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LUO VIHREÄMPÄÄ MAAILMAA

SPHAGNUM MOSS, THE FORGOTTEN NEW GROWING MEDIA

Teppo Rantanen Biolan Group 11.10.2018

BIOLAN GROUP by business areas 1.11.2017

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SPHAGNUM MOSS ACTIVITY

ECOMOSS OY, PART OF BIOLAN GROUP

- Company has been established 2013
- EcoMoss Oy has been since April 2016 part of Biolan Group.
- Preliminary production of sphagnum moss started in autumn 2015
- Production enlargement since summer 2016
- Produceses and supplies Sphagnum moss for growing media purposes

BASICS ABOUT SPHAGNUM MOSS

SPHAGNUM MOSSES

- Mostly in mires and wetlands growing species of mosses
- Globally appr. 380 species, in Finland appr. 40 species
- Most important group of species as source / origin of peat moss
- Very high water holding capacity, even 16-26 times of own weight
- Creates as important role of creation of mires and mire hydrology

Source: Agrifood Finland

EXISTING SITUATION

The available volumes for existing growing media used; *peat, coir, wood fibre, bark, compost, perlite, rockwool and tuffs* which are today considered as potentially available materials, has turned out that coir and perhaps also peat are limited by annually available volumes.

Estimation of the increase in demand for future, based on the expected growth of the world population combined with the expected increase in living standards for most people.

- **Combined expectations suggest a 2.5 times increase in vegetable production**
- **Combined expectations suggest a 5 times increase in ornamental plant production**
- **The rooting media volume traded in 2050 is therefore estimated surpass the present amount about four times being as high as 240 million m3 per year.**

Source: Wageningen University

WHY ALSO SPHAGNUM MOSS?

World's need for growing media especially for food production continues to grow.

Growing media in soilless cultivation are relevant in several ways:

- **Growers request more accurate and even application of water and nutrients (+15% growth) and avoiding soil diseases (+5/50%).**
- **Authorities wants less water consumption and elimination of emissions of nitrate, phosphate etc.**
- **Increasing general opinion that vegetables are essential in a more healthy life style and ornamentals can promote wellbeing for the people living in urban areas.**

Source: Wageningen University

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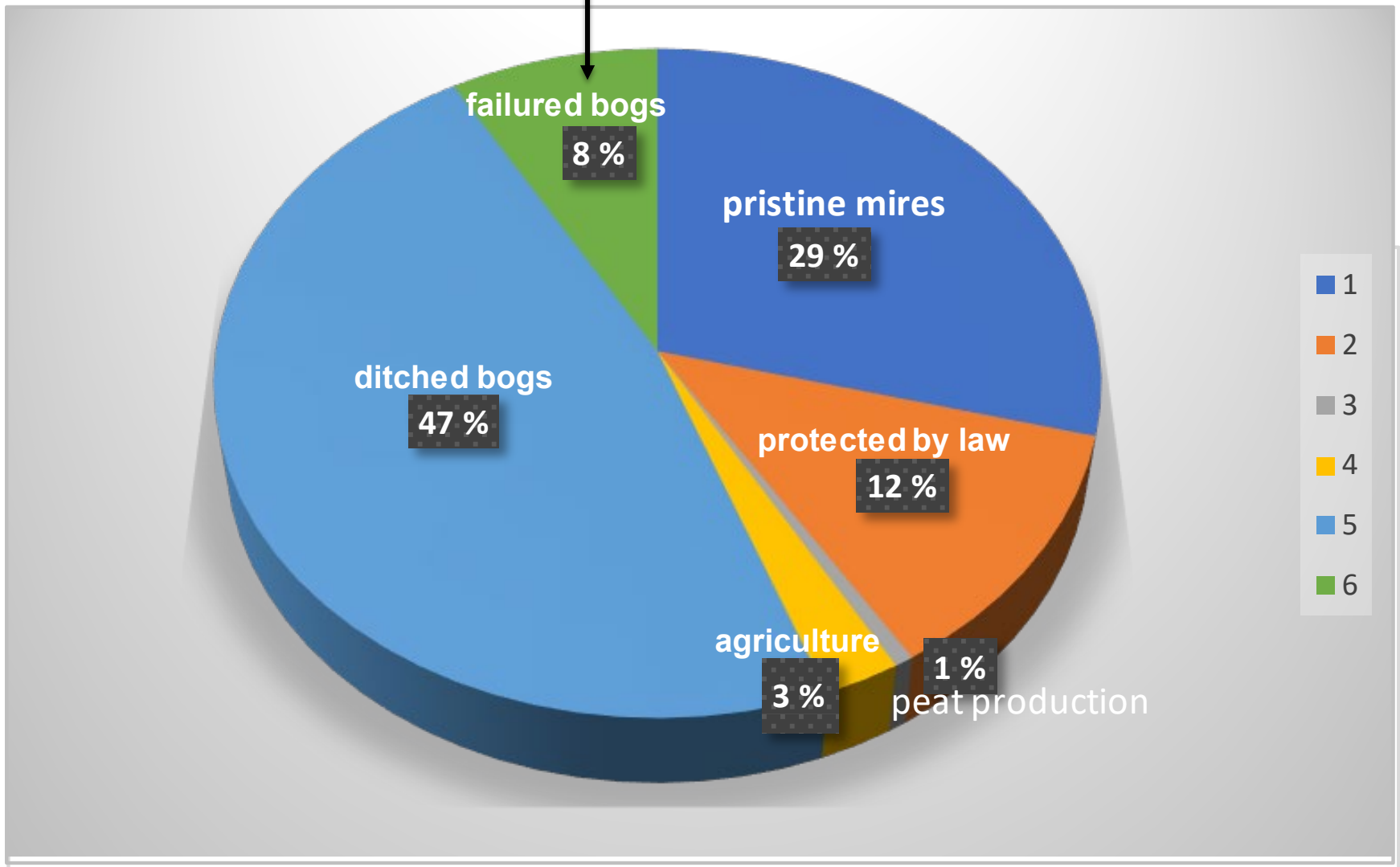
POTENTIAL FOR SPHAGNUM COLLECT IN FINLAND CA. 300 000 HECTARES



