



Faculty of Science

IEA Bioenergy



Sustainability governance along the bioenergy supply chains

Experiences and outlook for the future

Inge Stupak and Tat Smith

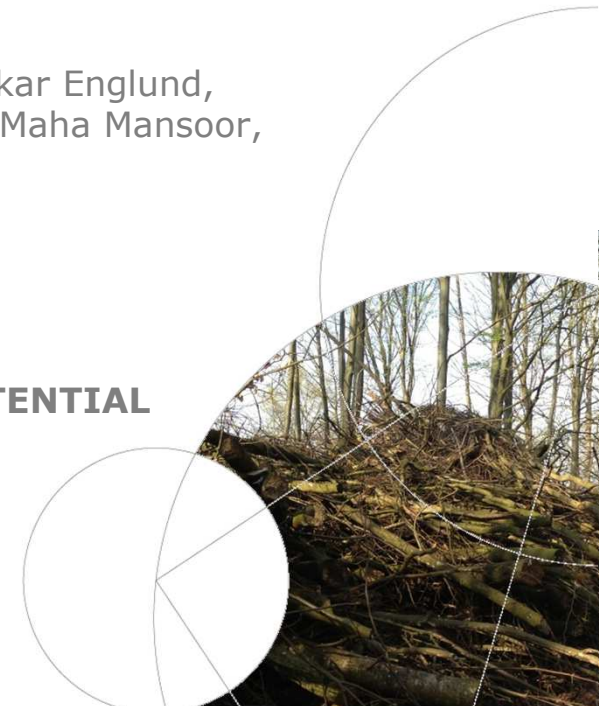
Göran Berndes, Marilyn Buford, Virginia Dale, Gustaf Egnell, Oskar Englund, Jamie Joudrey, Keith Kline, Hans Langeveld, Brenna Lattimore, Maha Mansoor, Dan Neary, Jörg Schweinle, Evelyne Thiffault

IEA Bioenergy Conference 2015

REALISING THE WORLD'S SUSTAINABLE BIOENERGY POTENTIAL

Session V - Biomass feedstocks for energy markets

27 October 2015, Berlin, Germany



(EVAPORATION OF) TRUST

Trust in the four institutions, 2014 vs. 2015:

- Trust in NGOs decreased from 66% to 63%
- Trust in business decreased from 59% to 57%
- Trust in media decreased from 53% to 51%
- *Trust in governments increased from 45% to 48%*

2015 Edelman Trust Barometer Executive Summary

....those with the decision making power in the industry, the wider economy, politics and policy have yet to improve their relationship to those they are trying to impress, should they finally be awarded the share of the trust they are courting...

<http://www.euroscientist.com/trust/>



IMPACTS AND OPPORTUNITIES



Climate change mitigation and adaptation



Clean water



Biodiversity conservation



'Good' soil quality

DECADES OF EFFORTS.....

- 1941 - American Tree Farm System (ATFS)
- 1976 - California Certified Organic Farmers (CCOF)
- 1983 - First International Tropical Timber Agreement (ITTA)
- 1990 - Ministerial Conferences on Protection of Forests in Europe (MCPFE)
- 1992 - Forest Principles at UNCED in Rio
- 1992 - Sustainable Agricultural Network (SAN)
- 1993 - Forest Stewardship Council (FSC)
- 1994 - Sustainable Forestry Initiative (SFI)
- 1996 - Canadian Standards Association's standard on SFM (CSA)
- 1997 - GlobalGAP (previously EUREPGAP)
- 2000 - Programme for the Endorsement of Forest Certification schemes (PEFC)
- 2002 - Green Gold Label (GGL)
- 2004 - Roundtable for Sustainable Palm Oil (RSPO)
- 2005 - Laborelec
- 2009 - EU Renewable Energy Directive (EU RED)
- 2010 - International Sustainability and Carbon Certification (ISCC), Bonsucro...
- 2011 - Round Table on Responsible Soy (RTRS), RSB, 2BSvs...
- 2013 - Sustainable Biomass Partnership (SBP)
- 2015 - Sustainability criteria for bioenergy (ISO, ISP/FDIS 13065)

Forestry
Agriculture
Solid biomass
 Mainly liquid biomass
Solid and liquid biomass

Stupak et al. 2011
 Stupak et al. 2015
 Mansoor et al. 2015

WHERE WE ARE NOW.....

