

# Vegan organic horticulture standards, challenges, socio-economics and impact on global food security

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# Outline

1. Background and definitions
2. Status-quo of vegan organic production
3. Standards for vegan organic horticulture:  
discussion and critique
4. Discussion: vegan organic and food security
5. Conclusions

# Background and definitions

*“vegetarian and vegan diets have seen an increased interest all across the world”*

- **vegetarian** = eating no meat
- **vegan** = as vegetarian but also no animal products (milk, eggs) and no inputs in plant production (e.g. manure, blood-meal)
- **flexitarian** = including one or more vegetarian and vegan days in a meat based diet
- **organic flexitarian** = 100% organic meat with one or more vegetarian organic and **vegan organic** days

vinceremos

Organic Wines

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## Our Range

### Gift Ideas

- Organic Red Wine >
- Organic White Wine >
- Organic Rose Wine
- Organic Sparkling Wine >
- Organic Fruit Wine
- Organic Beer >
- Organic Cider & Perry >
- Organic Fruit Drinks
- Organic Spirits
- Organic Fortified Wines and Liqueurs >
- Organic Half Bottles >
- Top 20 Organic Wines
- Other Spirits
- Further Options >

Quick Search

GO!



Wine Club

BALLYLAGAN  
ORGANIC



NO ADDED  
SULPHUR



FAIRTRADE



BIO-DYNAMIC



GIFT  
BOXES



PRE-MIXED  
CASES

## Vegetarian and Vegan wines

We list over 300 wines on our site of which the majority are suitable for vegetarians (approx. 98%) and vegans (approx. 82%)

This may sound obvious as no animal products are used as ingredients in wine. However, many wine producers use animal derived agents during the clarifying or fining process. These agents include gelatine (from pig or cow bones), isinglass (fish swim bladders), egg white and milk protein. They are used to remove proteins, yeasts and other items in suspension from the wine and are not actually present in the wine you drink, as they are racked off with the products they've removed before bottling.

Some wines are not fined at all, relying instead either on filtration or natural (gravitational) settling over time, or are fined using bentonite (an inert clay).

Unlike most other wine suppliers, we obtain information regarding fining agents and pass this on to our customers. We actively encourage our suppliers to avoid the use of animal products except where they feel this will significantly compromise the quality of the wine.

Most of our wines are registered with the Vegetarian Society and we offer a 5% discount for members of the Vegan Society (terms and conditions apply).



