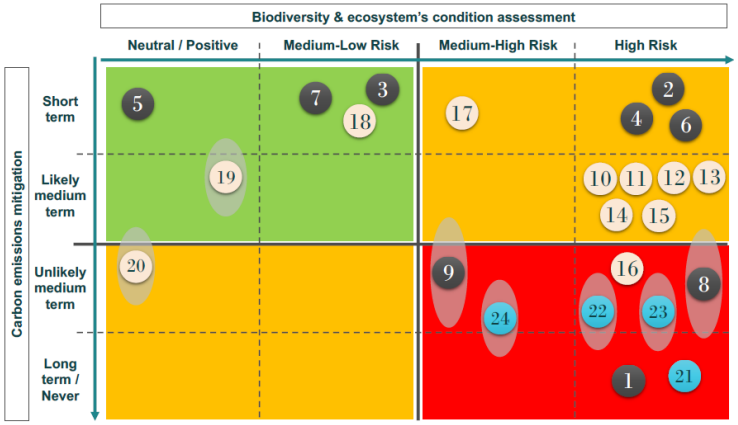
Climate smart forestry and ways to avoid the "lose-lose options"

Gert-Jan Nabuurs

15 April 2021

A 10 min perspective on Giuntoli et al. 2021: "The use of woody biomass for energy production in the EU".

KSLA, EFI, IEA-bioenergy workshop



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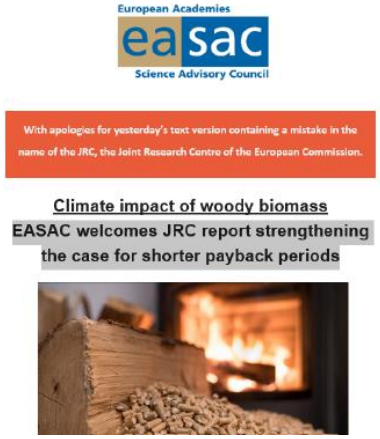
The “lose” options in Giuntoli et al.

- Convert high biodiversity forest /high C stocked forest to intensive form
- Extract (too) much fine woody debris /stumps/residues
- Af-/reforest on high biodiverse grass/heath sites
    - All quite non European or theoretical
        - Exploited by both sides



- Not in overview scheme: closer-to-current-practice-risks: <u>harvest rising too high</u>, or <u>shifts in wood assortment</u> allocation *(mentioned in txt)*

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As part of the future risk options (and how criteria can avoid these) JRC (probably) had to look into a variety of worst case scenarios, but the 'normal' management is ignored