- Lack of trust, still, among several leading NGOs in government and business-led initiatives
- Only 10% of the forest area is certified globally, most of this in temperate and boreal regions, and there is almost no certified agricultural land
- Difficulties in getting alternatives to full certification accepted by NGOs and forest certification schemes, e.g. SFI fibre sourcing not approved by PEFC
- Difficulties with quantification of impacts, e.g. carbon balances and indirect land-use changes, leading to lack knowledge about effectiveness of applied and proposed measures (e.g. liquid biofuels in the EU).
- Missing meta-standards for solid biomass at EU (and global) levels, that harmonize requirements from different countries and for different end-uses (mentioning however the efforts by SBP for electricity producing utilities).
- Institutional capacity and law enforcement is inadequate in some countries, causing e.g. illegal logging, deforestation, forest degradation and poor agricultural practices
- Governance poor coordinated among different sectors, e.g. energy, forestry, agriculture, environment, waste, leading to both overlapping and counterproductive requirements (e.g. waste and energy legislation)
- Governance poorly address how ecosystems can best adapt to climate change, and on how to handle or avoid climate change induced disturbances

See Smith et al. 2015, Mansoor et al. 2015, Stupak et al. 2015 and other Task 43 publications



THE GOVERNANCE TRIANGLE

- 1. States → Laws
- 2. Firms → Self regulation
- 3. NGOs → Third party regulation

Some regulation forms (co-regulation) include two or all three actors e.g. forms of transnational regulation

