# An indutsry perspective on wise use of peatlands and peat

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1913

we make it grow

# Agenda

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# 01

# Why it is as it is

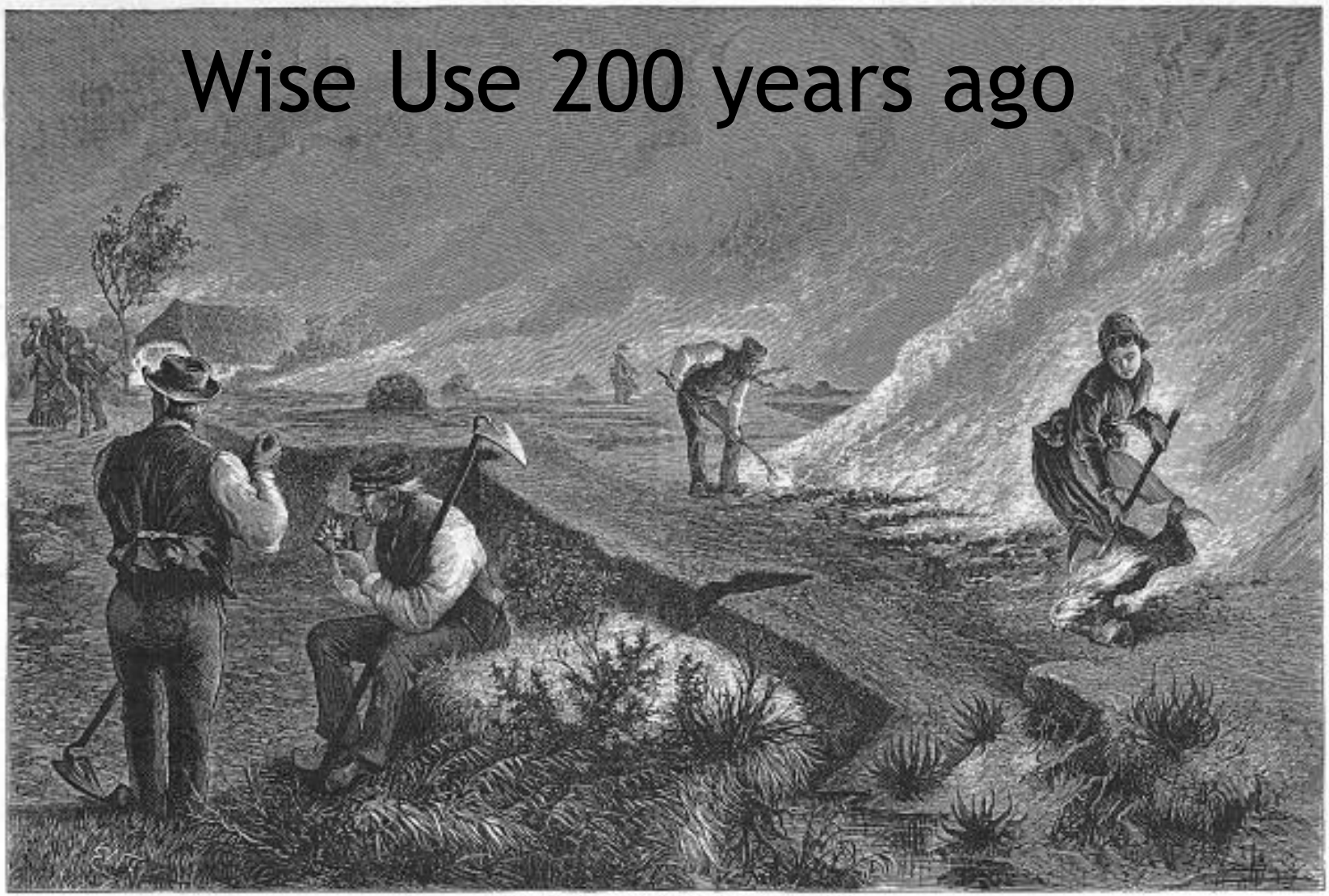
# Wise use centuries ago

## An example: Germany

Development of mires began centuries ago and was **politically enforced** until 1981. Most peatlands were drained by then (Marshall Plan, Emsland Plan).

The objective was peatland usage for agriculture and settlements. Mires were wastelands.

# Wise Use 200 years ago



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Georg Klasmann in 1953 received the German Medal of Honor (Bundesverdienstkreuz) for efficient peatland drainage and development