Sorting in the forest

OSB or biomass depending on regional (100 km) market

Photo: GJ Nabuurs, Overloon, 9 Dec 2020

Douglas sawlogs; close to 50% will be saw losses

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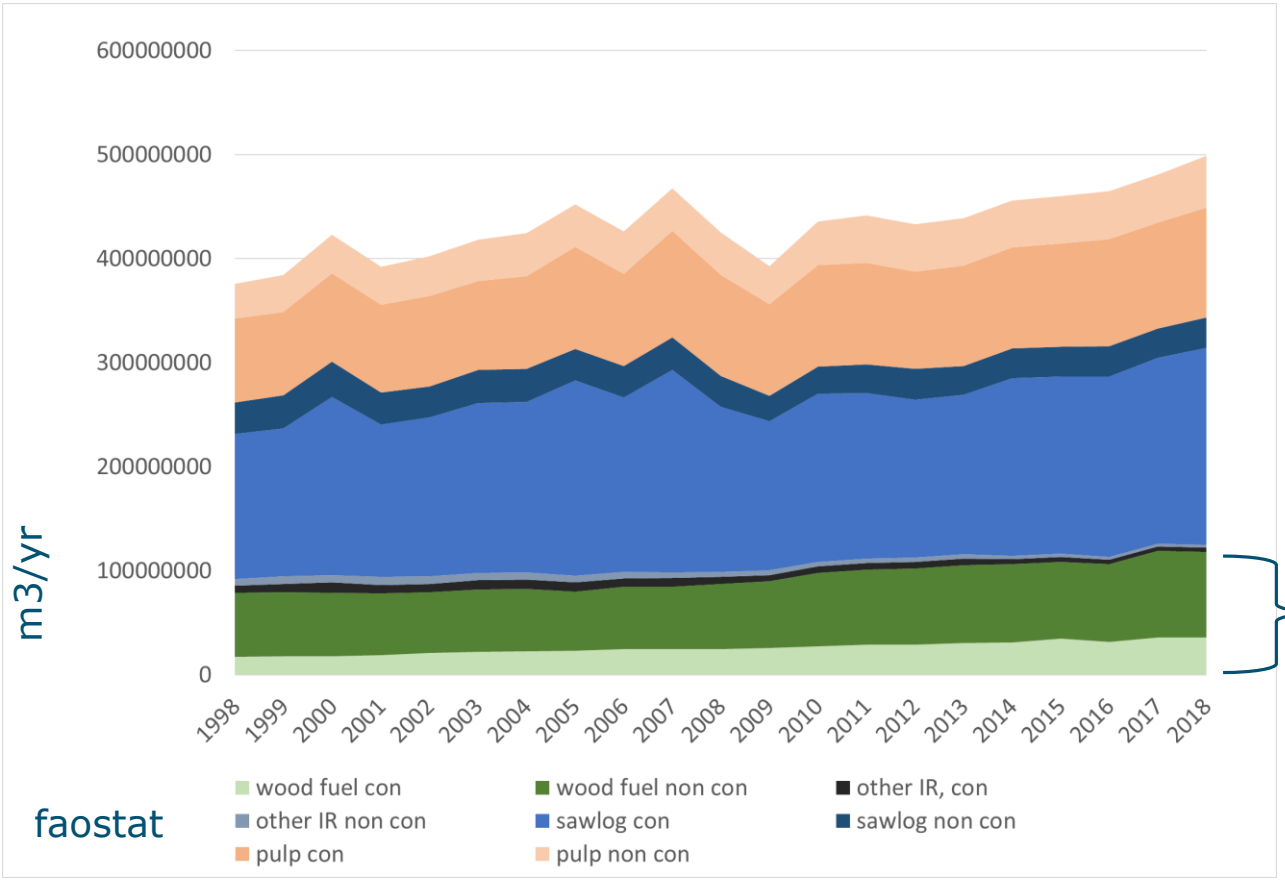
EU forest assortment output



To large extent

Wood fuels

under subsidies a wood market can change rather quickly.
the largest risks (within EU).

Policies favouring some assortments e.g., high paying capacity for wood based biofuels make panel industry suffer

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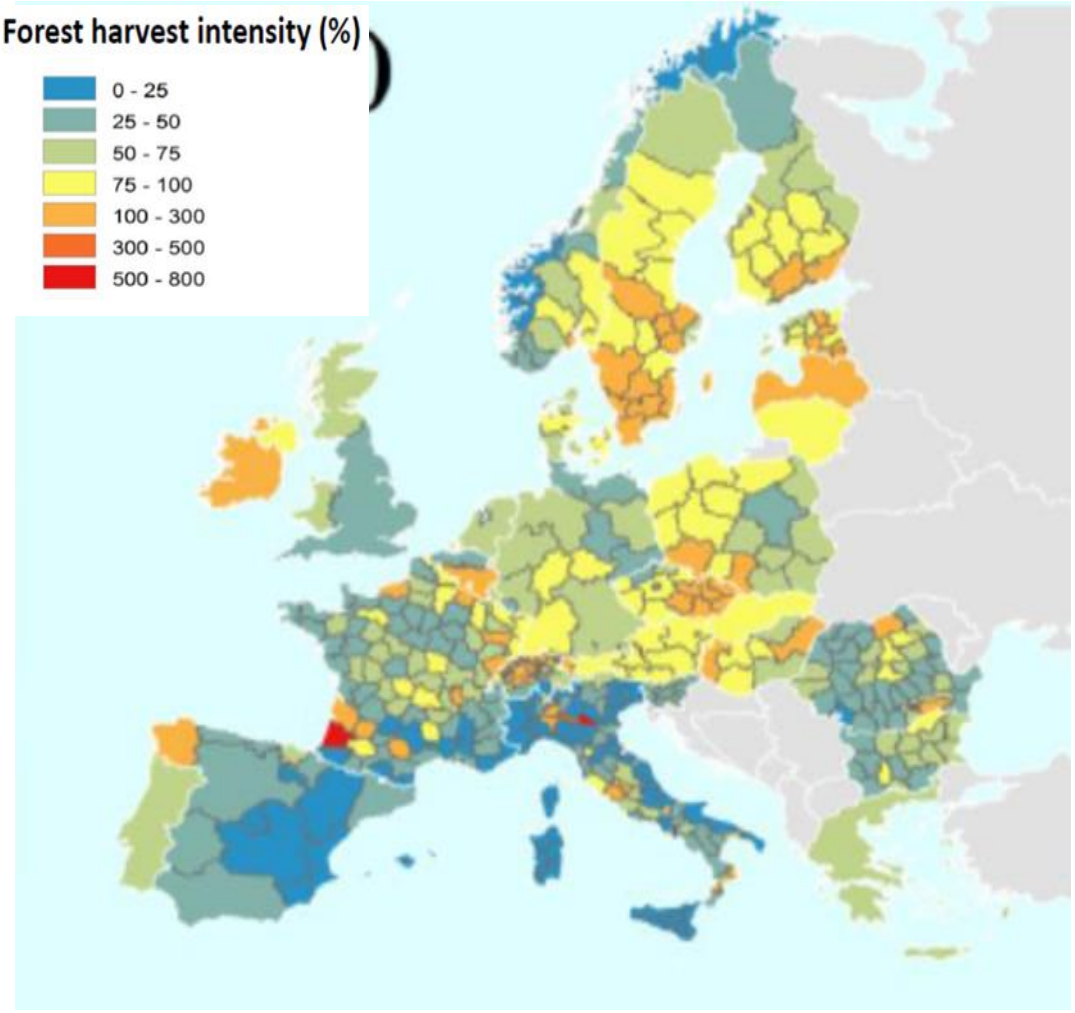
There seems to be sufficient wood,