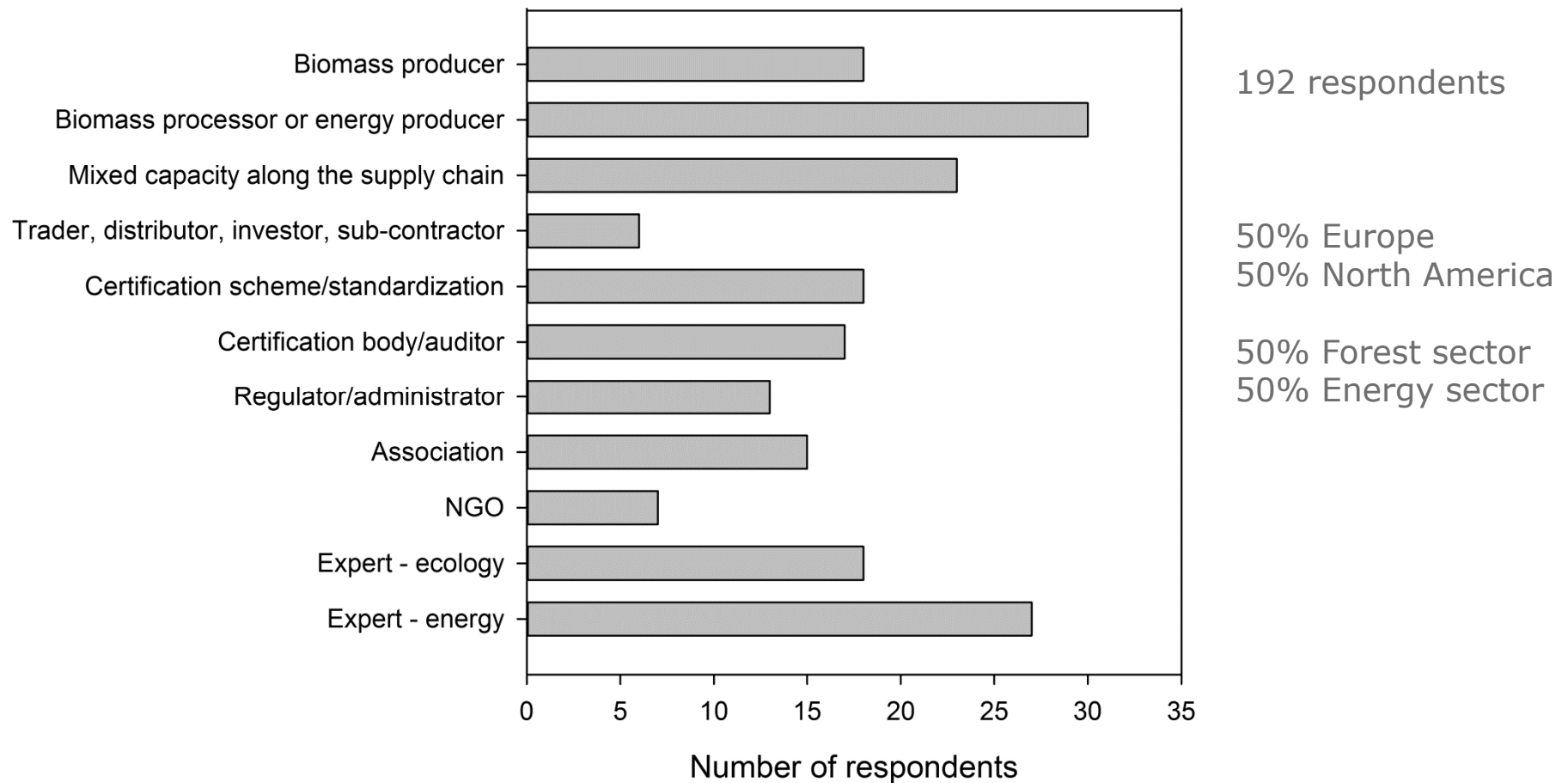


INCREASING PRIVATE AND CO-REGULATION

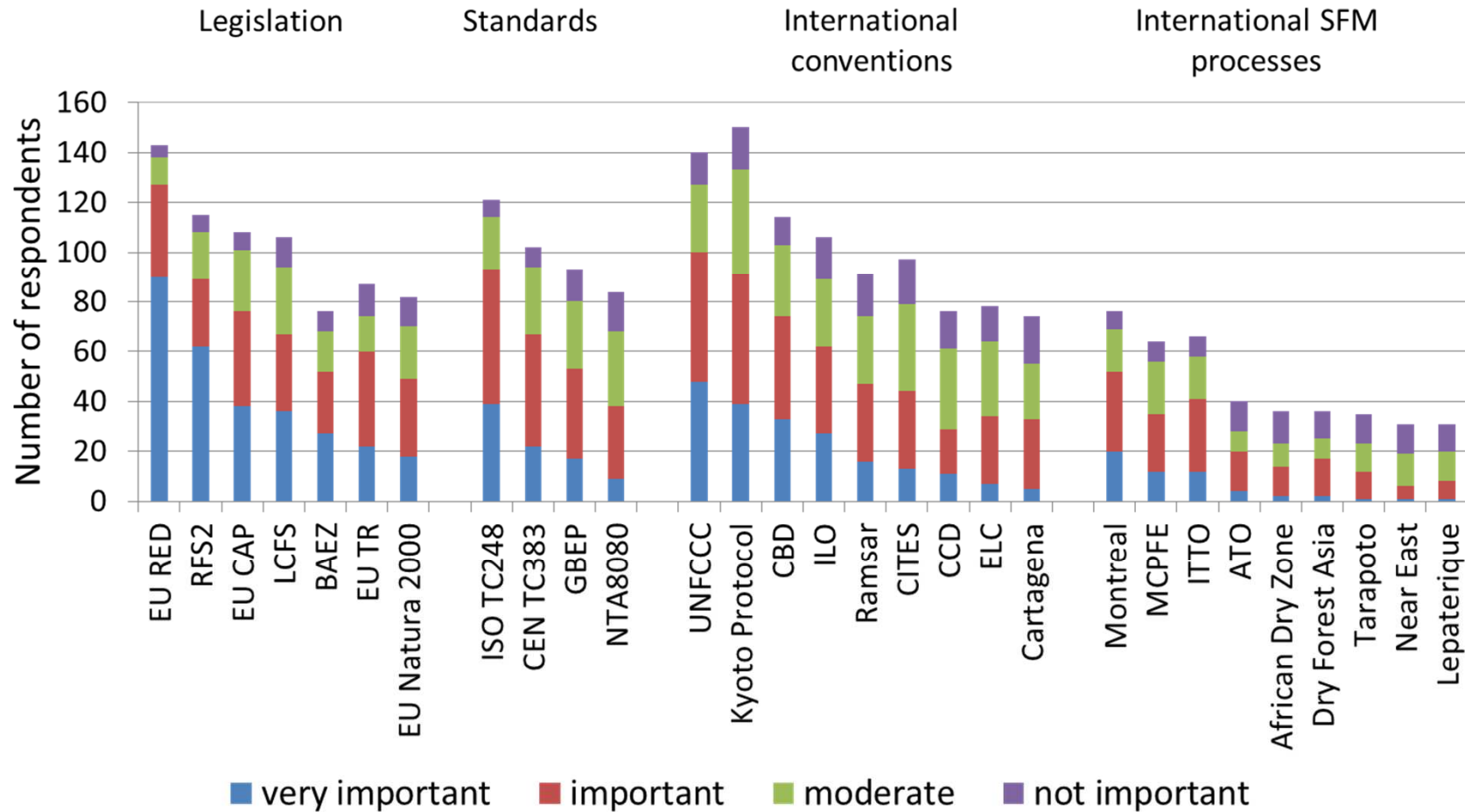
- Before mid-1980:
 - Mostly state regulation (laws)
- Mid-1980s-mid 1990s:
 - Emerging self-regulation by companies and third-party regulation
- After mid-1990s:
 - Continued increase in private regulation (self-regulation by companies and third-party regulation) + emerging co-regulation and transnational forms of regulation



