

Food, Fuel, Fibre and Forests (4Fs) - International Context



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Brazil 4Fs Dialogue
Capão Bonito
Brazil
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Food, Fuel, Fibre and Forests (4Fs) Initiative



An international multi-stakeholder dialogue that -


- bridges the forest and agriculture sectors
- focuses on improved land use decision making, and
- explores the key challenges in meeting the needs of an expanding human population with the finite resources of a single planet.



Commission on Sustainable Agriculture and Climate Change

“Business as usual in our globally interconnected food system will not bring us food security and environmental sustainability”

“The window of opportunity to avert a humanitarian, environmental and climate crisis is rapidly closing”



A billion people go hungry
Another billion suffer nutrient deficiencies
Another billion over-consume

**In 15 years there will be another
billion people to feed**

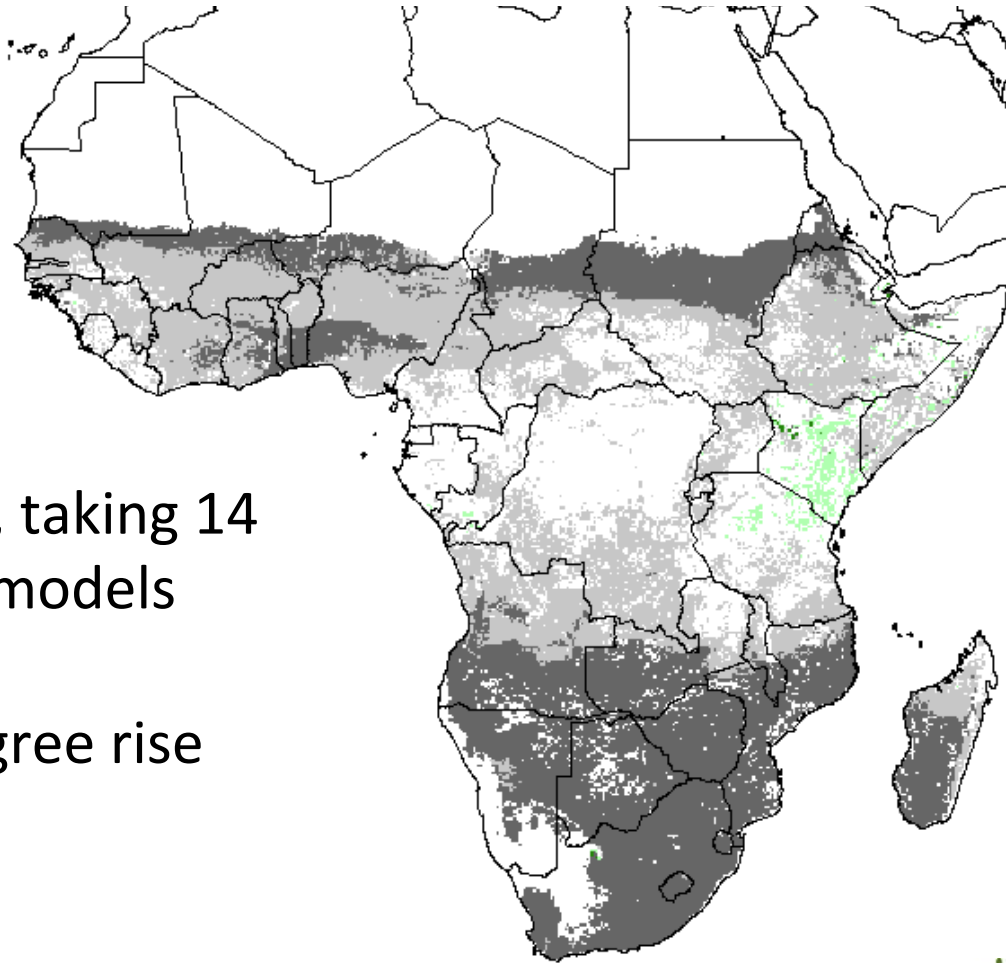
100% (+/- 11%) more food needed by 2050

with current trajectories of diets
& populations

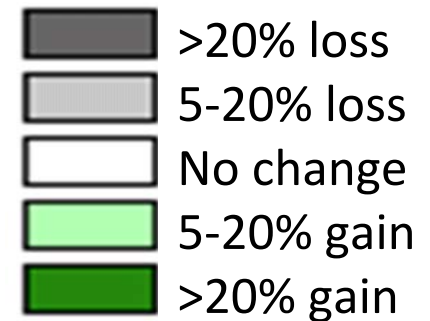
Length of growing season is likely to decline...