# 02

# The peat and growing media industry

# Definitions

**Growing media (GM):**

*Material other than soil in situ, in which plants are grown.*

**Growing media constituents (GMC):**

*Materials which are suitable as volume-building ingredients of growing media.*

# Our Customers

we make it grow

Vegetables & Fruits

Floriculture

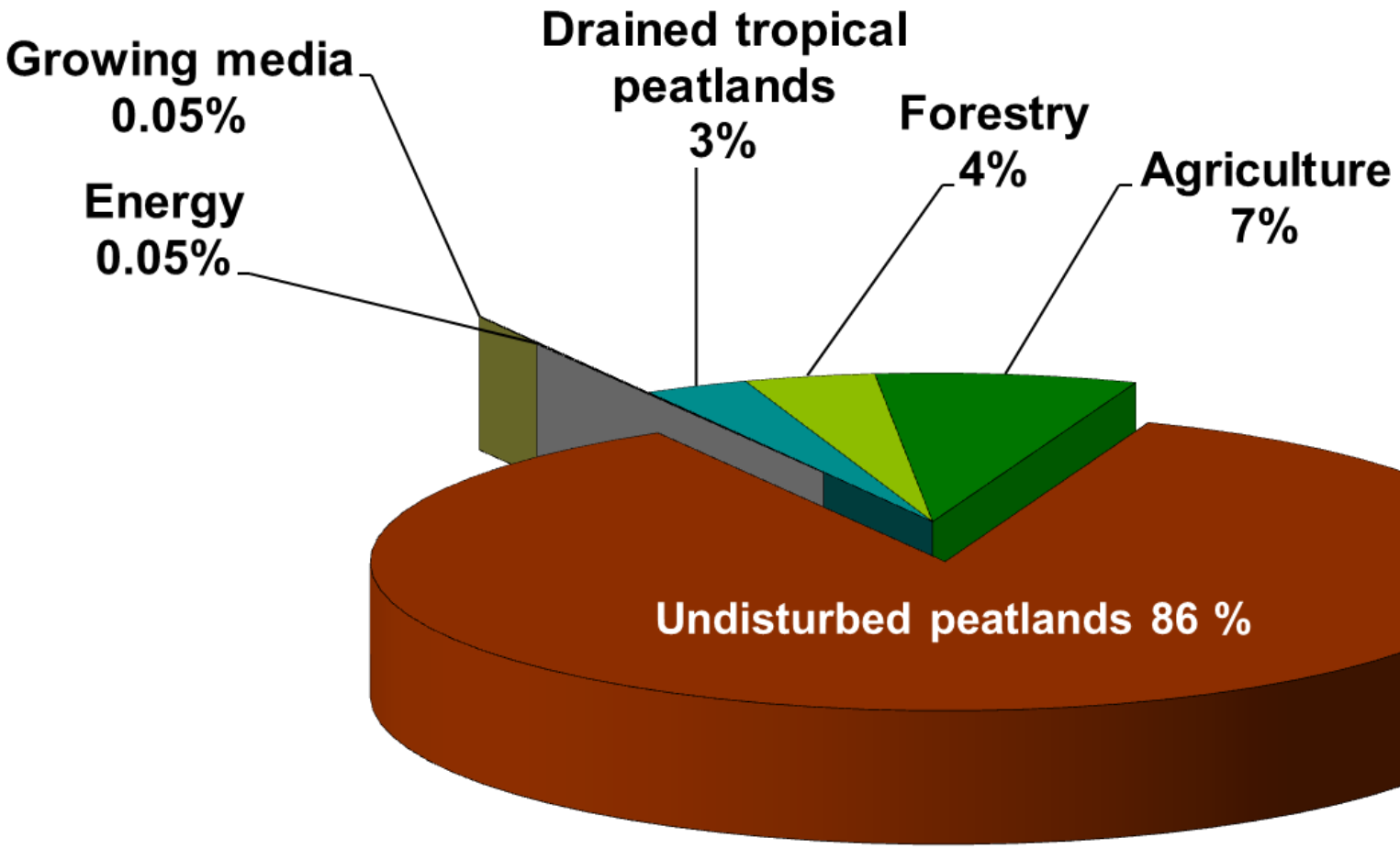
Trees and shrubs

Landscaping

**90 %** of our GM are applied in professional horticulture

**40 %** are used for growing vegetables and fruits

# Uses of peatlands in the world




Strack/IPS (2008/2010)

# Growing media constituents

## Organic

- Peat
- Coconut coir
- Wood fibers
- Green compost
- Bark
- Rice hulls
- *Sphagnum*