INTERNATIONAL SURVEY



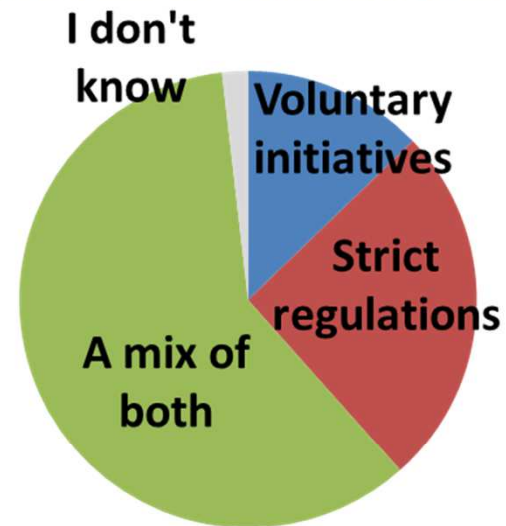
WHICH GOVERNANCE IS IMPORTANT?



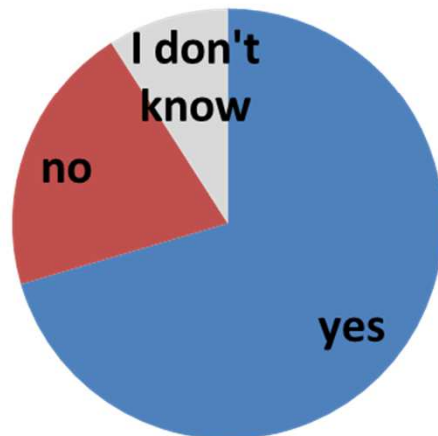
Are the above initiatives (together) adequate?