To 2090, taking 14
climate models

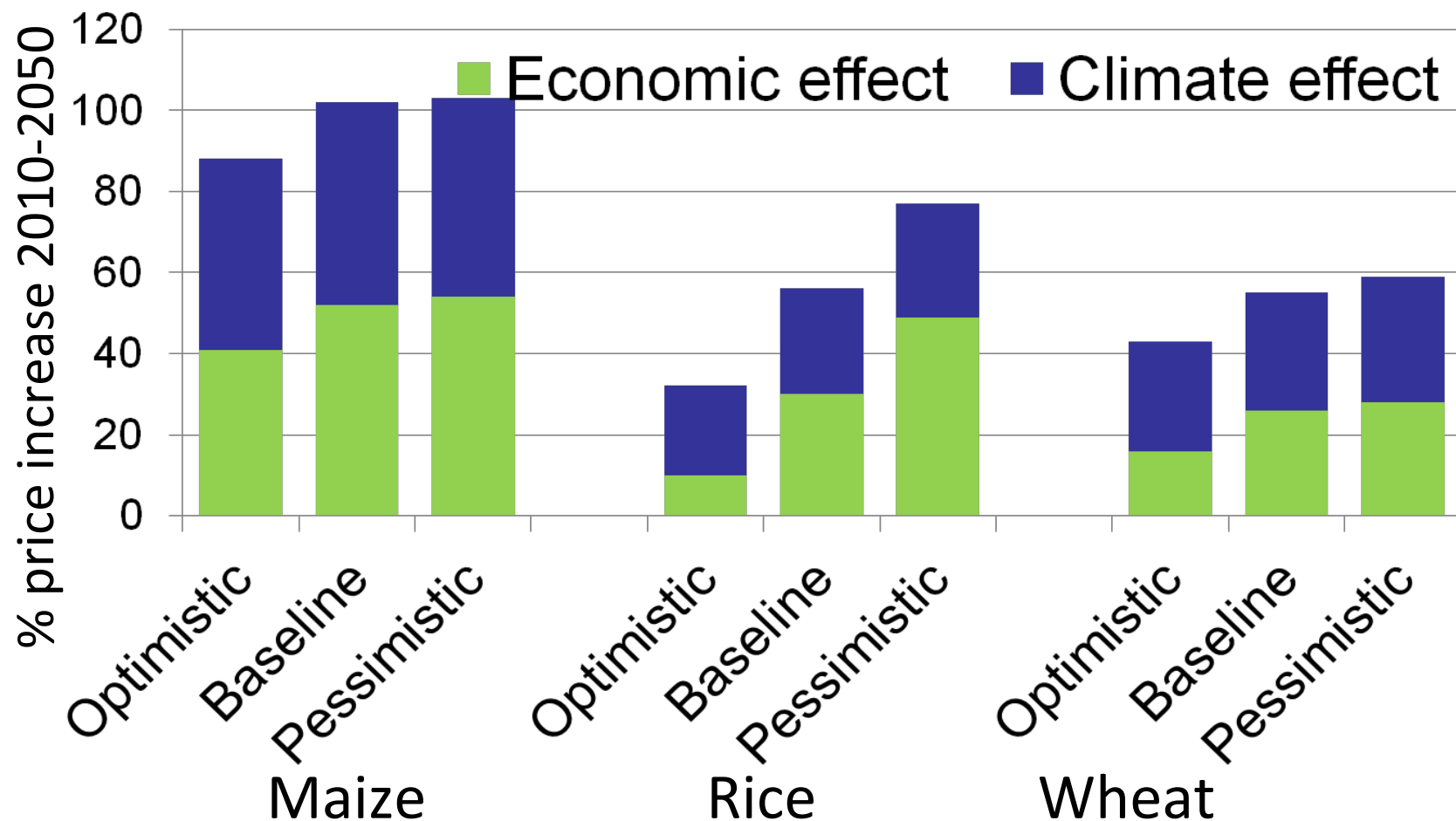
Four degree rise

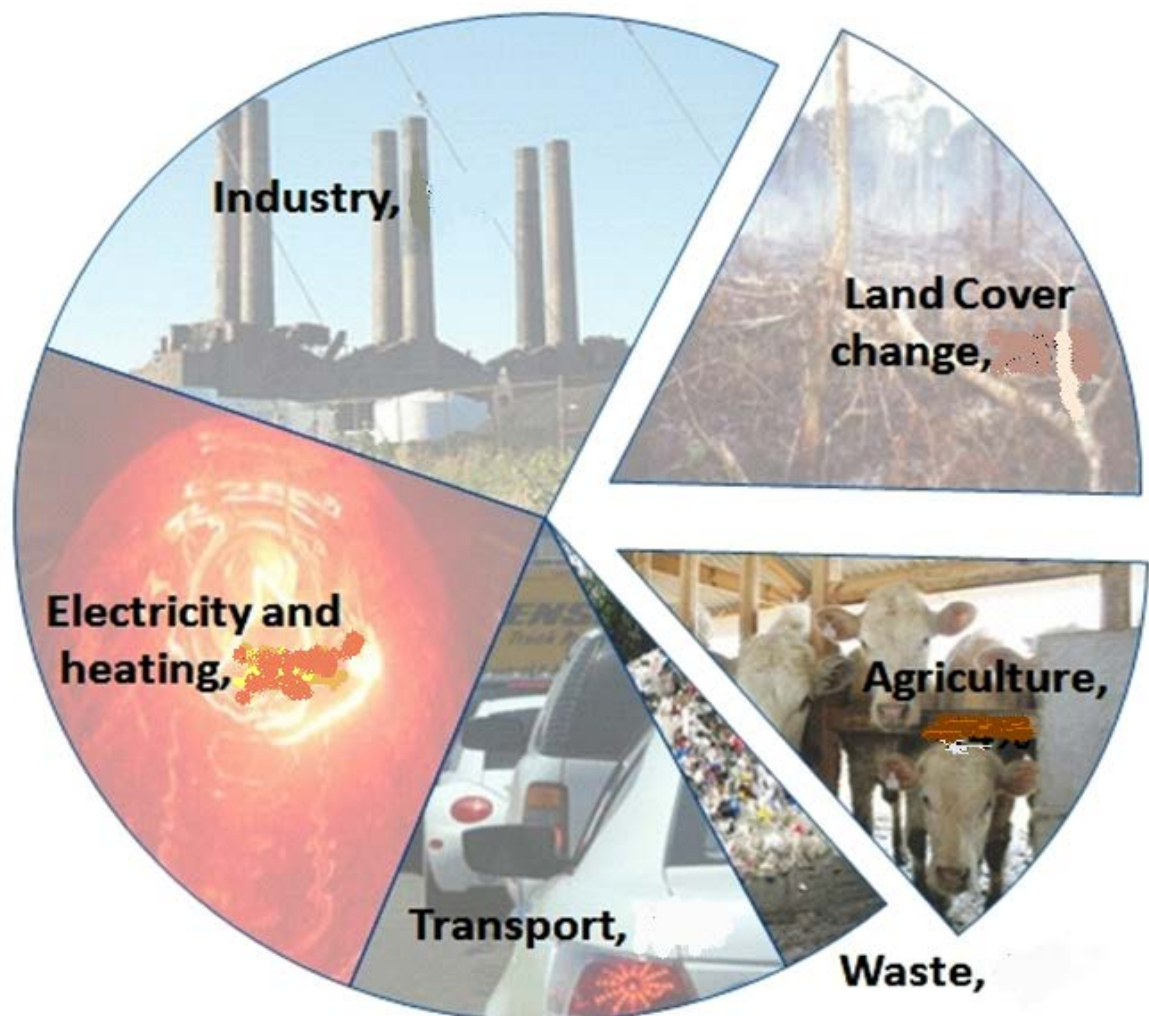


Length of growing
period (%)



Climate change will add greatly to price increases...





19-29%
global GHGs
from food
systems

Vermeulen et al. 2012
Annual Review of Environment and Resources (in press)



RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**





Living Forests Report

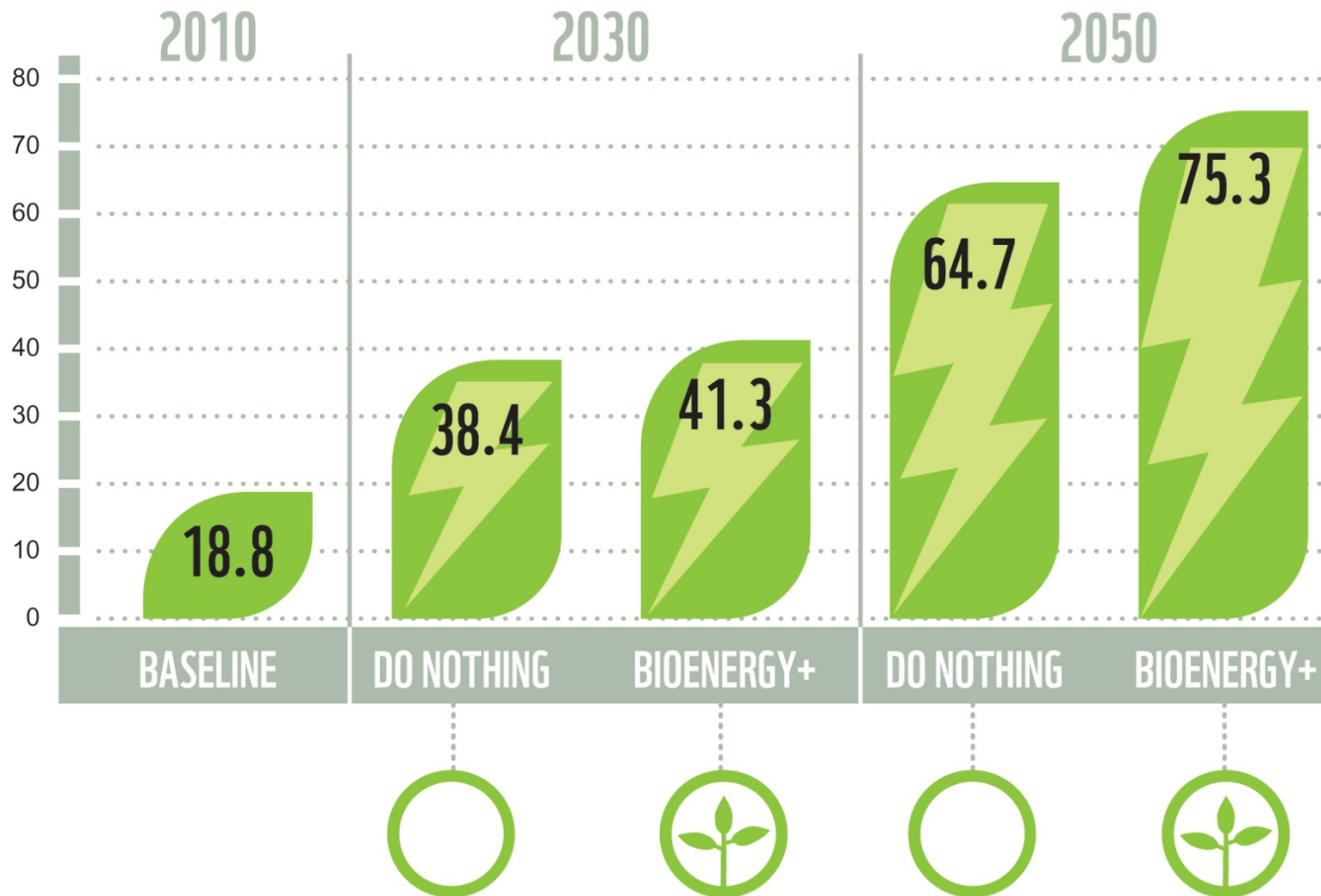
www.panda.org/livingforests



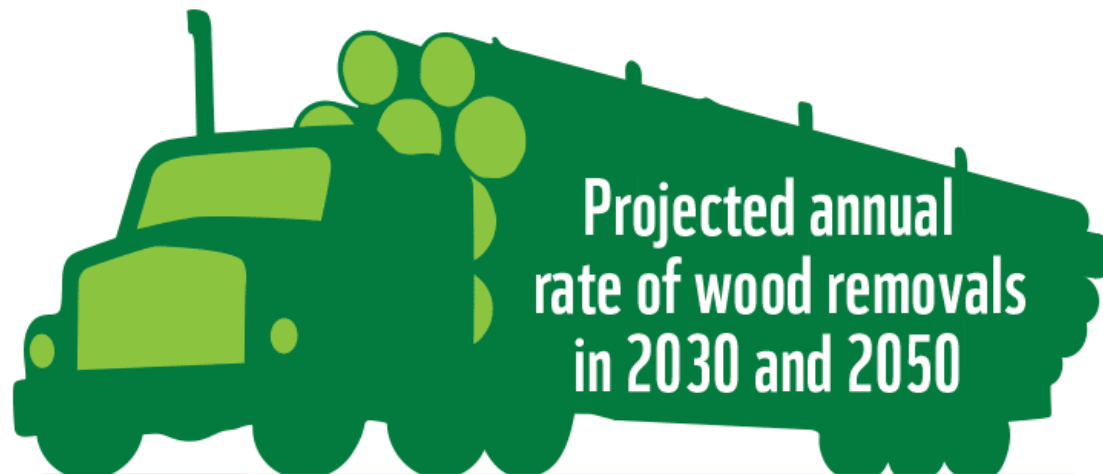
- Aims to catalyse debate on **the future role and value of forests** in a world where humanity is living within the Earth's ecological limits and sharing its resources equitably.
- Zero Net Deforestation and Forest Degradation (ZNDD) by 2020 presented as a target that reflects the scale and urgency with which threats to the world's forest biodiversity and climate need to be tackled.
- Relies on the "Living Forests Model" developed with the International Institute for Applied Systems Analysis, to explore the implications of various land-use scenarios.
- "Forests and Wood Products" Chapter out this month







