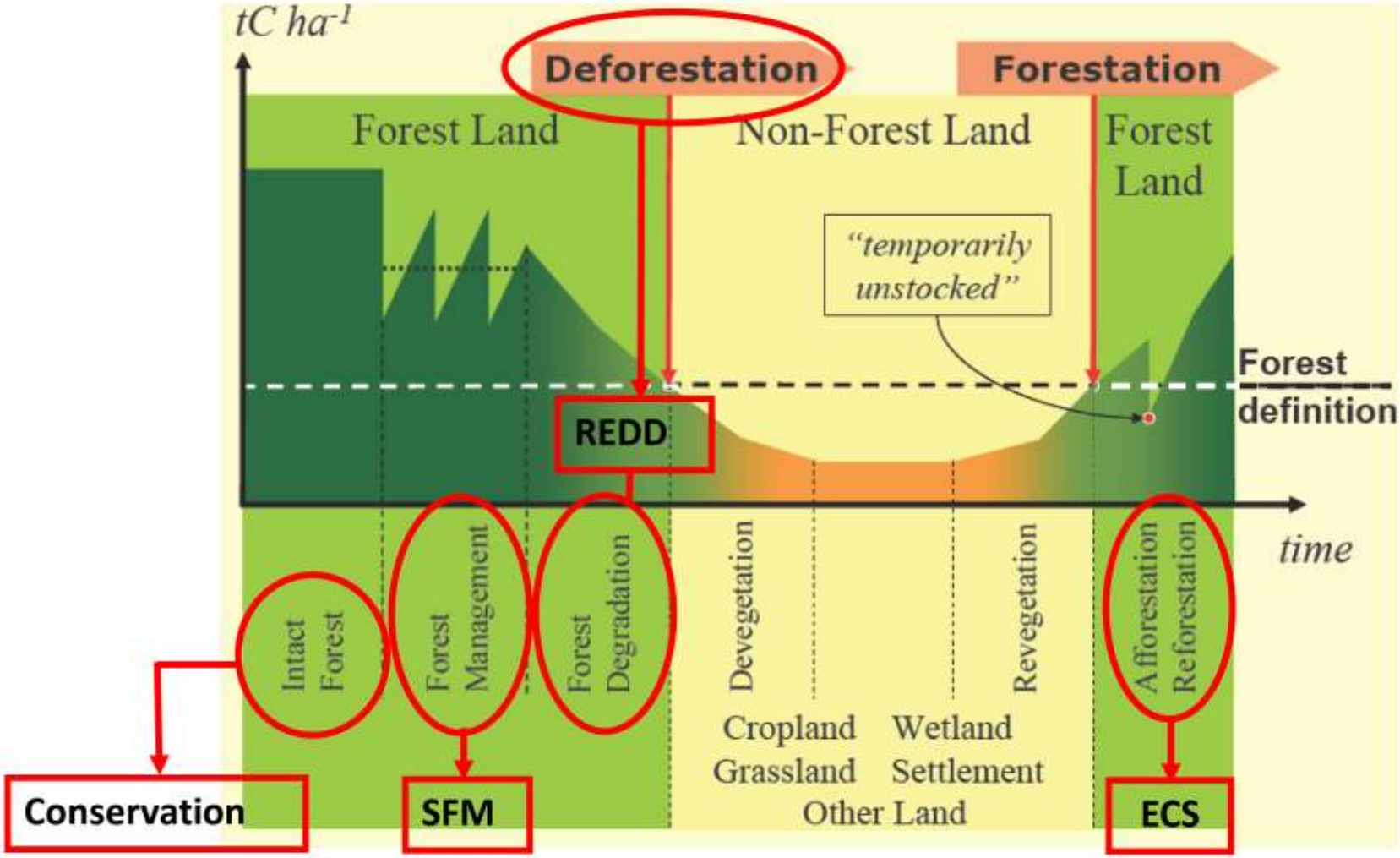
- Do you know of any *independently verified* examples of cases in which clean cooking interventions effectively reduced D&D?
  - Did they work in isolation?
  - Can we study them…please?

Thank You!

Land use change and climate change



Bali Action Plan: REDD+



Source: Pedroni (2009)