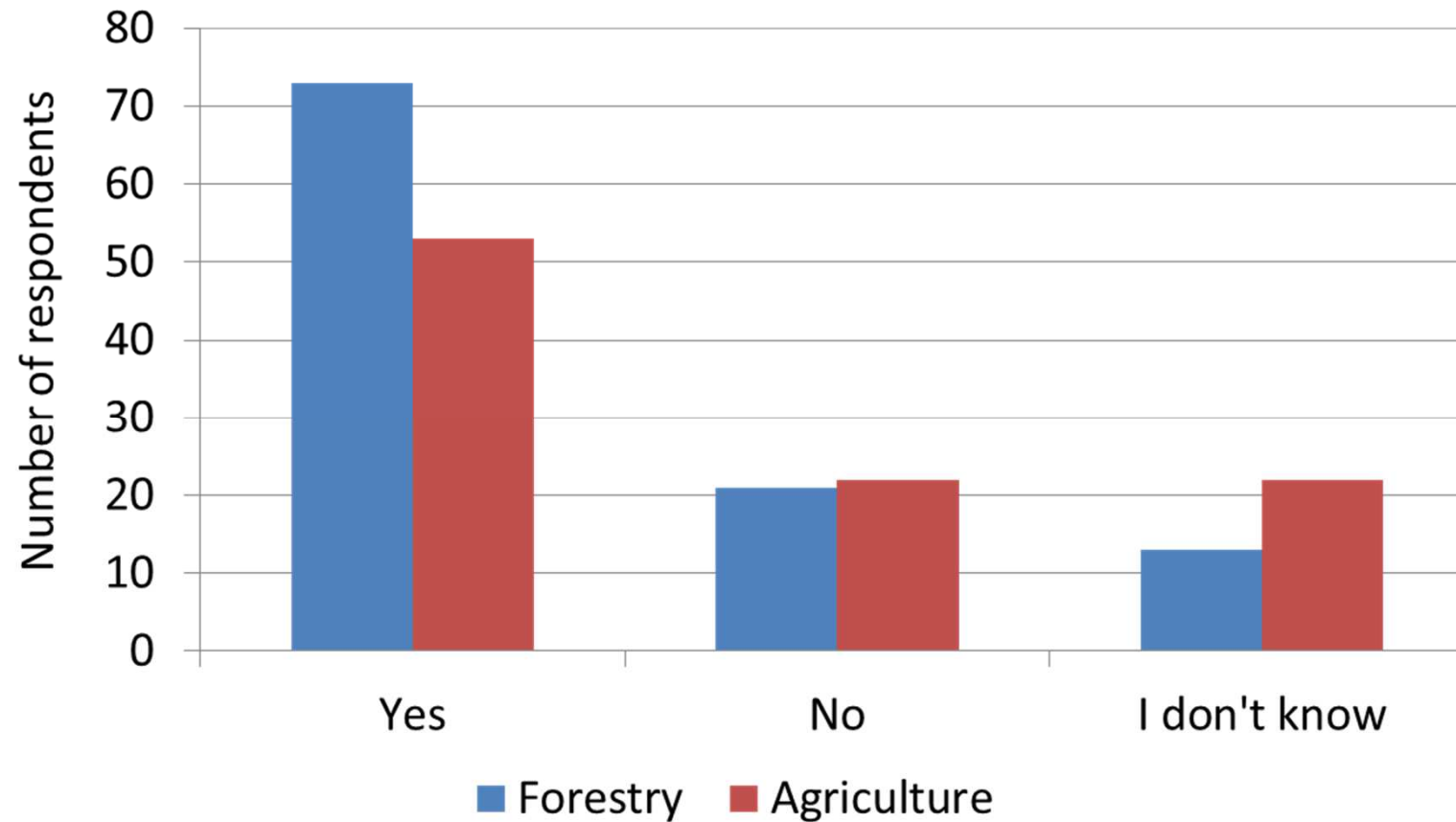
Voluntary initiatives or regulatory requirements?