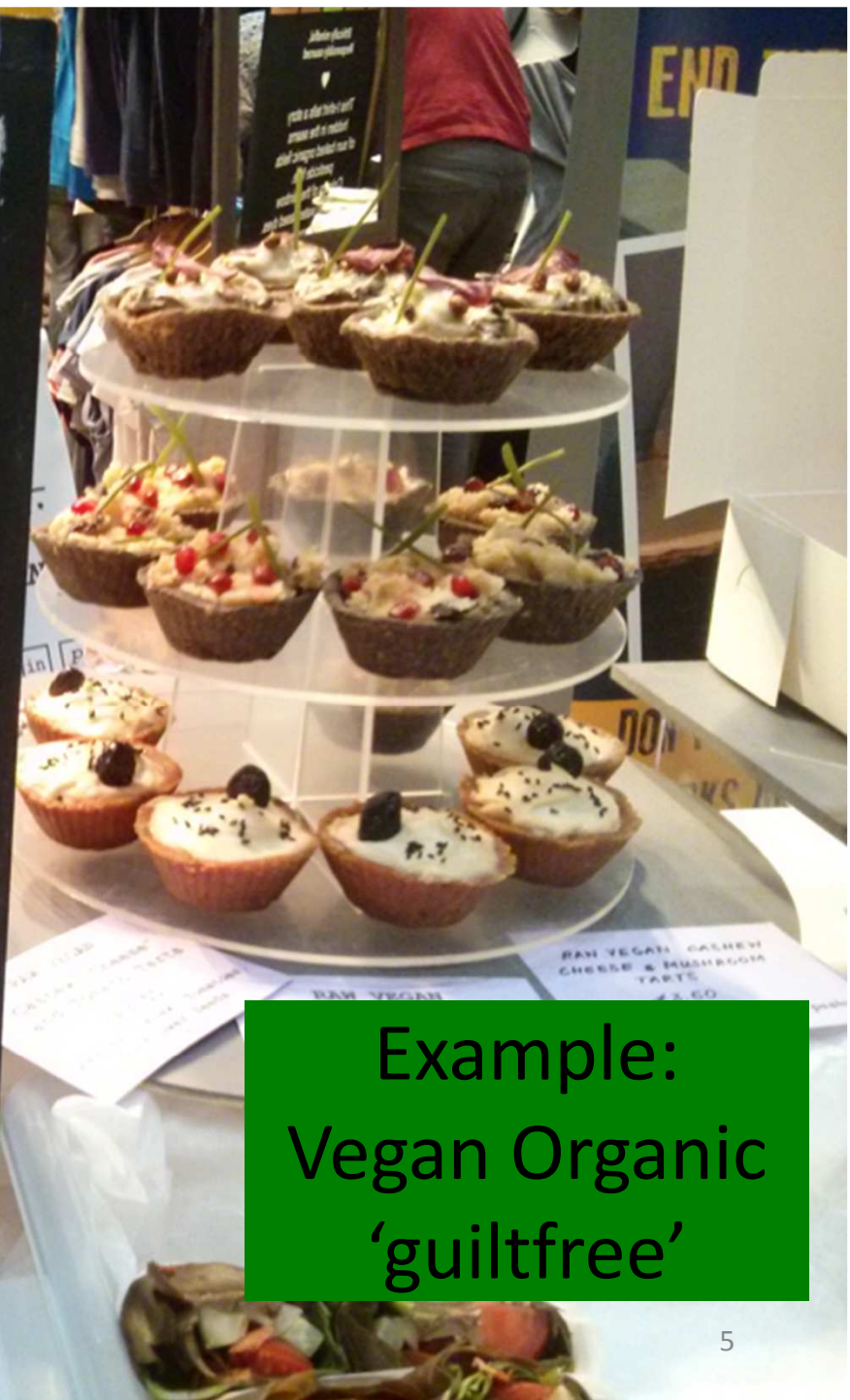


# RAW VEGAN

Free from: GLUTEN  
DAIRY  
EGGS  
GRAIN  
SOYA  
REFINED SUGAR  
AGAVE

HEALTHY . 'CLEAN' FOOD

#guiltfree 😊



Example:  
Vegan Organic  
'guiltfree'



# Example: Vegan Perfume

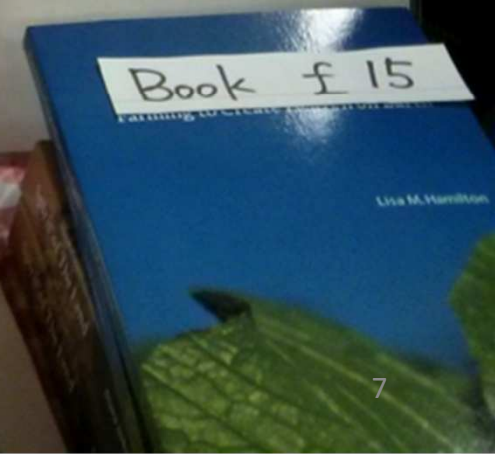
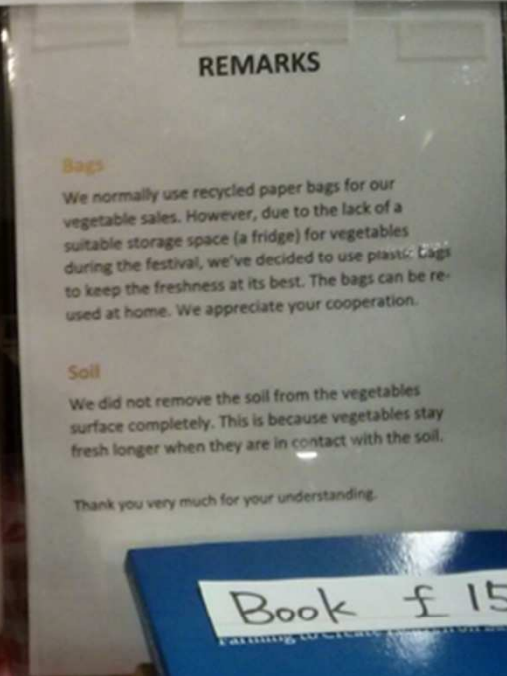




## Example: Organic certification

# No Animal Manure

# No Chemical



Please write CAPITAL LETTERS.  
If you are interested in Natural Agriculture.  
Please write your information.  
Thank you so much.