but mobilising additional wood is difficult:

Harvesting pressure is high locally, and it is difficult to increase harvest in other regions (EFISCEN. Verkerk, Nabuurs, Karjalainen, Schelhaas, Levers)

Verkerk et al. Forest Ecosystems (2019) 6:5
https://doi.org/10.1186/s40663-019-0163-5

Forest Ecosystems

RESEARCH Open Access

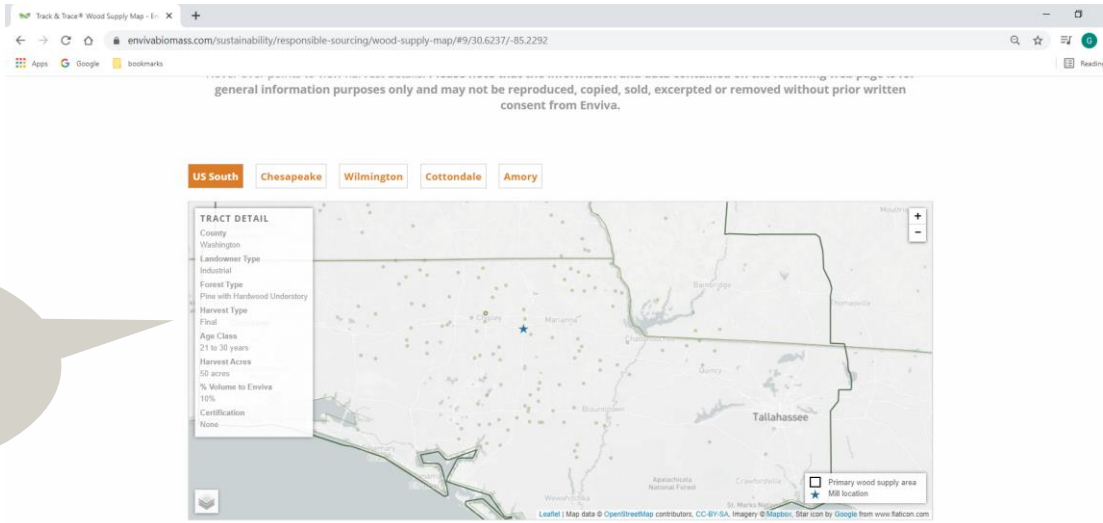
Spatial distribution of the potential forest biomass availability in Europe

Pieter Johannes Verkerk*, Joanne Brighid Fitzgerald, Pawan Datta, Matthias Dees, Geerten Martijn Hengeveld, Marcus Lindner and Sergey Zudin

Assurances

What can be done as workable assurances

- EU REDII criteria (see Giuntoli p.79)
- National forest laws
- MRV: extensive national forest inventories (spending 60M Euro/yr), but very slow and do not say much what is happening locally
- Large extents of EU forest are under FSC or PEFC
- Remote sensing: capabilities increasing fast
- Track & trace ?
    - Too complex?