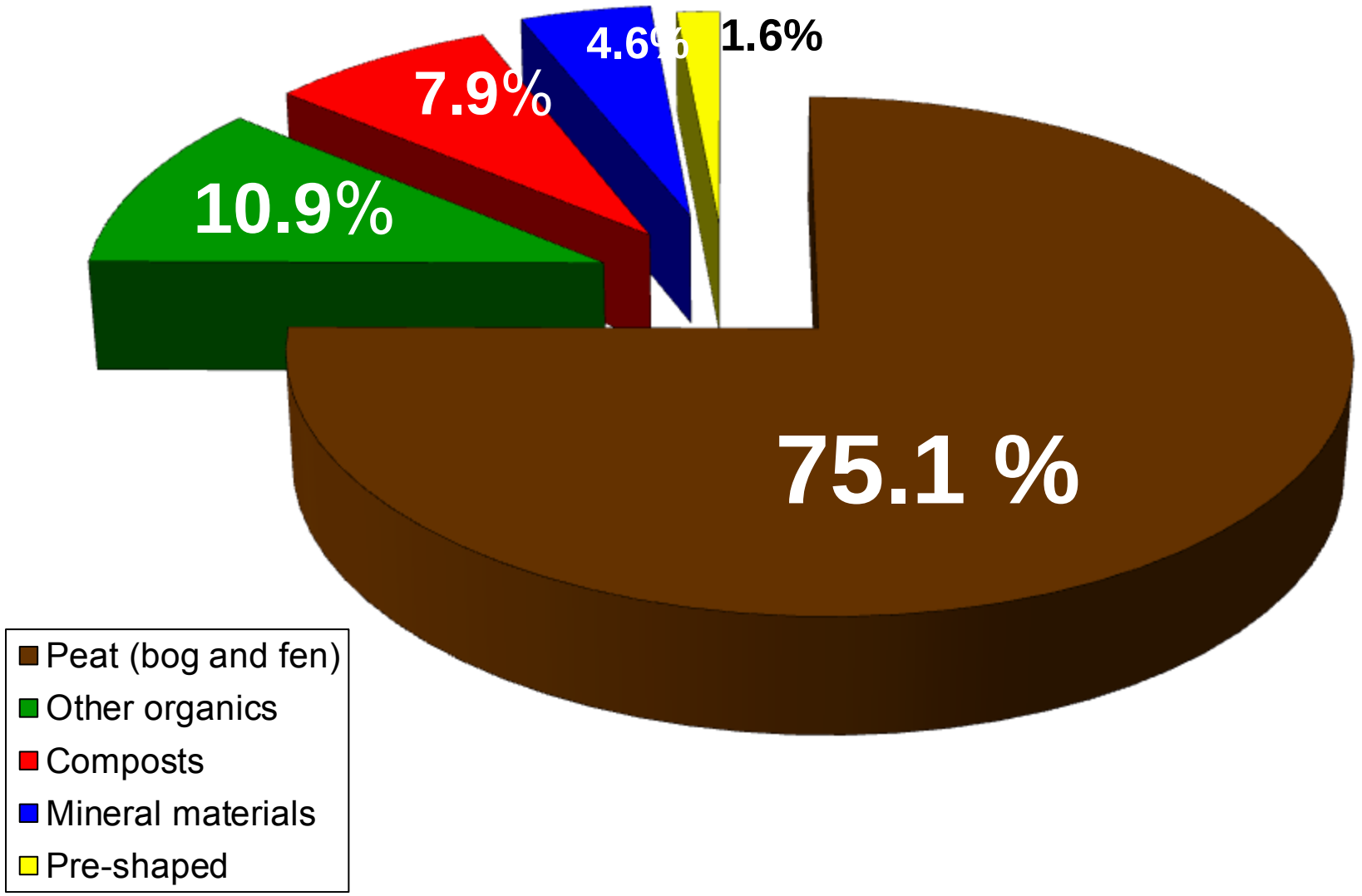
## Inorganic

- Perlite
- Expanded clay
- Pumice
- Vermiculite
- Sand

## Others

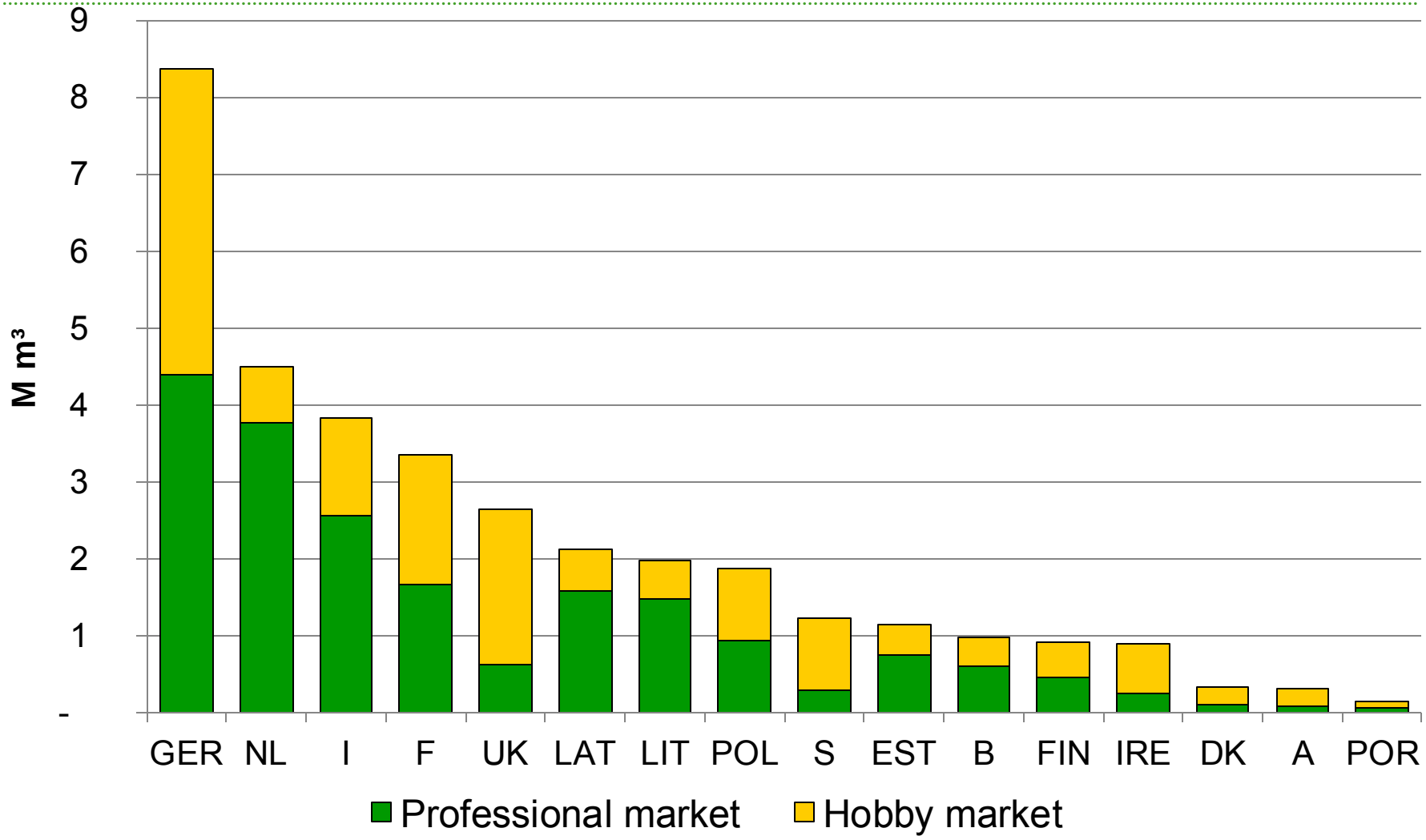
- Spent GM
- Peanut shells
- Brewery residues
- Cork
- Cocoa shells
- Biochars
- Digestate compost