Bioenergy use is projected to roughly double by 2030, and more than triple by 2050.



Final bioenergy supply from land-based feedstocks in Exajoules

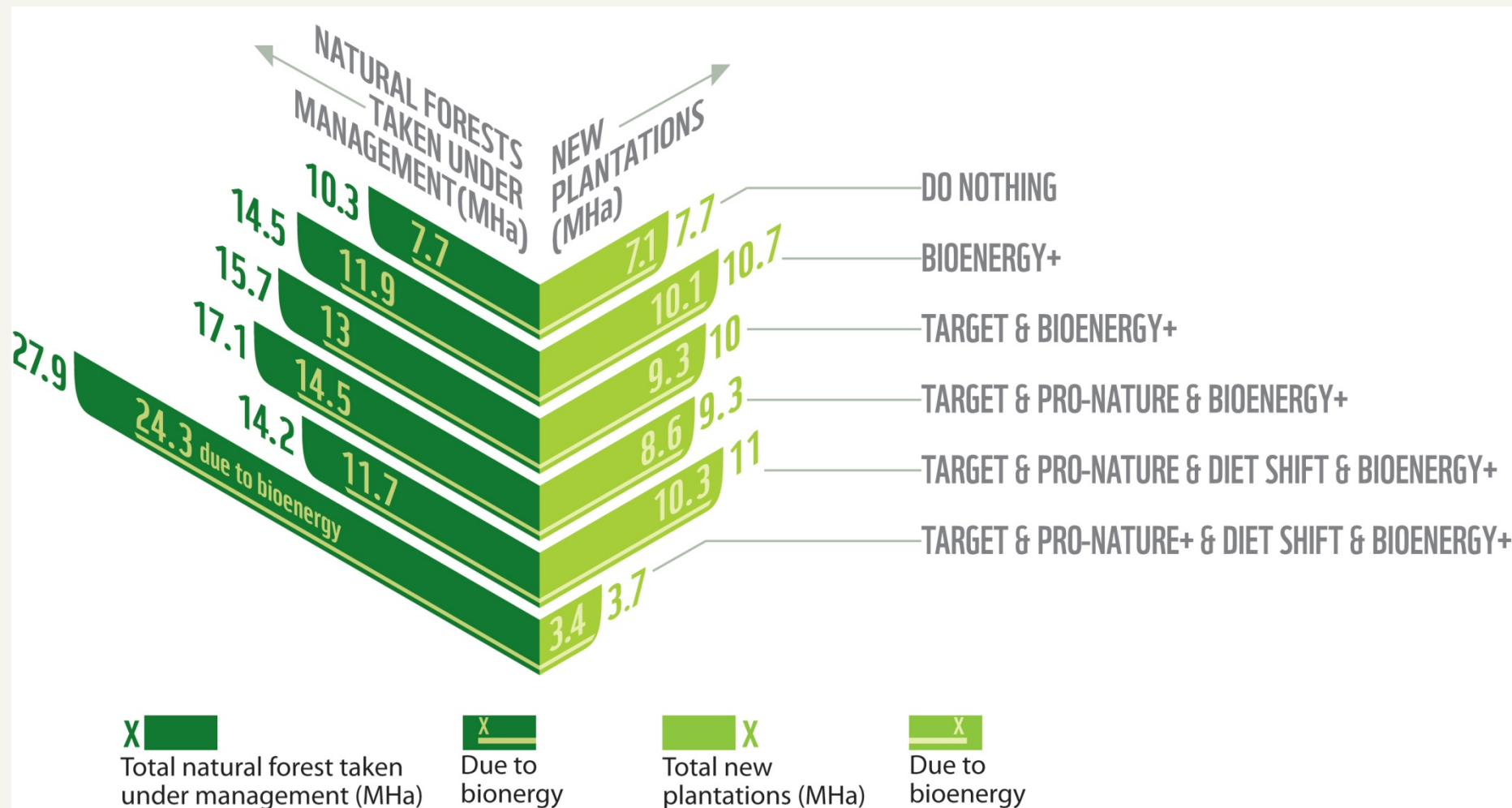


| | FAO 2010 | LIVING FORESTS MODEL | | | |
|--|--------------|---|---|---|--|
| | | 2030 | | 2050 | |
| | |  Do Nothing |  Bioenergy Plus |  Do Nothing |  Bioenergy Plus |
| Saw logs & veneer logs | 853 | 1,444 | 1,444 | 1,763 | 1,773 |