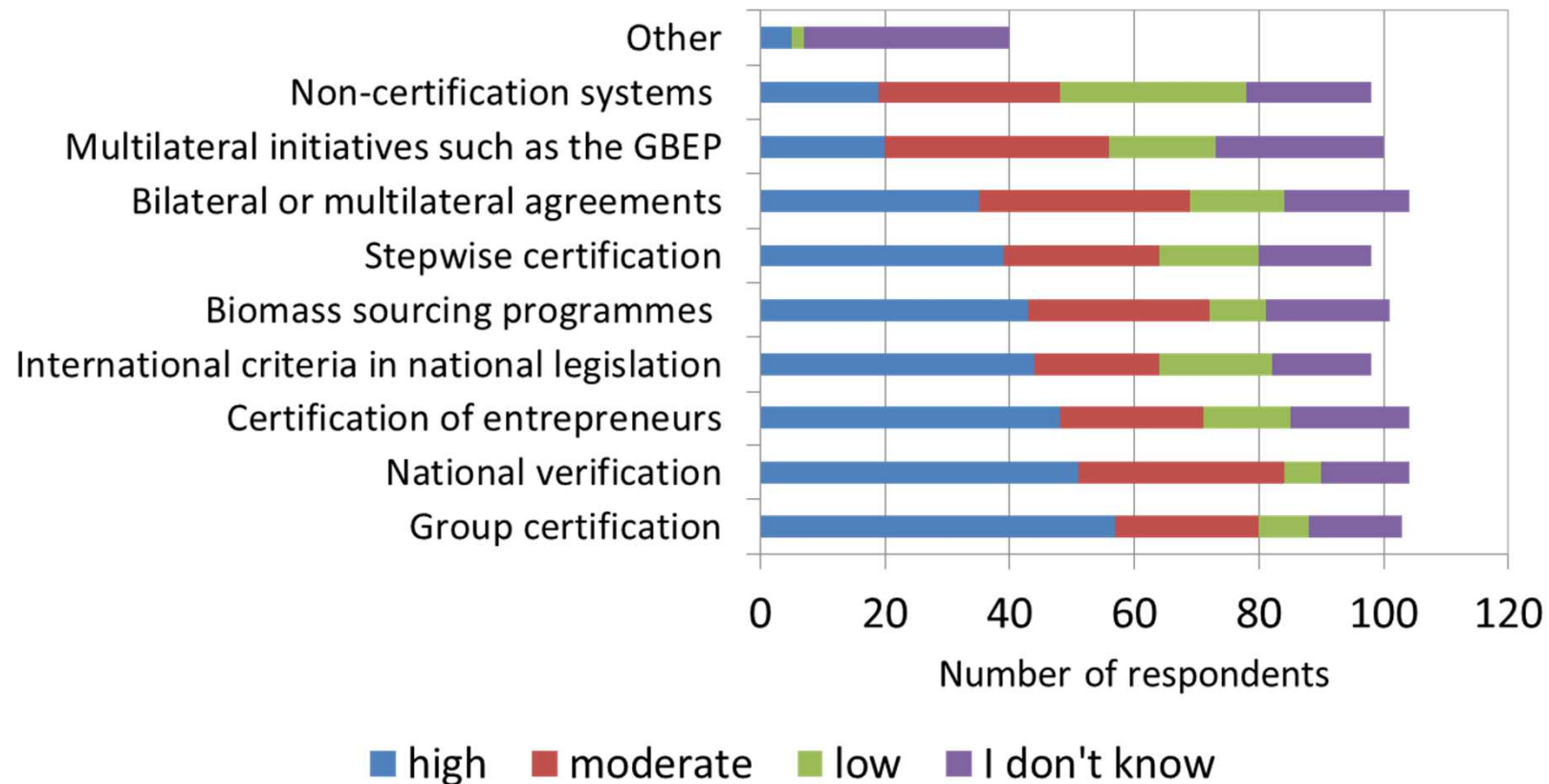
Is voluntary certification essential?



IS NON CERTIFIED LAND A PROBLEM?



ALTERNATIVES TO CERTIFICATION – ARE THEY EFFICIENT?



DIFFERENT TYPES OF VERIFICATION

Approaches to auditing of Sustainable Forest Management

- Auditing of all certified utilities
- Auditing of a number of randomly selected certified utilities (group certification)
- Risk-based approaches, due diligence (e.g. responsible sourcing, regional verification)