# GMC used in EU 16 in 2013 (Total = 34.6 M m³)

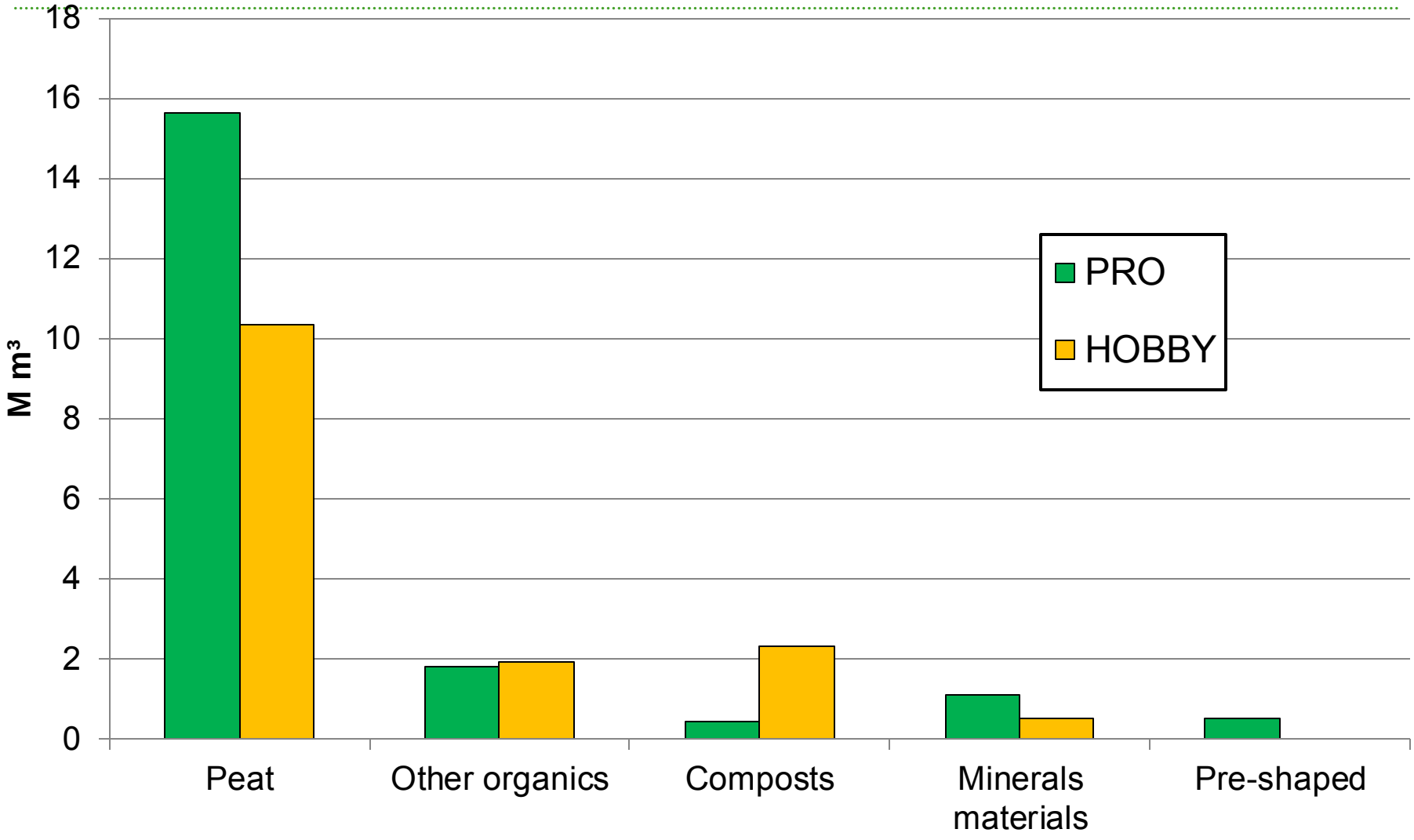


# Wise use of peat in horticulture

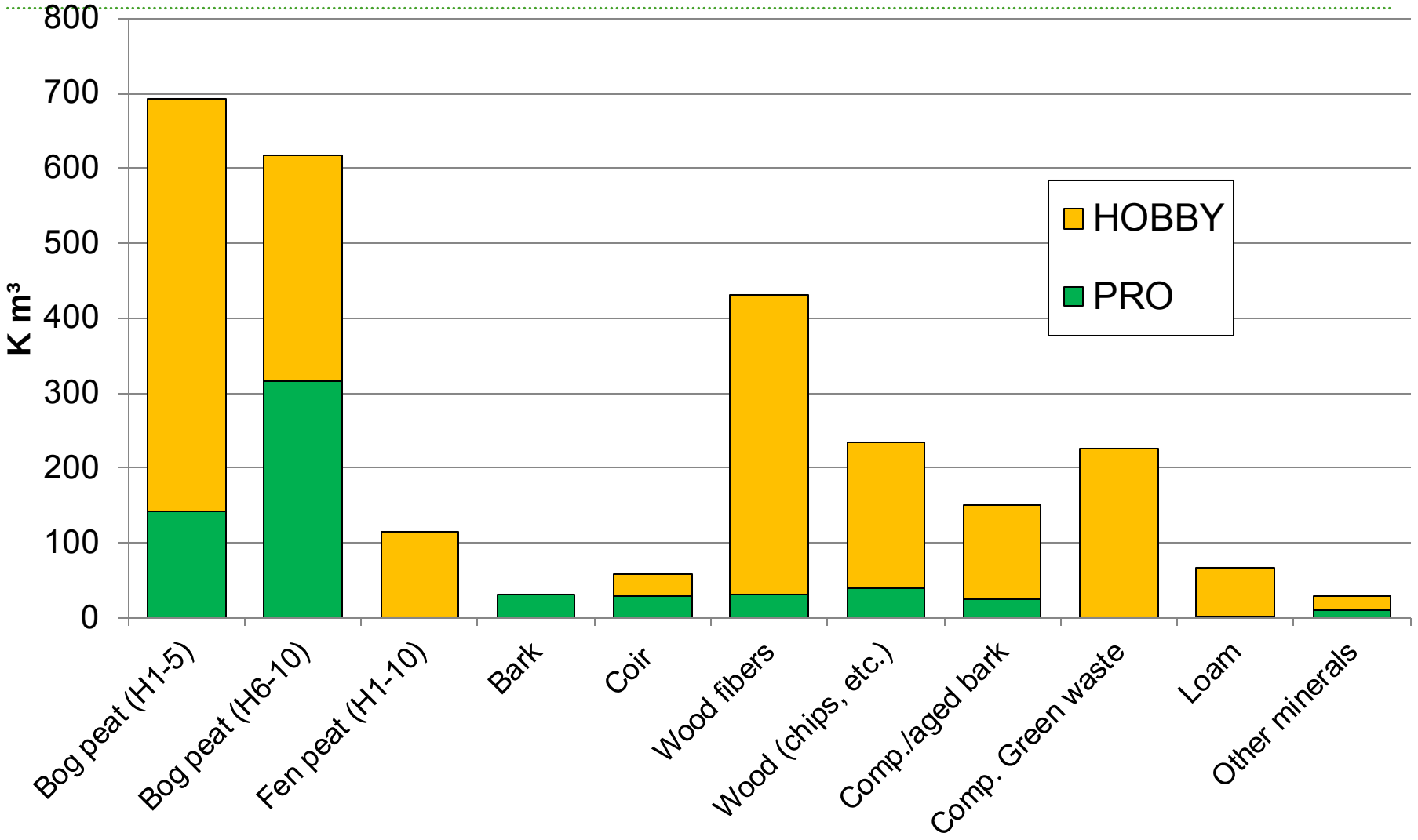
# GMC used in EU 16 in 2013 (Total = 34.6 M m³)



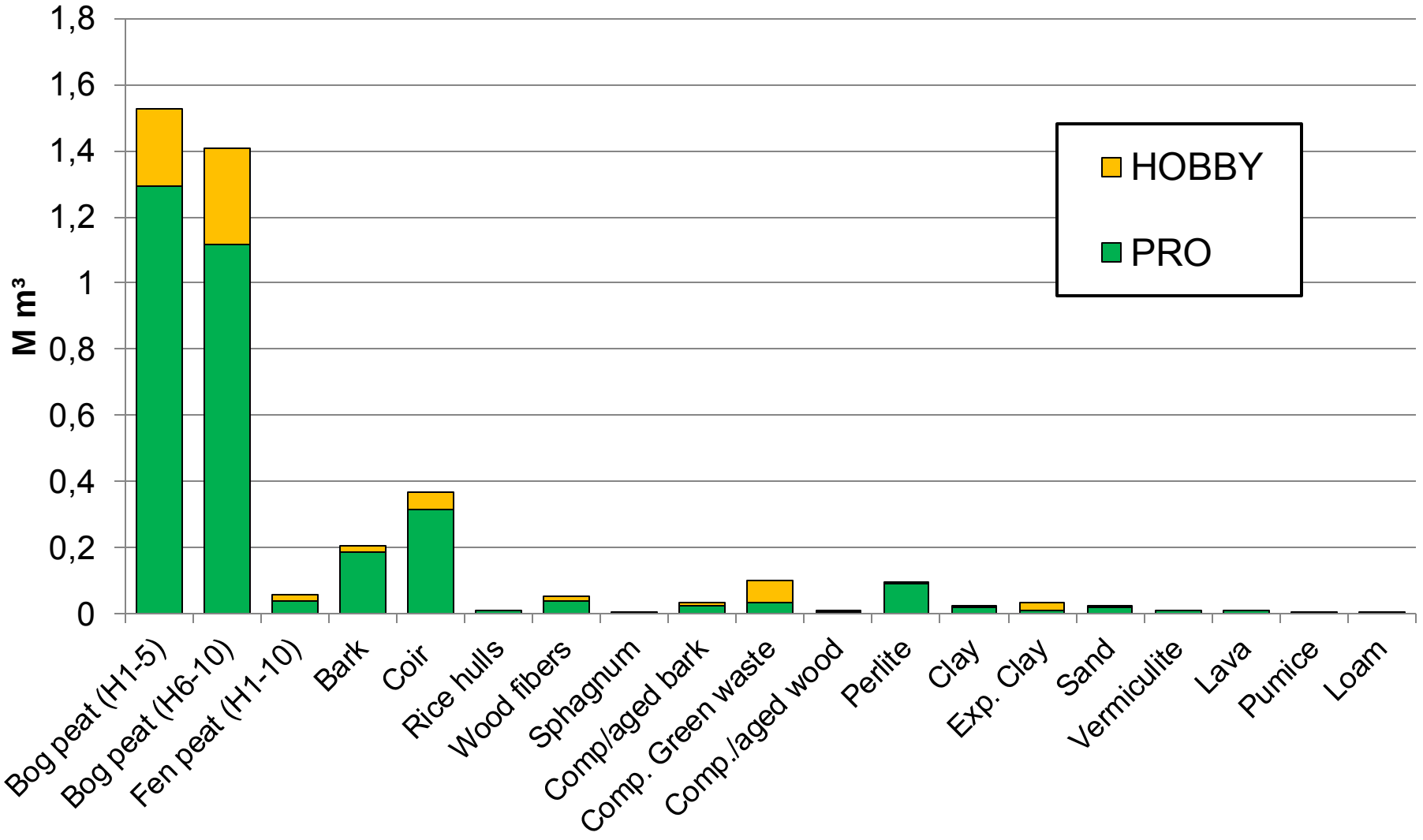
# GMC types used in EU 16 in 2013 (Total = 34.6 M m³)