Enviva track & trace: Each site with harvest details

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But not too tight assurances

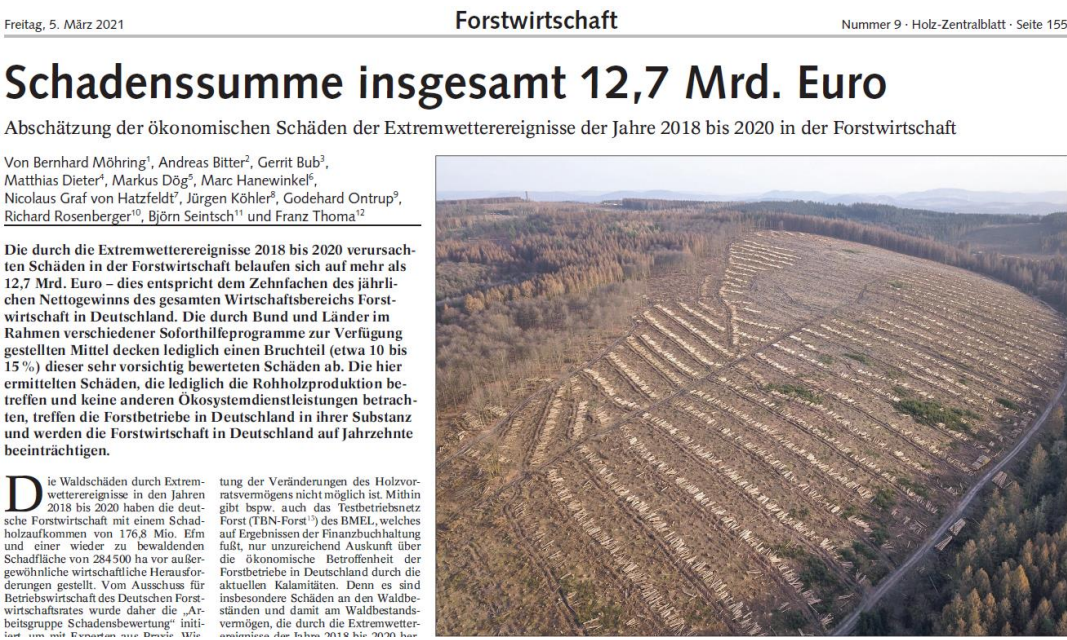
- very strict application of cascading principles can be straightjacket that create opposite problem where bioenergy sector is left with small resource flow

- At same time we face increasing disturbance levels. (see salvage figures in JRC report Fig 6 & 7)

capacity to make

use of wood resources

affected by disturbances.



Freitag, 5. März 2021 Forstwirtschaft Nummer 9 · Holz-Zentralblatt · Seite 155

Schadenssumme insgesamt 12,7 Mrd. Euro

Abschätzung der ökonomischen Schäden der Extremwetterereignisse der Jahre 2018 bis 2020 in der Forstwirtschaft

Von Bernhard Möhring[1], Andreas Bitter[2], Gerrit Bub[3], Matthias Dieter[4], Markus Dög[5], Marc Hanewinkel[6], Nicolaus Graf von Hatzfeldt[7], Jürgen Köhler[8], Godehard Ontrup[9], Richard Rosenberger[10], Björn Seintsch[11] und Franz Thoma[12]

Die durch die Extremwetterereignisse 2018 bis 2020 verursachten Schäden in der Forstwirtschaft belaufen sich auf mehr als 12,7 Mrd. Euro – dies entspricht dem Zehnfachen des jährlichen Nettogewinns des gesamten Wirtschaftsbereichs Forstwirtschaft in Deutschland. Die durch Bund und Länder im Rahmen verschiedener Soforthilfeprogramme zur Verfügung gestellten Mittel decken lediglich einen Bruchteil (etwa 10 bis 15 %) dieser sehr vorsichtig bewerteten Schäden ab. Die hier ermittelten Schäden, die lediglich die Rohholzproduktion betreffen und keine anderen Ökosystemdienstleistungen betrachten, treffen die Forstbetriebe in Deutschland in ihrer Substanz und werden die Forstwirtschaft in Deutschland auf Jahrzehnte beeinträchtigen.