Chain of Custody types

- Identity preserved
- Physical segregation
- Mass balance
- Book and claim

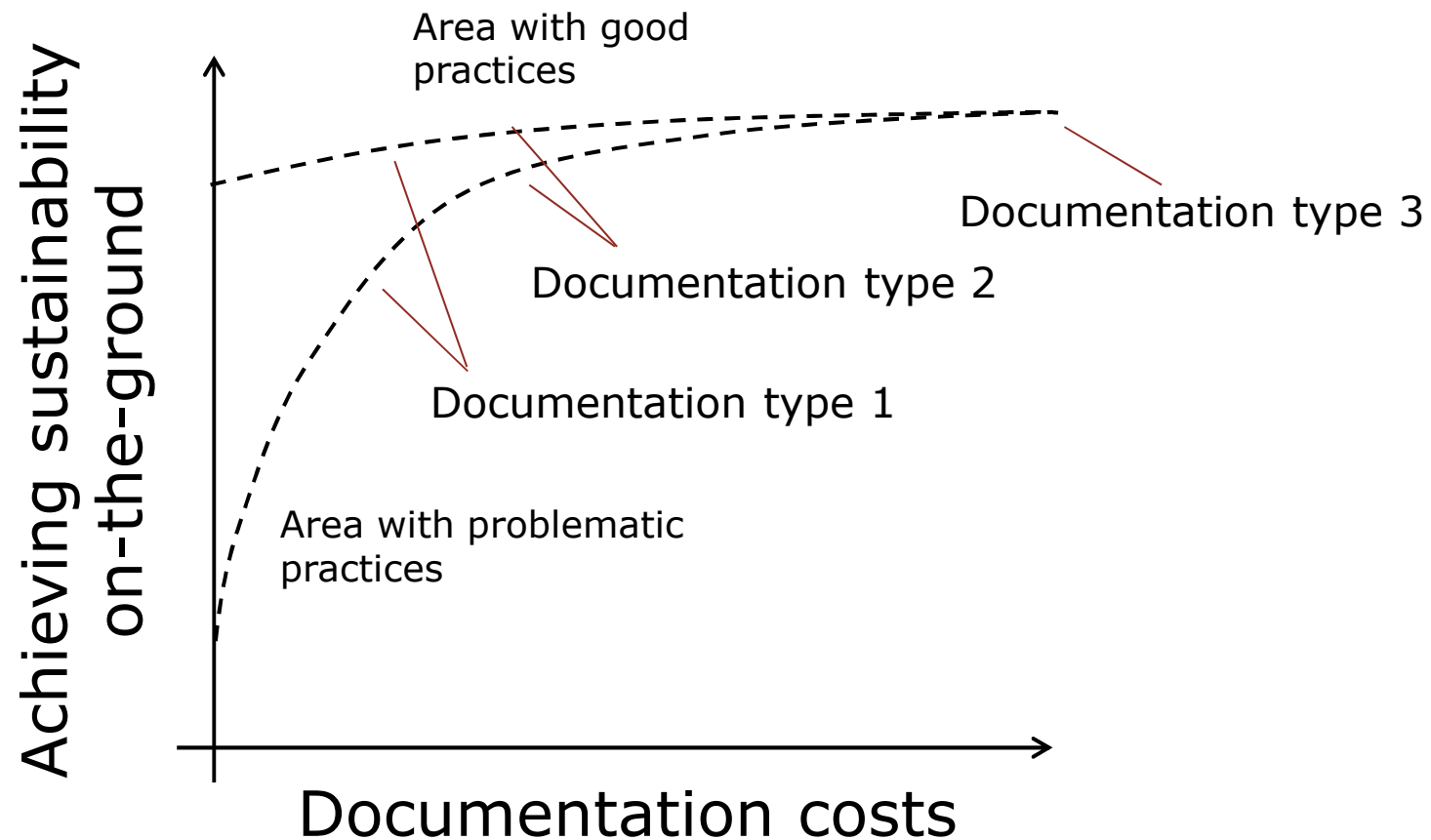


FOREST CERTIFICATION

- Canada, 69% of forest area under management is certified
- Finland, >90% of the forest area is PEFC certified
- Sweden, about 50-80% of the productive forest area is certified
- Southeastern USA, about 17% of the forest area is certified



RELATIONSHIP BETWEEN EFFECTIVENESS AND COSTS?



CHALLENGES TO GOVERNANCE

- Uptake of certification
- Build trust
- Getting alternatives to certification accepted
- Quantification of impacts
- Institutional capacity and law enforcement
- Coordination of governance among involved sectors
- Meta-standards for solids
- Climate change

WORK PROPOSED BY TASK 43 FOR 2016-2018

- Examine relationship between costs and effectiveness in achieving sustainability requirements of different certification systems and alternatives to certification
- Examine quality the stakeholder involvement
- Develop methodologies for quantification of sustainability criteria and indicators, including iLUC and carbon debt
- Compare governance from all sectors, to uncover overlaps and contradictions and propose ways to balance goals from different sectors
- Compare requirements from different countries and for different end-uses to give input to a global meta-standard for sustainable biomass, (for the benefits of the bio-economy).
- Propose criteria and indicators to support handling and avoiding climate change induced disturbances.



THANK YOU!

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