# GMC used in UK in 2013 (Total = 2.65 M m³)



# GMC used in NL in 2013 (Total = 4 M m³ w.-o. pre-shaped)



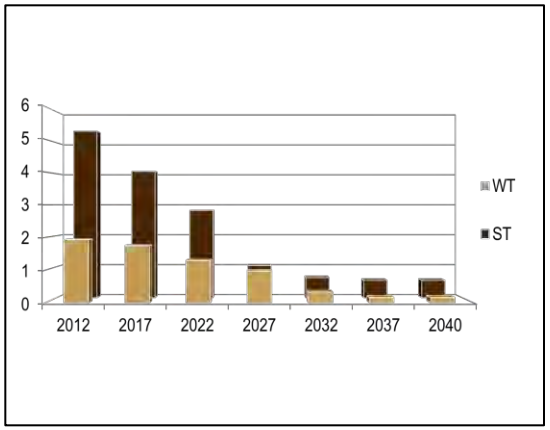
# 03

# Why *Sphagnum* Farming ?

# Living *Sphagnum* moss

# Dried *SPHAGNUM* MOSS (< 10 mm) as a GMC

# Why *Sphagnum* Farming? (1/2)




## Peat availability

Decrease of peat reserves in Germany


## GHG, eNGOs, Politics

Peat extraction hampered via policies

## Other constituents

Search for materials without comprimising product quality

# Why *Sphagnum* Farming? (2/2)

## After-use

Is SF on (strongly decomposed) peat feasible after peat extraction?

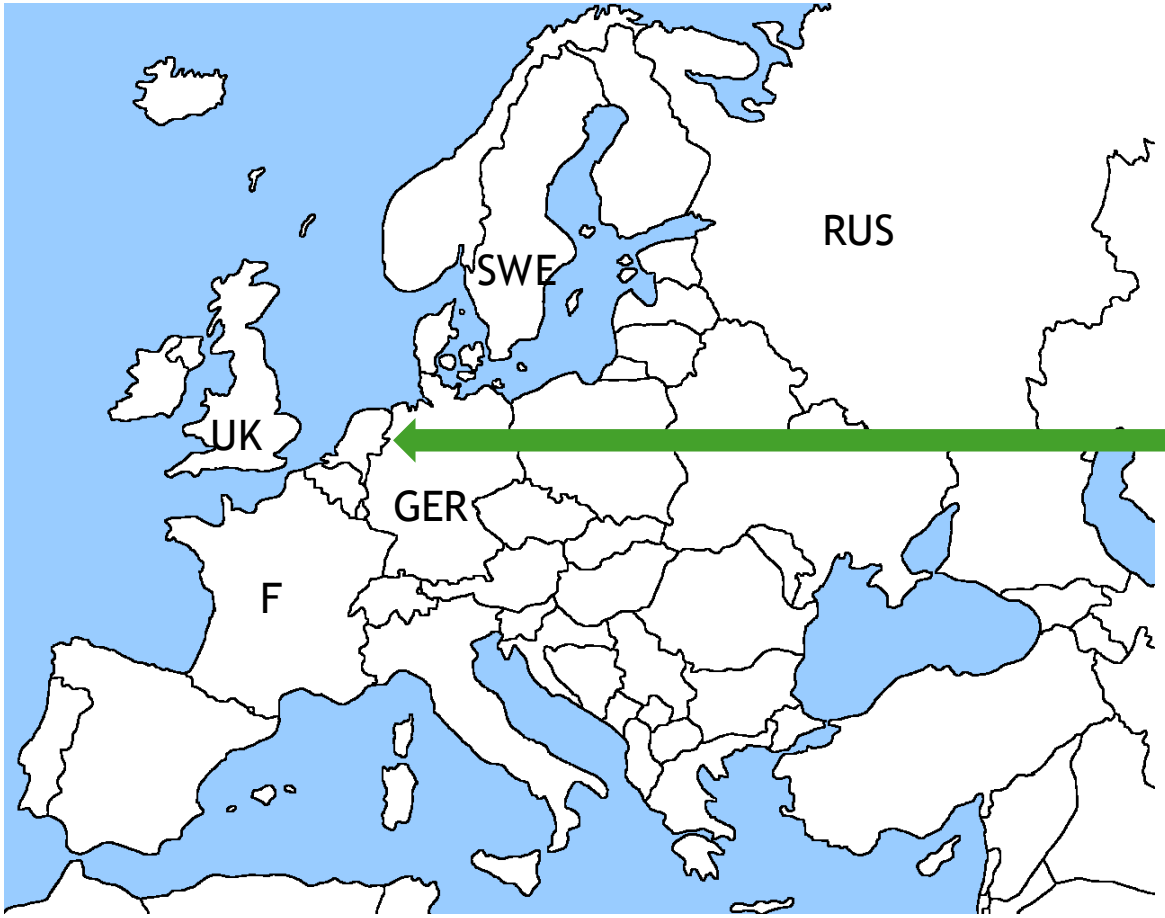
## Biodiversity

Possibility to turn degraded peat-land into viable peatland to reduce GHG-emissions

## Funding

Gov. of Lower Saxony supports research for peat alternatives

# Project location




In the Federal State of Lower Saxony, Germany

Partners

Title

„Extensive cultivation of peat moss in Lower Saxony as a land use subsequent to black peat extraction and its potential…