Die Waldschäden durch Extremwetterereignisse in den Jahren 2018 bis 2020 haben die deutsche Forstwirtschaft mit einem Schadholzaufkommen von 176,8 Mio. Efm und einer wieder zu bewaldenden Schadfläche von 284500 ha vor außergewöhnliche wirtschaftliche Herausforderungen gestellt. Vom Ausschuss für Betriebswirtschaft des Deutschen Forstwirtschaftsrates wurde daher die „Arbeitsgruppe Schadensbewertung“ initiiert, um mit Expertern aus Praxis, Wis-

tung der Veränderungen des Holzvorratsvermögens nicht möglich ist. Mithin gibt bspw. auch das Testbetriebsnetz Forst (TBN-Forst [13]) des BMEL, welches auf Ergebnissen der Finanzbuchhaltung fußt, nur unzureichend Auskunft über die ökonomische Betroffenheit der Forstbetriebe in Deutschland durch die aktuellen Kalamitäten. Denn es sind insbesondere Schäden an den Waldbeständen und damit am Waldbestandsvermögen, die durch die Extremwetter-

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LULUCF regulation also helps to assure sustainability

Without debits it is possible to increase harvest. EFISCEN runs for Forest Reference Levels

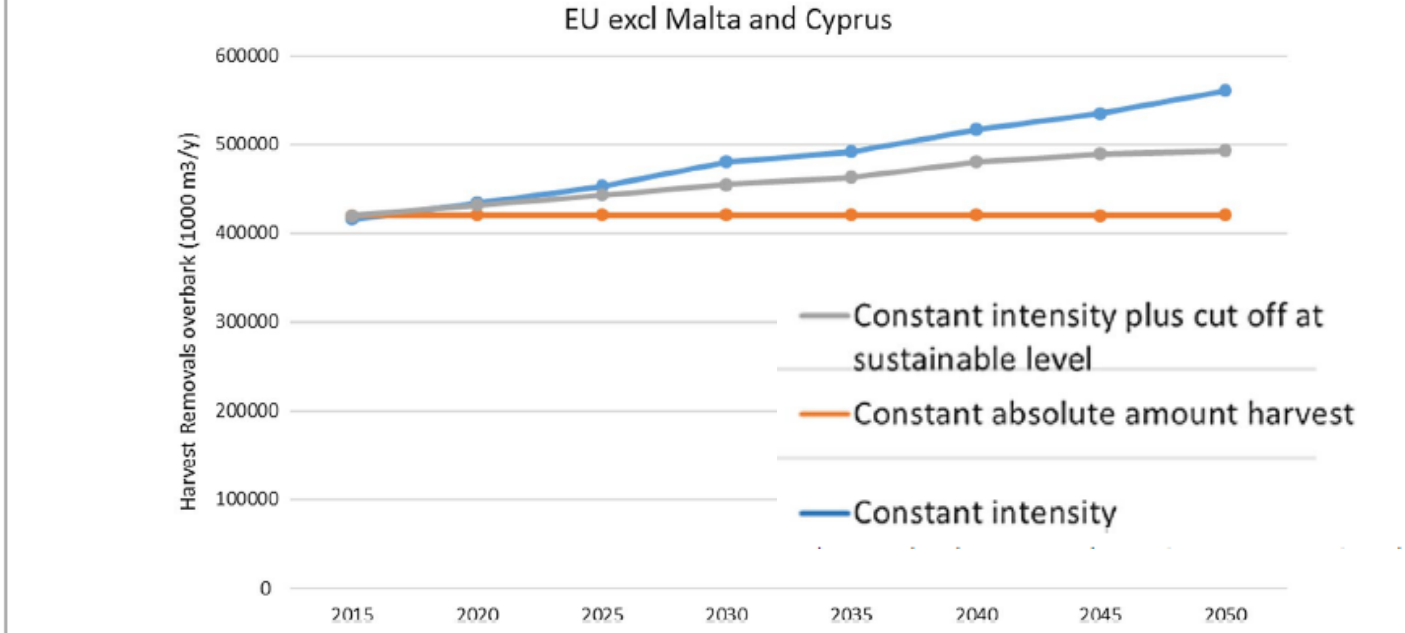

Fig. 3 Development of potential annual harvest (removals overbark) until 2050 under the forest reference level without creating debits for all EU countries (excluding Malta and Cyprus) under the three scen of interpretations of the LULUCF regulation text