Name	Email	Phone
	shiniquist@hotmail.com	

# Status-quo and **potential** of vegan organic

- Germany: 25% of all organic farms in Germany are without livestock - stockless (Schmidt, 2004)

Total 23,271 organic farms: 25% = **5,800 organic farms without livestock** (Willer and Lernoud, 2015)

- Europe total 334,870 organic farms: 25% = **80,000 organic farms without livestock** (Willer and Lernoud, 2015)
- Existing vegan organic farms in many parts of the world like Canada, USA, Mexico, Argentina, India, Australia and New Zealand.



# Motivation ‘stockfree’ versus ‘vegan organic’

- stockless (viehlos) or stockfree organic a pragmatic approach (Bonzheim, 2014)
- vegan organic (bio-vegan) a more idealistic approach (Bonzheim, 2014)

Motives are ethical, ecological and social, and hence ‘vegan organic’ can be distinguished from stockless, with the latter being more economically motivated within the existing values of organic.

# Our definitions

## ‘stockfree’ - ‘vegan organic’

*“The term ‘stockless’ is not used by anyone within the vegan movements as it indicates something is missing (– less), while ‘stockfree’, (– free) is indicating that animals are not necessary and horticulture and diets can easily do without them completely.”*

‘stockfree’ is used as a more neutral technical term denoting the fact that the organic growing is free from all animal inputs (Hall and Tolhurst 2010, Tolhurst 2015 pers. comm., [www.stockfreeorganic.net](http://www.stockfreeorganic.net))

‘vegan organic’ is used by the Vegan Organic Network ([www.veganorganic.net](http://www.veganorganic.net)) and denotes more a campaign and social movement towards vegan diets or more vegan food and drink within flexitarian diets.

# Coining 'vegan organic'

## Why?



Why 'vegan organic' and not 'stockfree':

1. it translates better in many languages
2. it is already widely used by many consumers and understood as a diet
3. can also be used to describe other technical innovations like vegan anaerobic digestion (Schmutz, 2012)
4. as the movement grows, stockfree would be more difficult to explain to consumers compared to vegan, which also works as a logo

Those arguments also work against '**veganic**' as a combination of vegan and organic.

Using only the word **vegan** alone would not exclude inputs like insecticides, pesticides or GMOs.



# Vegan organic standards



A leading example of private standard:  
Vegan Organic Network (2007) in the United Kingdom

other standards in Germany and the USA refer to those

the purpose of the standard is to *“regulate commercial stockfree organic growers on registered holdings and act as a guideline to other growers. These Standards attempt to be inclusive to involve many growers and **transform** systems of food production.”* (Vegan Organic Network, 2007)

EU/national organic inspection is done together with the vegan organic private standard (In this case it is GB-ORG-05, Soil Association Certification Ltd.)

# Vegan organic standards (1)



## **Animals on the holding**

The licensee cannot keep animals for food production or commercial gain (companion animals, or animals that assist blind people are excluded). No animal manures or products of animal or fish origin can be used and growing animal fodder or bedding litter is also excluded.

## **Soil management**

Protecting soil life (for example, microbes and earthworms) and soil structure are important and this can be achieved by regularly replenishing organic matter, growing green manures, keeping the soil permanently mulched with decaying plant material and minimising tillage. (Vegan Organic Network, 2007)

# Vegan organic standards (2)



## Sources of fertility

**Primary sources** of soil fertility are plant-based composts, mulch, hay made from materials on the farm. Agroforestry sources and digestate from anaerobic digesters (bio-gas) if produced with vegan organic material.

**Secondary sources** are the same inputs from other certified organic systems.

**Restricted sources** are e.g.

- leaf mould and plant-based composts made from green waste by local authorities (*"restricted because they cannot be assured to be free from toxic or GM contaminants, or animal residues"*)
- plant-based composts from un-grazed upland meadows, plant wastes and by-products, from food processing industries (e.g. spent hops, barley) or seaweed (*"need to show that it is collected away from pathogen contamination"*)



# Vegan organic standards (3)



## Supplementary nutrients

### Permitted soluble fertilisers and alginates

- Supplementary soluble fertilisers and tonics created on the holding e.g. based on comfrey (*Symphytum officinale*), nettle (*Urtica dioica*) and herbs like chamomile (*Chamaemelum nobile*) and tansy (*Tanacetum vulgare*)
- Compost teas created on the holding
- Dried seaweed meal, liquid seaweed and other commercially available foliar feeds suitable for organic systems that are free from animal inputs
- Commercially available compound fertilisers and liquid feeds suitable for organic systems that are free from animal inputs