| Pulpwood | 527 | 754 | 754 | 905 | 893 |
| Other industrial roundwood ¹⁹ | 153 | 153 | 153 | 153 | 153 |
| Energy wood | 1,868 | 2,753 | 3,138 | 6,317 | 8,209 |
| Household fuelwood | | 2,064 | 2,064 | 2,218 | 2,054 |
| Total wood supply | 3,401 | 7,168 | 7,553 | 11,356 | 13,082 |

Units: millions of cubic metres (roundwood equivalent)



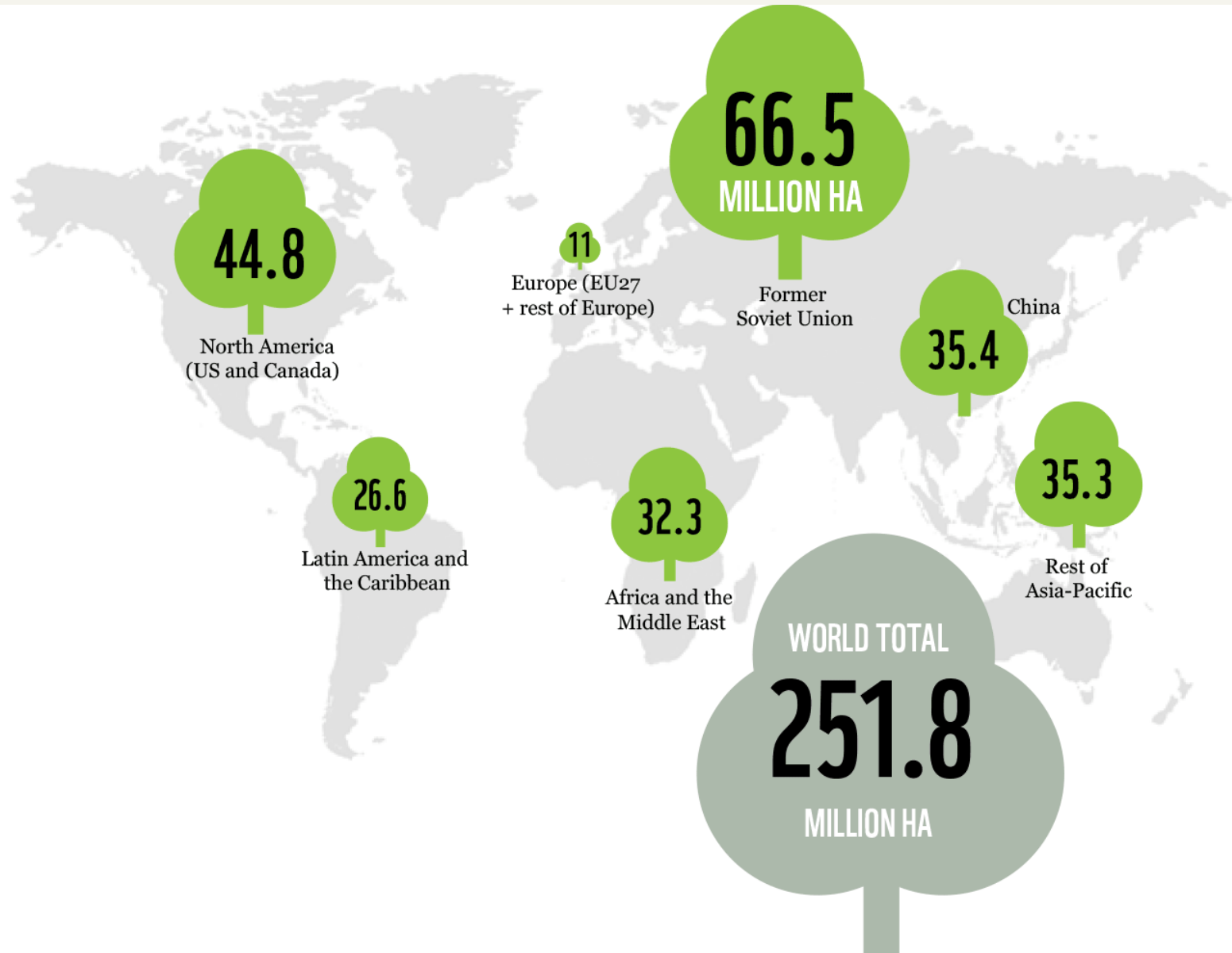
Is it better to log more forests or expand plantations?