PEAT LANDS IN FINLAND, TOTAL 9,06 MILLION HECTARES

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”Example of failured bog” in Finland where major bog ditchings has been made in -60 and -70 for forestry purposes. Ideal area for Sphagnum Moss collecting

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SPHAGNUM MOSS

EcoMoss
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SPHAGNUM MOSS COLLECTING

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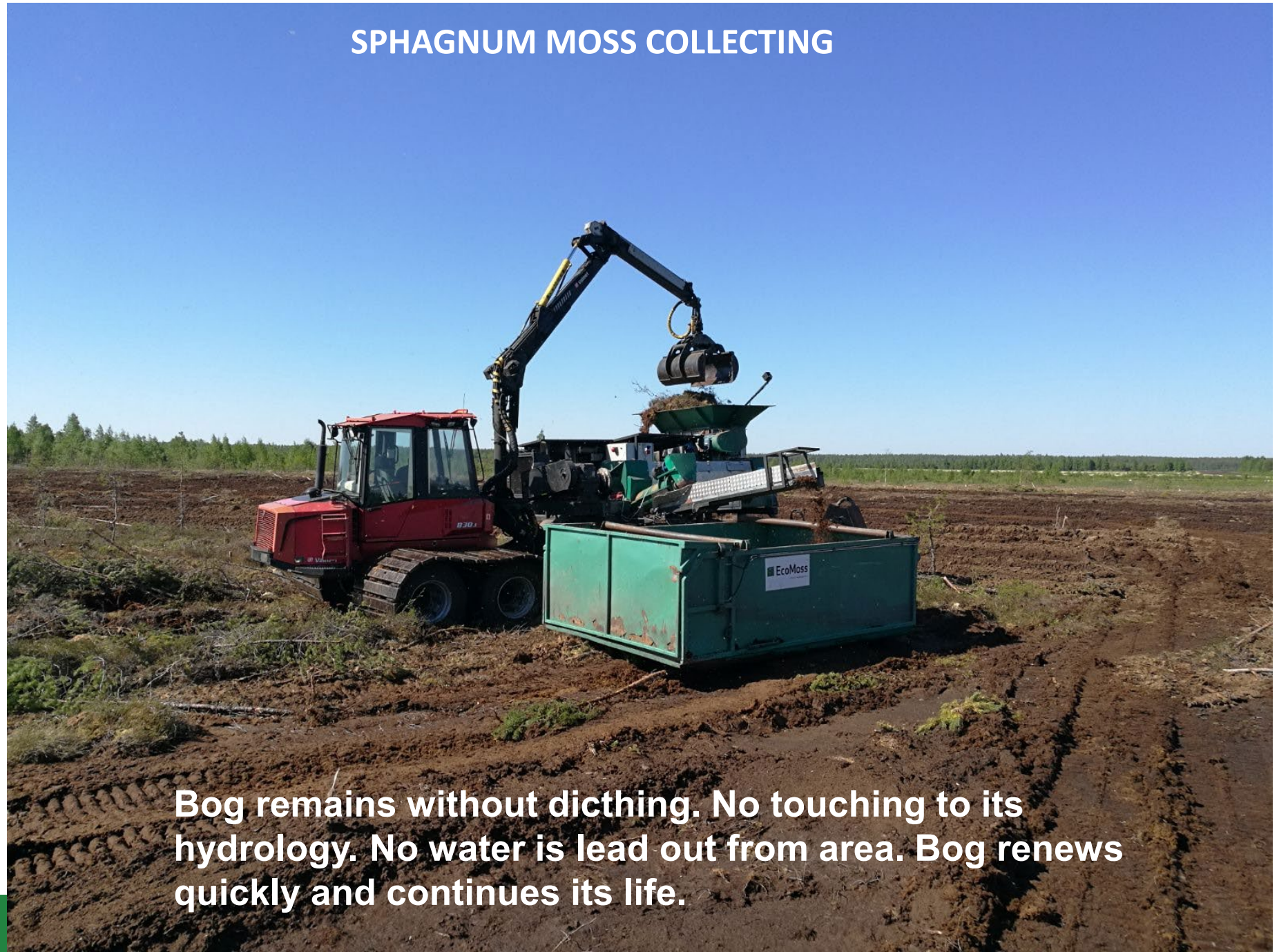

Bog remains without dicthing. No touching to its hydrology. No water is lead out from area. Bog renews quickly and continues its life.

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SPHAGNUM MOSS COLLECTING

Since bog remains as ”it is condition”, collecting needs not ditching. Mire remains as wet as original and natural. Collecting machinery needs to be light and having wide tracks to move on wet and soft surface.

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After harvesting of Sphagnum moss at 2016, new layer of moss has grown until 2018, 4-5 cm already

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EXPERIENCES AND CONCLUSIONS

- Renewal of Sphagnum moss after collection has been very quick.
- Even close as original conditions has been reached within 10 years after collecting.
- Recollecting can be ca. 20 years after first collecting.
- Carbon sink (CO_2) level returns to same as it was before collecting already in 5 years.
- Sphagnum moss collecting can be considered as renewable rawmaterial alternative for growing media.
- Sphagnum moss harvesting can be compared with sustainable forestry.

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