# Vegan organic standards (4)



## Permitted fertilisers

- P: Natural rock phosphate (e.g. Tunisian rock phosphate); Calcined aluminium phosphate rock (e.g. Redzlaag where soil pH > 7.5)
- K: wood-ash (from wood not chemically treated after felling)
- Ca and Mg: Dolomitic limestone, gypsum - calcium sulphate, ground chalk & limestone, Epsom salts (for acute magnesium deficiency), Magnesium rock
- Clays (e.g. perlite and vermiculite)

## Restricted fertilisers

- Sulphate of potash, sulphur
- Calcium chloride - for bitter pit in apples
- Industrial lime from conventional sugar production
- Natural rock potash - providing it has a relatively low immediate solubility in water and low chlorine content
- Trace elements: stone meal (ground basalt), boron, copper, iron, manganese, molybdenum, cobalt, selenium, zinc

# Vegan organic standards (5)



## Prohibited fertilisers

- Any animal by-product of livestock or fish origin
- Worm compost
- Human faeces and urine, sewage sludge
- Extracted **peat**
- Soluble fertilisers as the main source of fertility (Vegan Organic Network, 2007)

### ***6.5 Standard Principle***

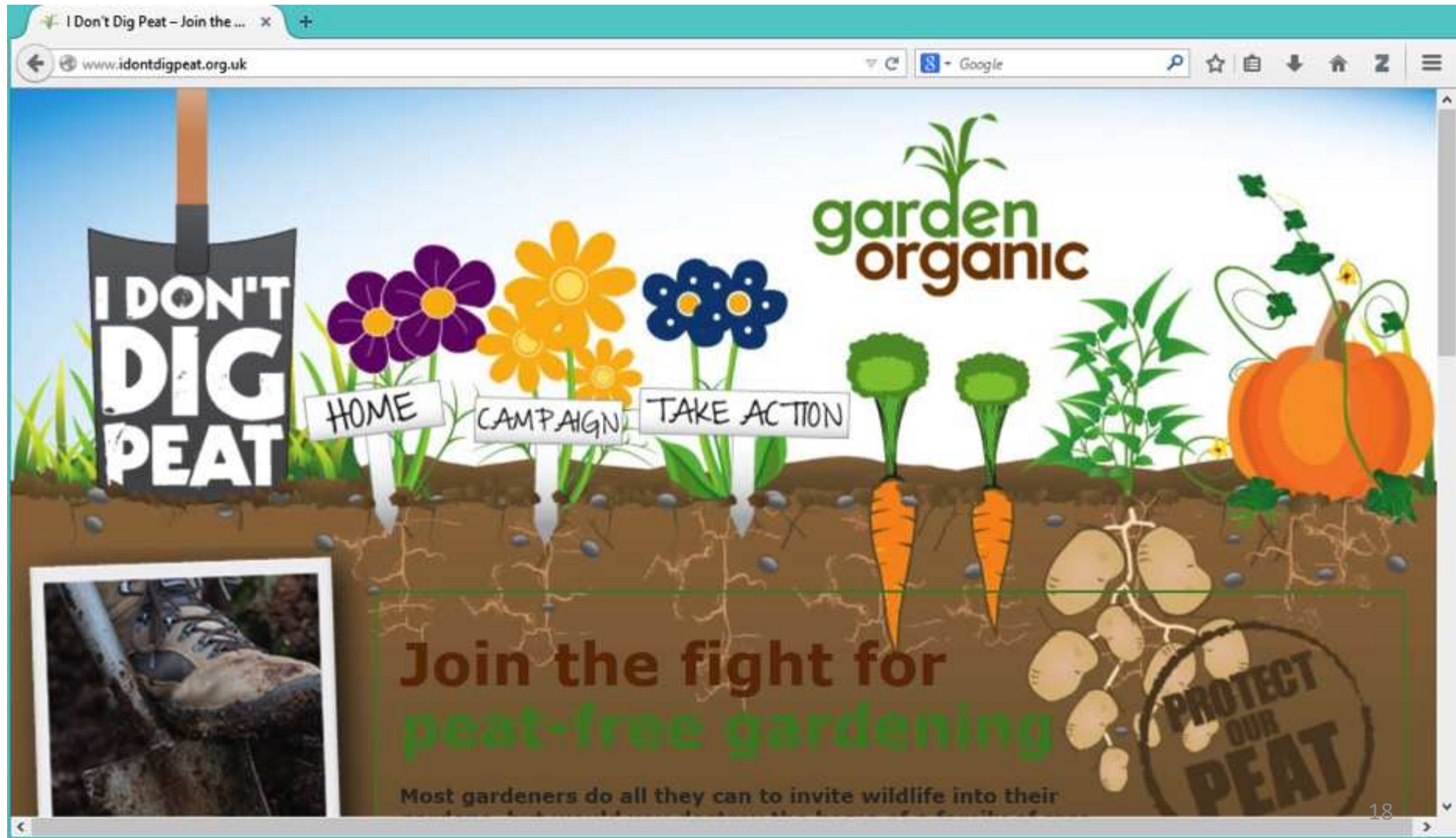
**Peat should not be used.**

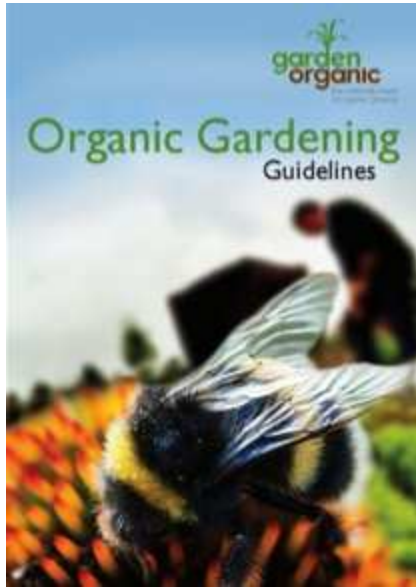
### ***6.6 Standard Principle***

**Coir should not be used.**



# I don't dig peat campaign [www.idontdigpeat.org.uk](http://www.idontdigpeat.org.uk)





# Peat and Organic Gardening



## Acceptable, but not for regular use

- Container grown plants and transplants in peat-based growing media, but without an accredited organic symbol



## Never acceptable in an organic garden

- Peat or coir as a soil conditioner
- Growing media containing materials not approved in these guidelines, including non-organic fertilisers and peat
- Peat, other than recycled/reclaimed peat
- Peat pots

# Soil association organic standards

## Managing semi-natural habitats, 4.5.25

you may cut turf or peat from peat bogs only for your own domestic fuel supply

*-> Vegan organic NO!*

## Manure, compost and plant wastes , 4.7.4

You may only use peat in propagating media, but you should use alternatives to peat where possible. Ideally these should be from sustainable UK produced materials

*- > Vegan organic NO!*

## Growing plants in pots and containers to sell as organic, 5.3.15

you do **not** use peat or slaughterhouse wastes



# Roadmap [www.the-hta.org.uk/page.php?pageid=1453](http://www.the-hta.org.uk/page.php?pageid=1453)



Responsible Sourcing & Manufacture of Growing Media' Project Toolkit (Excel)