Nabuurs *et al. Carbon Balance Manage (2018) 13:18*
https://doi.org/10.1186/s13021-018-0107-3

Carbon Balance and Management

RESEARCH Open Access

Understanding the implications of the EU-LULUCF regulation for the wood supply from EU forests to the EU

Gert-Jan Nabuurs[1,2*], Eric J. M. M. Arets[1] and Mart-Jan Schelhaas[1]

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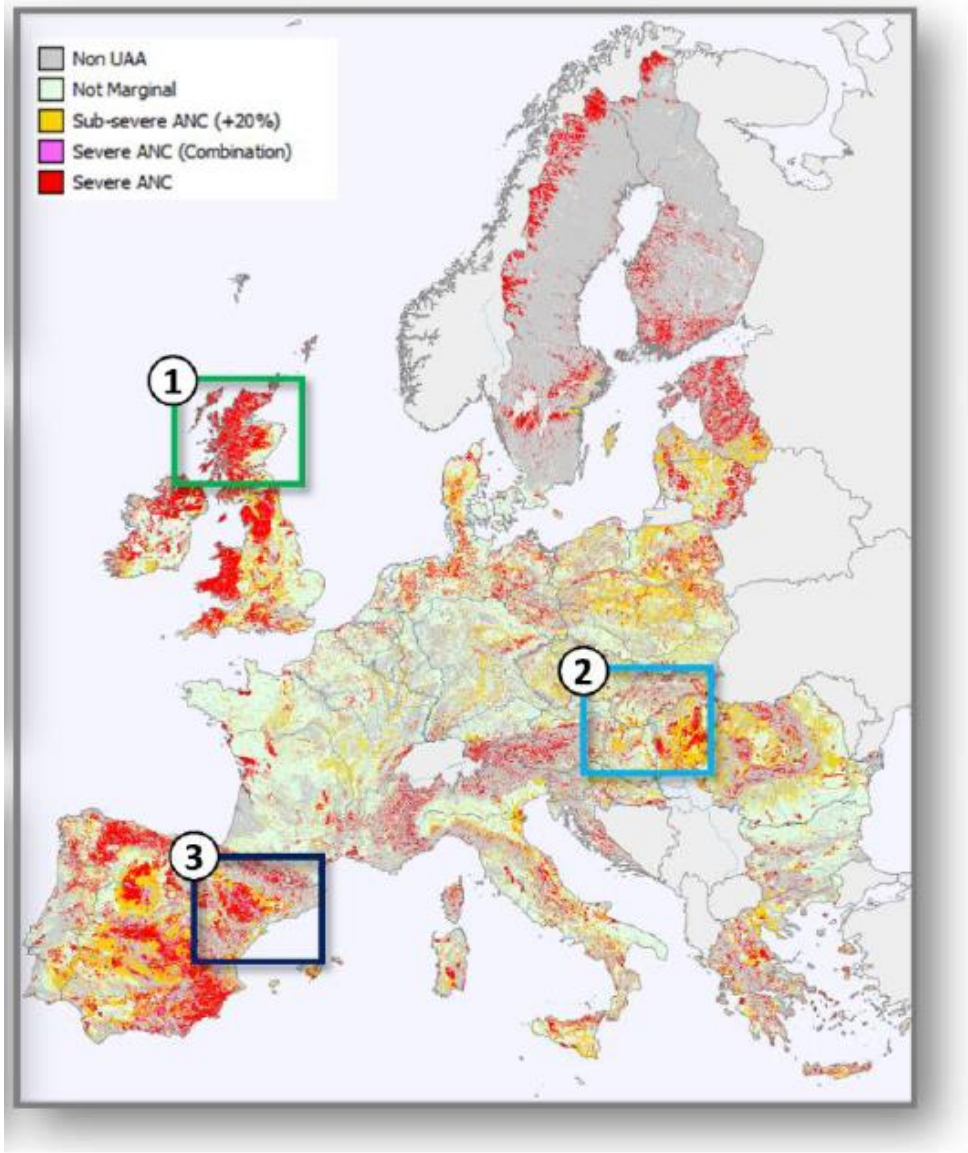
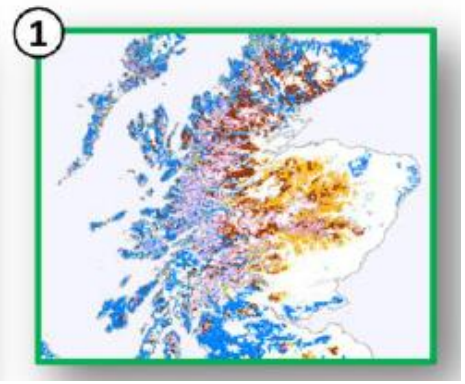
Thus for longer term, we need a more holistic view