…for the sustainable production of a growing media constituent“

…for climate change mitigation and biodiversity“

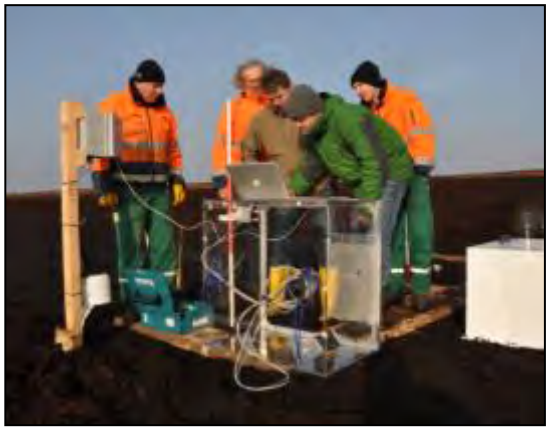
# Our project in short

- First large-scale (10 ha) SF trial on strongly decomposed raised bog peat
- Costs (2015 to 2018): > 1.37 M €
- € 620 K – Min. of Food, Agriculture and Consumer Protection
  € 350 K - German Fed. Env. Foundation
  € 400 K - Klasmann-Deilmann
- 5 ha *Sphagnum* Bank and
  5 ha production site
- Testing of diff. irrigation and drainage systems, coverages and *Sphagnum* species

# Main 3 project questions

**Klasmann-Deilmann**

Is peat replacement with cultivated peat moss profitable ?



**Thünen Institute**

Are GHG emissions on SF sites lower than on peatlands used in other ways?

**Leibniz U Hannover**

Can SF create habitats for endangered species?

# Project implementation (major steps)

***Sphagnum* donor site**

**Harvesting donor peat moss**

**Distributing peat moss**

**Fleece coverage**

**Straw vs. Fleece coverage**

**Peat moss growth July 2016**

## Opportunities

- Provide a suitable GMC
- Deliver a long-term perspective for the GM industry
- Safeguard jobs in economically weaker regions
- Optimize the colonization of former peat extraction sites with *Sphagnum*
- Enhance the ecological value of peatlands currently used for agriculture
- Mitigate GHG emissions

## Challenges

- Shortage of realistic SF sites
- Shortage of donar peat moss sites for inoculation
- Hydro management is critical
- Productivity, fuctionality and selection of *Sphagnum* species
- Weeds and weed seeds
- Sphagnicolous fungi (*Sphagnurus paluster*) and other fungi
- Future competition with other GMC
- Profitability