Annual rate of expansion of plantations and natural forests managed for production, over the decade 2041-2050 under different scenarios.

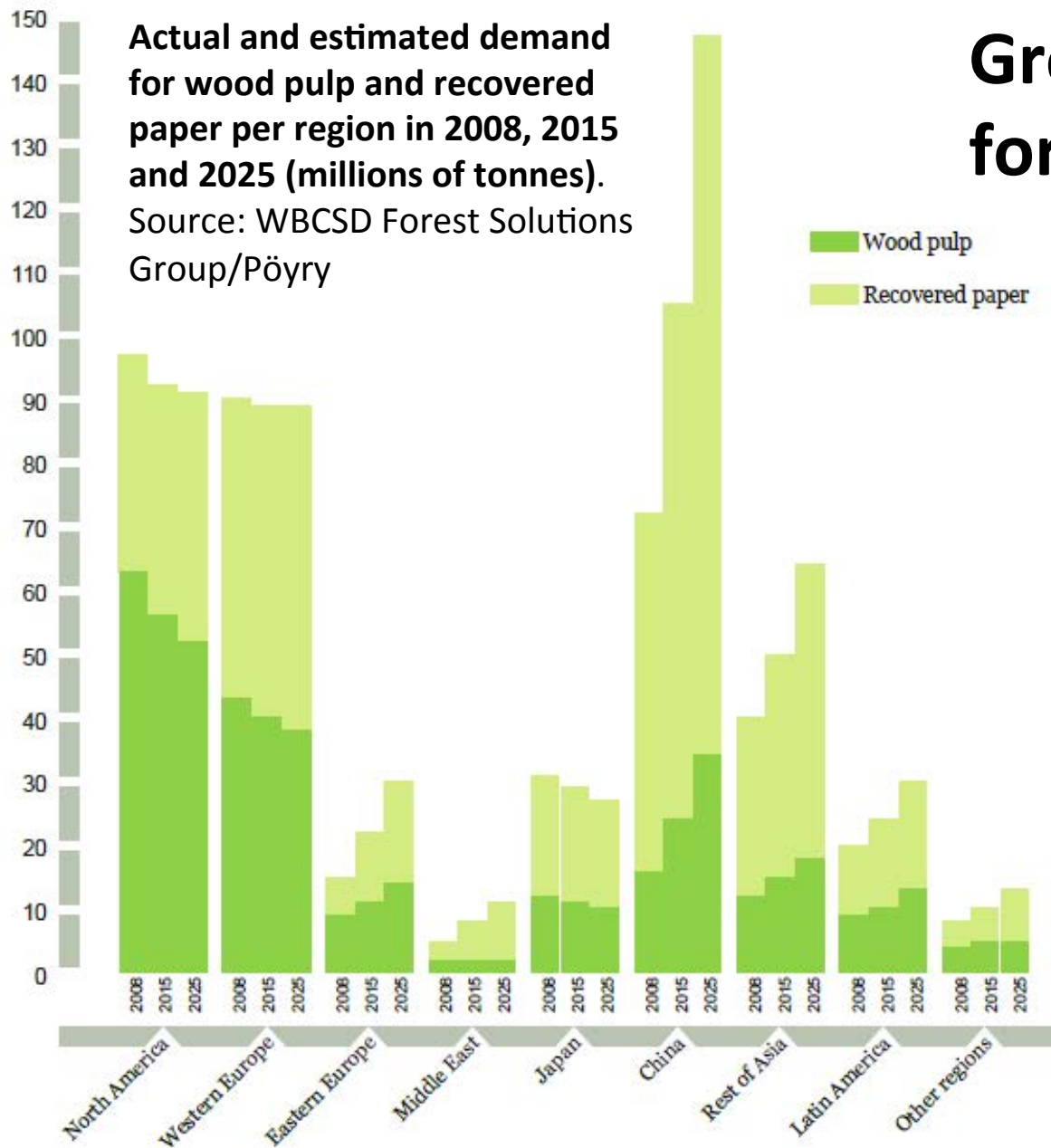


Projected expansion of tree plantations under the Living Forests Model's Target and Pro-Nature scenarios combined, between 2010 and 2050.