Areas of natural constraints (marginal lands) (Elbersen et al)





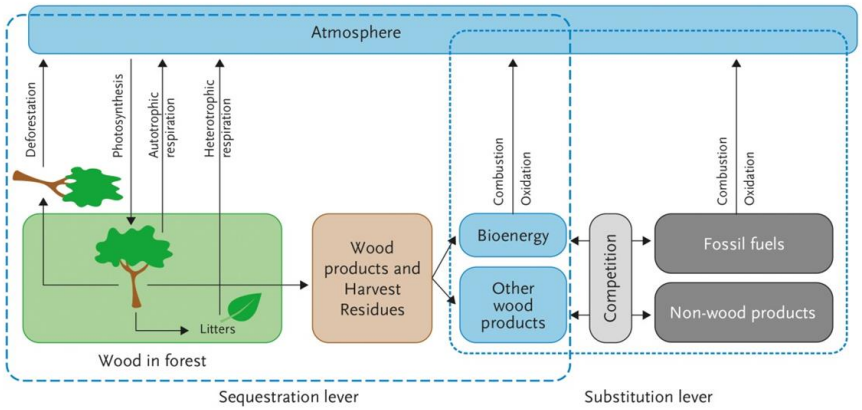
Some 60 Mha, marginal lands, with focus on agricultural mask

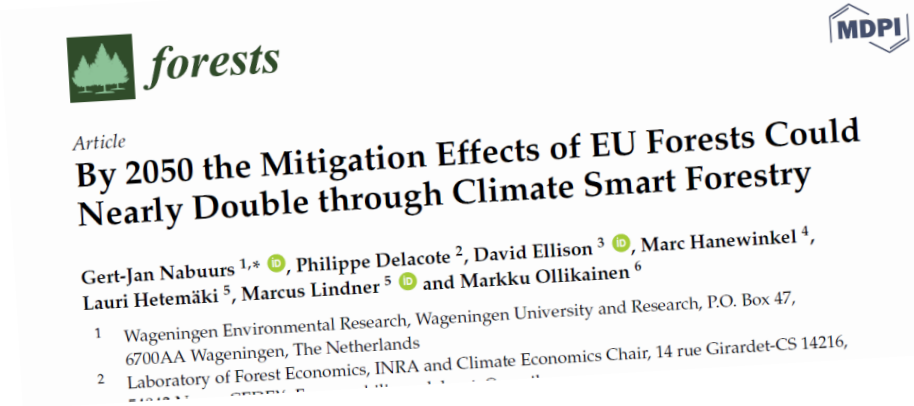
Some of it may be available without even when taking out of the mask the biodiverse grasslands & heathlands

Climate mitigation: - can climate smart forestry help?

European forests currently mitigate 11-13% of total European emissions

Through a set of measures this can almost be doubled. Locally specific: from strict reserves to plantations. Mitigate, adapt and keep producing