# 04

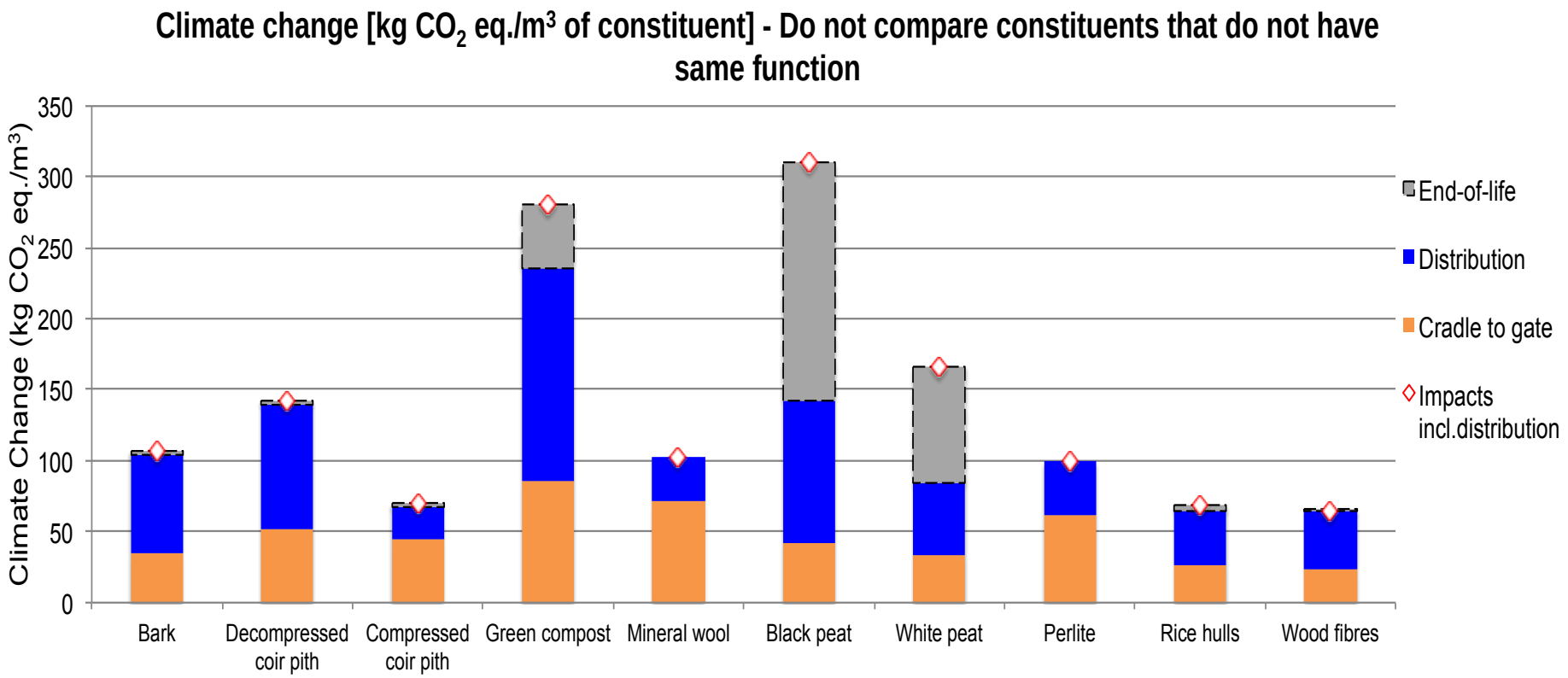
# Footprints and holistic views

# Stakeholders and politics must have a common basis for Sustainable Development and Decision Making

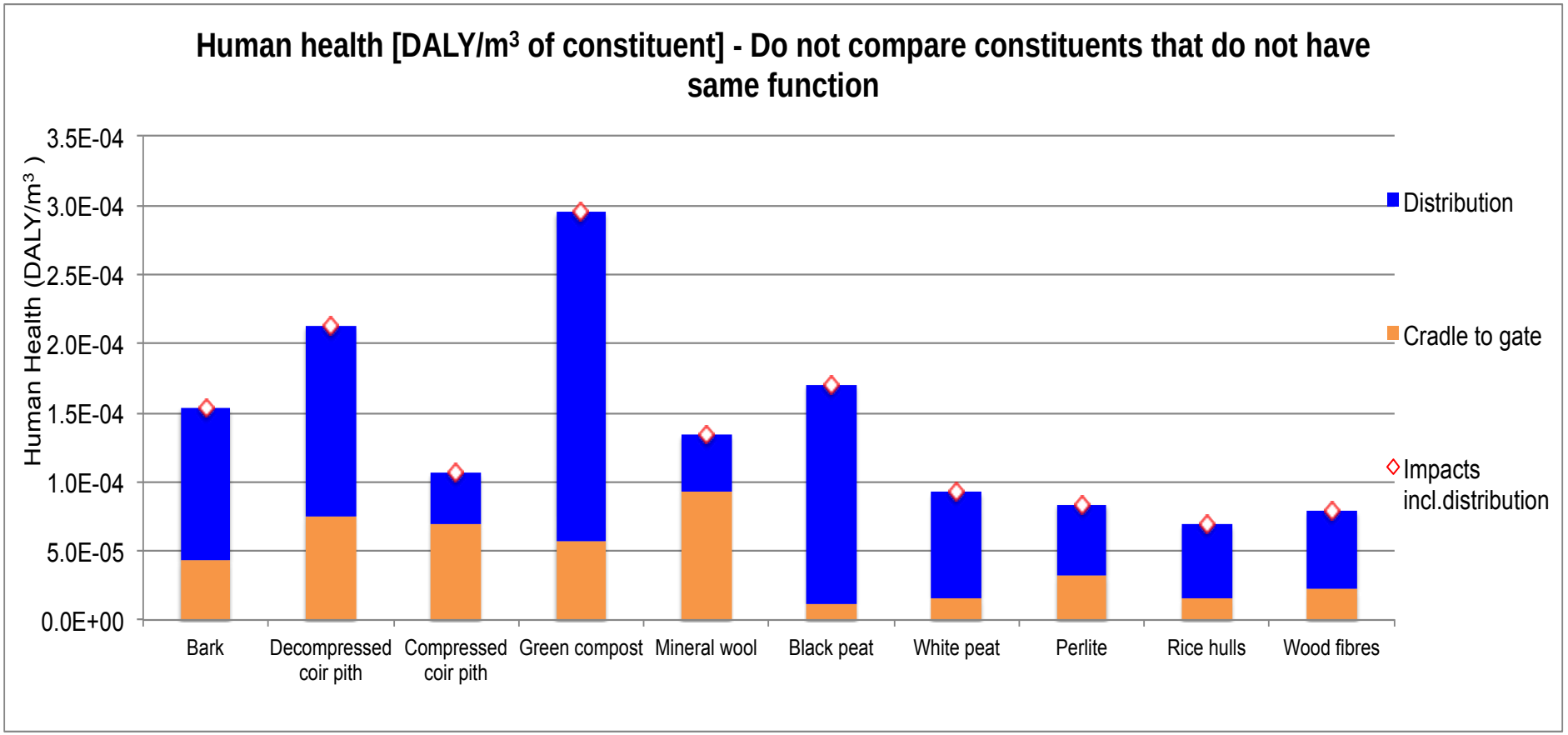
*“Protection of the environment is only feasible if politics consider economic and social aspects at the same time. If any pillar is weak then the whole system of Sustainable Development is not sustainable”.*

(UN Conference on Environment and Development in Rio in 1992)

# Climate Change impact of some GM constituents



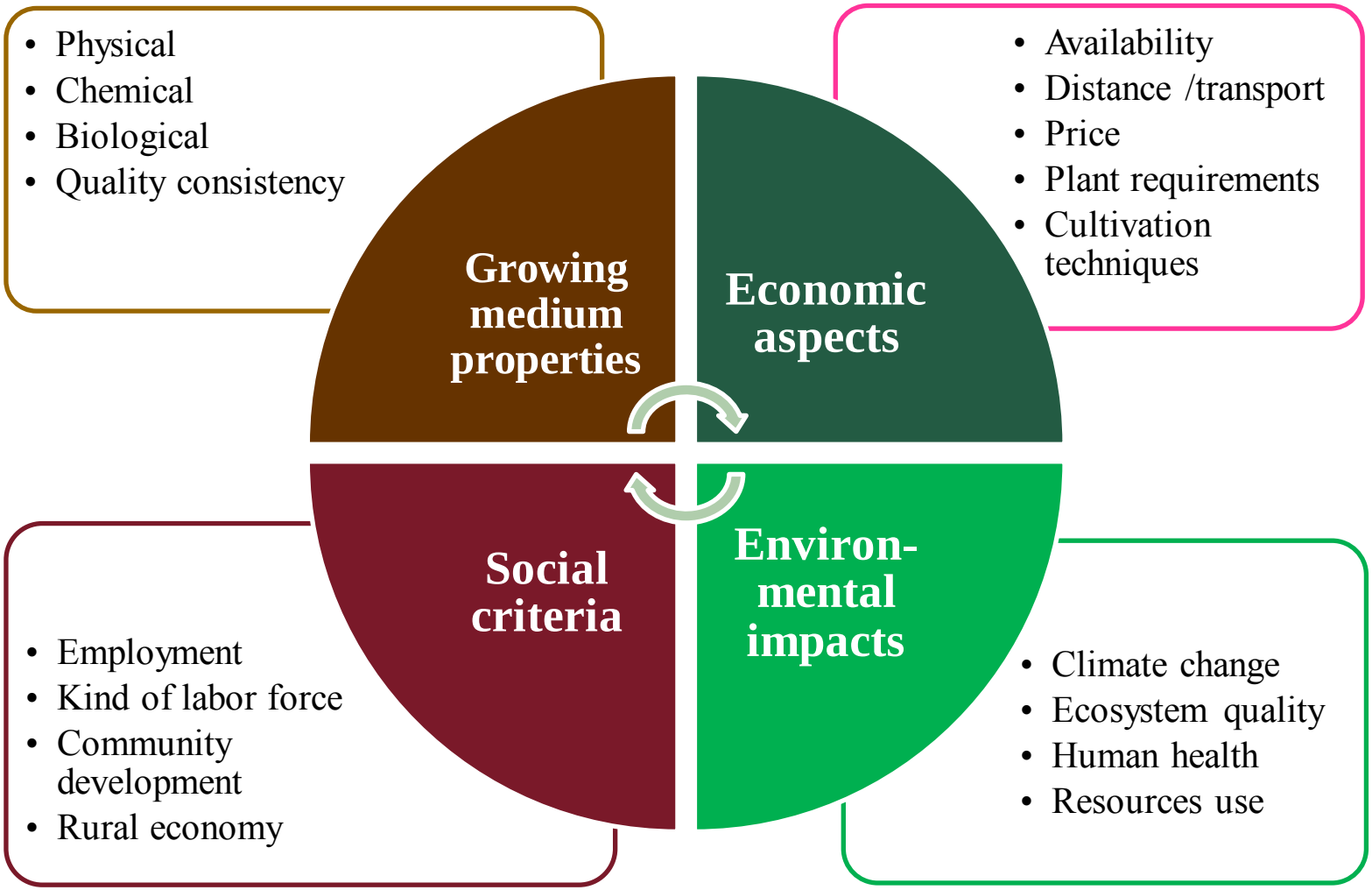
# Impact of some GM constituents on Human Health