Growing demand for pulpwood

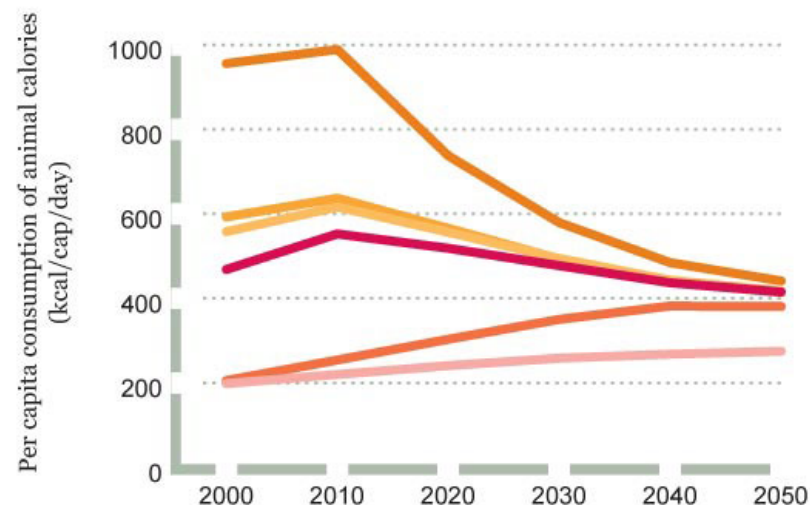
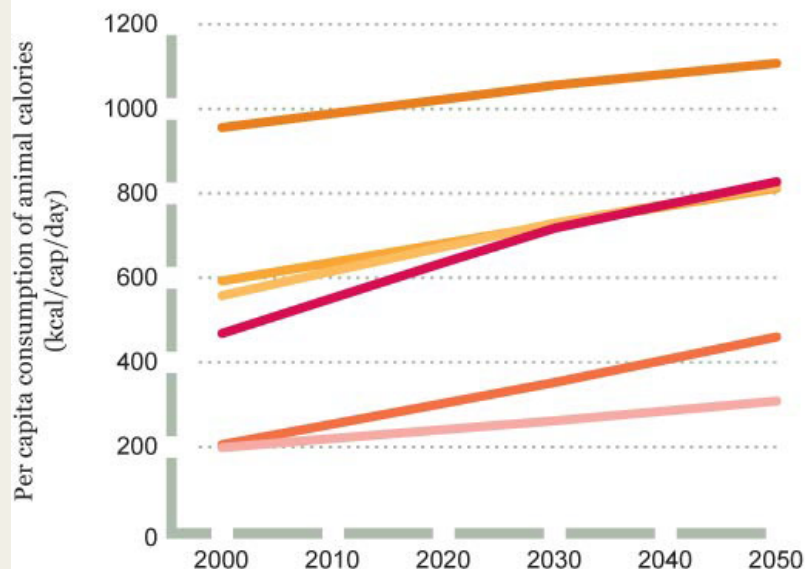
Actual and estimated demand for wood pulp and recovered paper per region in 2008, 2015 and 2025 (millions of tonnes).
Source: WBCSD Forest Solutions Group/Pöyry



High long-term growth in demand for packaging and tissue.

Low growth (even decline in some regions) for printing and writing papers.

Net growth in global demand for both virgin wood pulp and recovered paper despite decline in North America, Japan and Western Europe.



Projected animal calorie consumption per day between now and 2050 in different regions under the Do Nothing Scenario (left graph), where per capita consumption continues to follow the current path predicted by the FAO and the Diet Shift Scenario (right graph), where in OECD countries a gradual reduction is achieved through dietary changes and waste reduction, while allowing per capita consumption in other regions, such as South Asia and Sub-Saharan Africa, to increase.

- OECD
- Former Soviet Union
- Latin America
- Rest of Asia
- South Asia
- Africa

The 4Fs Challenge



Policy Innovation to:

- Enable forestry and farming practices that produce more with less land, water and pollution
- Encourage new consumption patterns that meet the needs of the poor while eliminating waste and over-consumption by the affluent
- Reconcile competing claims for land and water for different needs (e.g. food and energy security, biodiversity conservation, carbon sequestration)
- Ensure that Indigenous peoples can give or withhold their free, prior and informed consent to activities affecting their land and resources



Thank you

To find out more about TFD and the 4Fs, please go to:

www.theforestsdialogue.org

To find out more about the Living Forest Report, please go to:

www.panda.org/livingforests