forests

MDPI

Article

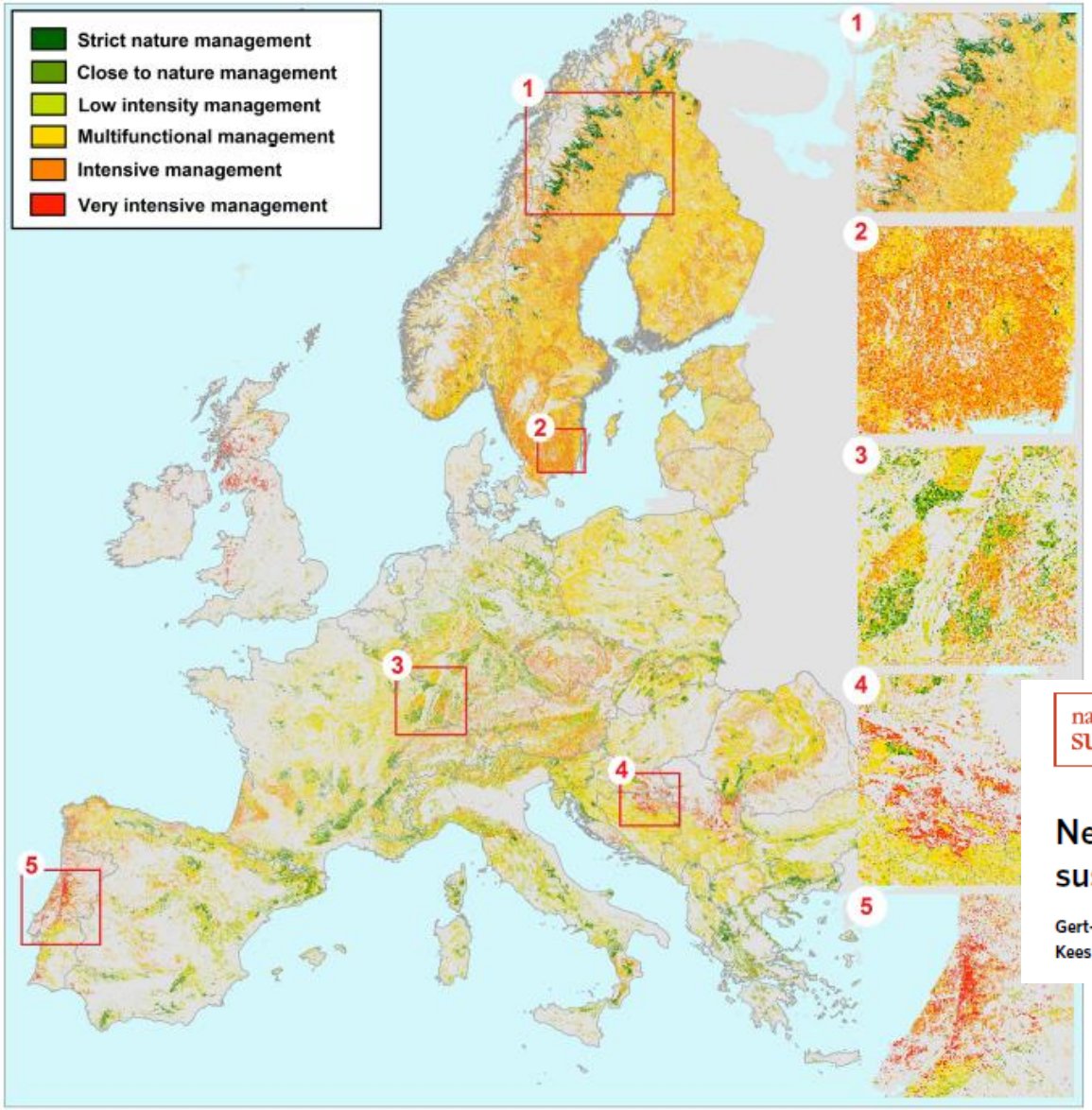
By 2050 the Mitigation Effects of EU Forests Could Nearly Double through Climate Smart Forestry

Gert-Jan Nabuurs [1,*], Philippe Delacote [2], David Ellison [3], Marc Hanewinkel [4], Lauri Hetemäki [5], Marcus Lindner [5] and Markku Ollikainen [6]

1 Wageningen Environmental Research, Wageningen University and Research, P.O. Box 47, 6700AA Wageningen, The Netherlands

2 Laboratory of Forest Economics, INRA and Climate Economics Chair, 14 rue Girardet-CS 14216,

Maybe we need more vision where we do what within EU forests



Forests are not a sole sovereign issue anymore for MS.

nature sustainability
BRIEF COMMUNICATION
https://doi.org/10.1038/s41893-019-0374-3

Next-generation information to support a sustainable course for European forests

Gert-Jan Nabuurs[1,2*], Peter Verweij[1], Michiel Van Eupen[1], Marta Pérez-Soba[3], Helga Pülzl[4,5] and Kees Hendriks[1]

Concluding

- Giuntoli report is pretty well balanced. Possibly overemphasises the high risk options that are not very realistic for EU
- I see more direct risks of woody biomass for bioenergy in (local) overharvesting, and fast shifts in wood market
- A wide set of assurances are available and all together seem pretty solid. but we have to realise that when money can be earned, cowboys will stand up.
- It is not only about the harvesting part of the chain: investments will be needed in a variety of forest measures along the whole chain. (adaptation, mitigation, maintain productivity ~CSF)

Thank you !