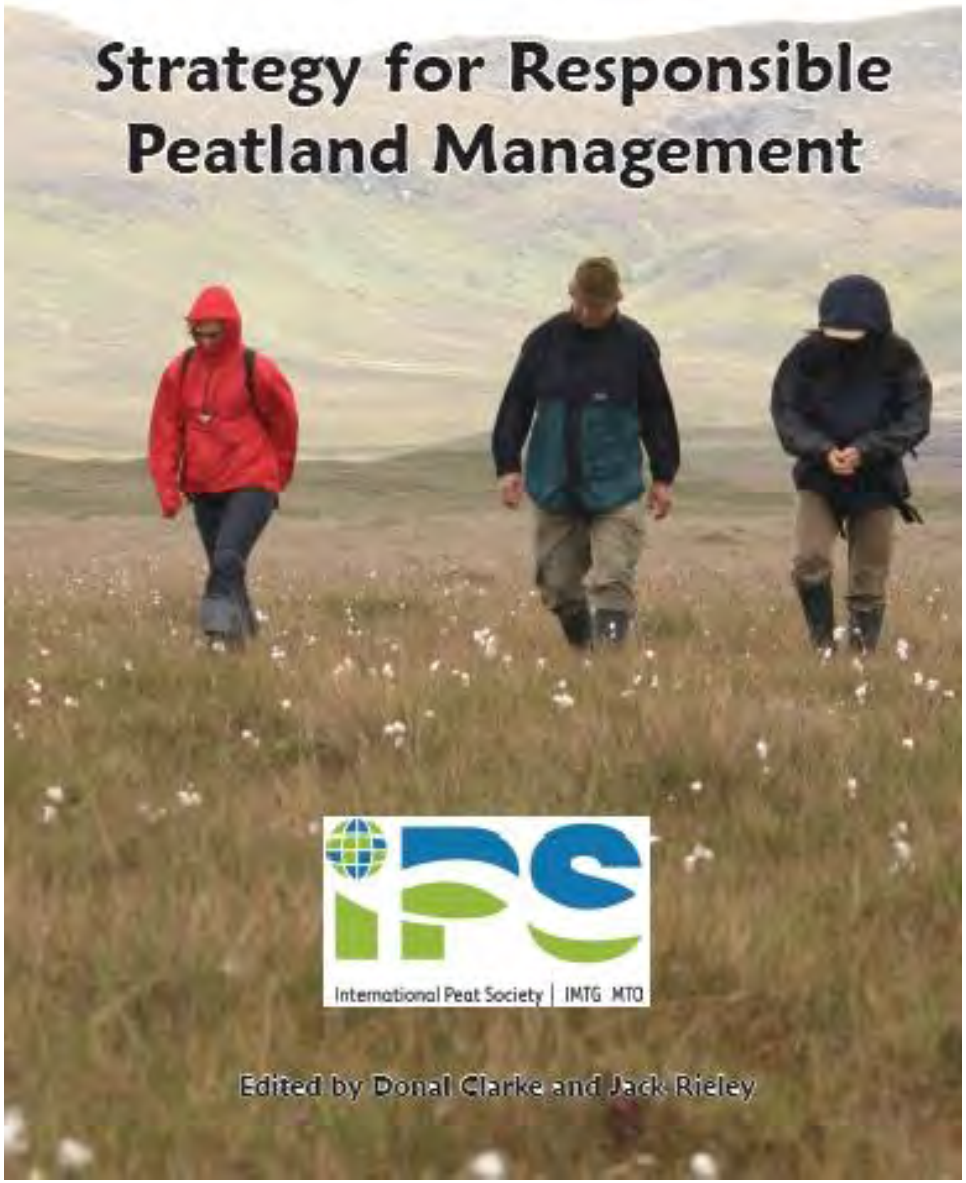
# Consider that …….

….**all** growing media and growing media constituents have an environmental impact !

# The holistic view on all growing media constituents




Schmilewski 2013




responsibly produced peat

A Dutch governmental initiative to secure the supply of responsibly produced peat for horticulture which is based on the SRPM.

RPP is gaining importance among stakeholders in Europe.

responsibly produced peat

will be classified, depending on percentages of the area that correspond to different classes. ¶

| | | yes | no | indicators |
|---|---|---|---|---|
| Class 1 | natural situation | X | | Bog ecosystem functions intact |
| RPP not available | | X | | Acrotelm intact |
| | | X | | Hydrology intact (no artificial drainage) |
| | | X | | Vegetation intact |
| | | - | | Regeneration possible |
| | | X | | Important for special species |
| Class 2 | limited degradation | mostly | | Bog ecosystem functions intact |
| Generally not open to RPP cert. see Box 3.2 | | mostly | | Acrotelm intact |
| | | mostly | | Hydrology intact (no artificial drainage) |
| | | mostly | | Vegetation intact |
| | | X | | Regeneration possible |
| | | X | (X) | Important for special species (s. box 3.2) |
| Class 3 | strong degraded, partially under agricultural use° | | some | Bog ecosystem functions intact |
| RPP optional see Box 3.3 | | | some | Acrotelm intact |
| | | | some | Hydrology intact (no artificial drainage) |
| | | | some | Vegetation intact |
| | | | X* | Regeneration possible |
| | | (X) | X | Important for special species (s. box 3.3) |
| Class 4 RPP recommended | fully under agricultural use or very strong degraded | | hardly | Bog ecosystem functions intact |
| | | | hardly | Acrotelm intact |
| | | | X | Hydrology intact (no artificial drainage) |
| | | | X | Vegetation intact |
| | | | X | Regeneration possible |
| | | | X | Important for special species |

¶

*in the very long term only¶

# 05

# Conclusions

- Industry would be happy to have ‚the' alternative
- A number of materials other than peat are bing used, but peat will remain the main constituent
- *Sphagnum* can be used but will remain a niche product and will have to compete with other materials
- Policy support is needed to promote SF
- Policy support and funding are needed to promote the recycling of organic materials (municiple green waste, residual wood from state forests) / EU Circular Economy Package
- Alternative after-uses after extraction needed (paludiculture); a governmental concept is needed to obtain needed areas

# Thank you for your attention!


*we make it grow*

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