## Habitat and Biodiversity – Coir

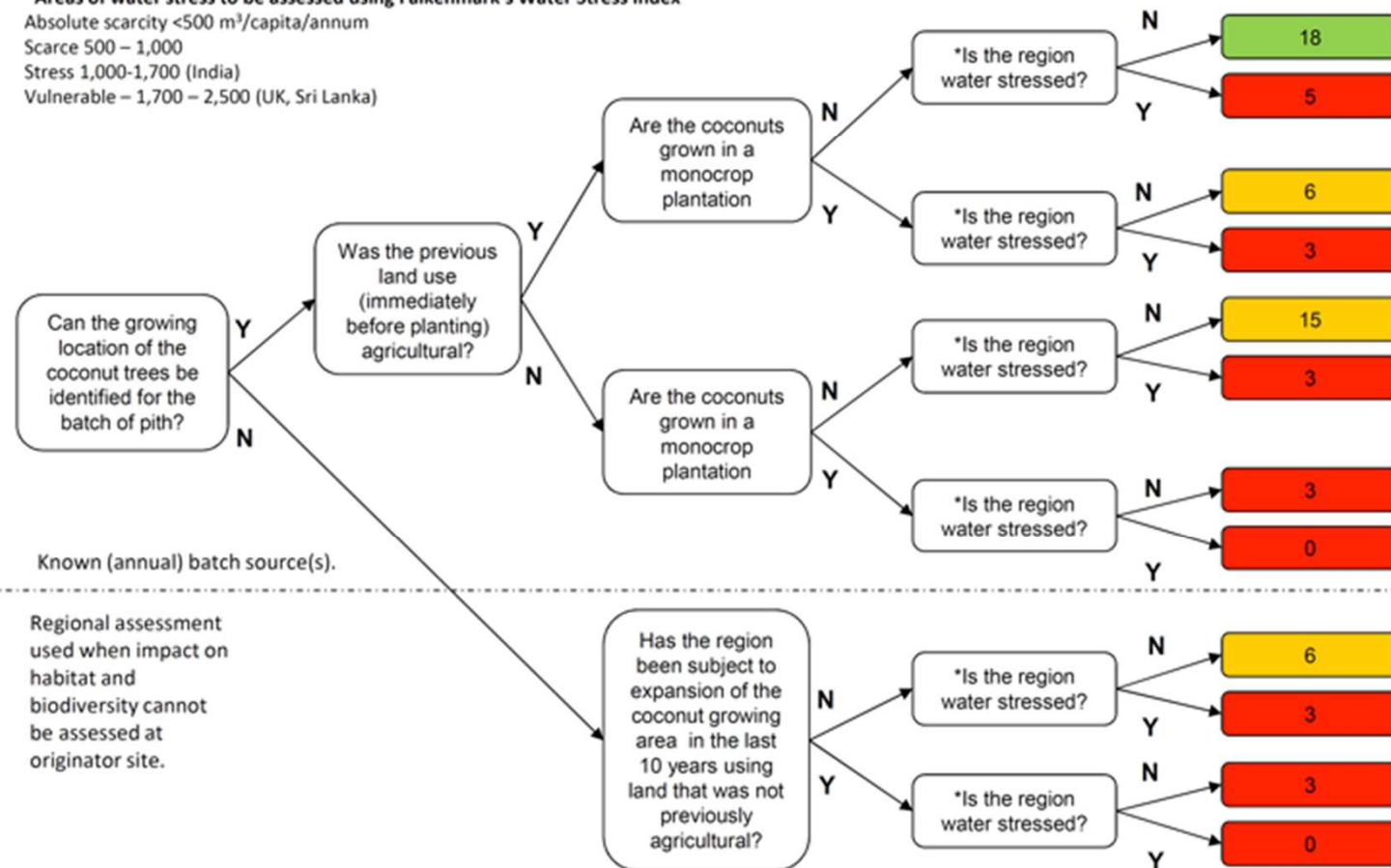
\*Areas of water stress to be assessed using Falkenmark's Water Stress Index

Absolute scarcity <500 m<sup>3</sup>/capita/annum

Scarce 500 – 1,000

Stress 1,000-1,700 (India)

Vulnerable – 1,700 – 2,500 (UK, Sri Lanka)



## Peat-free compost





## Peat-free vegan organic growing media





Peat-free vegan organic  
pressed block



# Vegan organic standards (6)



## Propagation

- vegan organic seed and transplants from the holding or commercial
- propagation composts from the holding, equally permitted are commercial stockfree vegan organic composts

## Disease, mollusc and insect control

- Prevention mixed cropping, rotational to break pest and disease cycles
- Permanent predator belts, including incorporating undisturbed perennial plants and attractant species of flowers in strips (e.g. *Phacelia* spp.)
- Installing some body of stagnant water to attract beneficial insects and creatures
- Compost to encourage beneficial antagonistic microorganisms
- Physical barriers e.g. netting, fleeces, brassica collars

**Natural pesticides, insecticides and biological controls should not be used.**



# Critique of vegan organic standards

## Biological pest control

Works especially well in greenhouses.

It is not clear why biological control, which is happening already by introducing habitats, and host plants, should not be further used.

## Fossil fuels, peat and coir

Phasing out of fossil fuels, peat in growing media is forward looking

However, the total phase-out (“energy revolution”) of fossil fuels including peat is already on the agenda in the EU e.g.:

- Germany **2040** for fossil fuel
- United Kingdom **2030** for peat also in commercial horticulture

For vegan organic to take a lead is good, but wider horticulture will catch up!

The exclusion of **coir** (a natural fibre extracted from the husks of **coconuts**) can be considered more of a transport issue in the UK.

In countries where organic coconuts are regularly grown coir would be a local plant-based by-product.

# Critique of vegan organic standards (2)

## **Vegan organic fertilisers from the holding or linked farms**

The requirement of vegan organic to use the farm as the primary source of soil fertility will act as a **natural constraint** on too many greenhouses in the landscape. Like producing feed for an organic dairy on surrounding land, vegan organic greenhouses require biomass for composts, mulches, anaerobic digestion and growing media.

Besides fertility from the soil, as the main source, a vegan organic greenhouse requires also a **considerable amount of additional nutrients**: compost, mulch, pellets and liquid fertiliser. Such a mixture can be provided by a permaculture and agroforestry system combined with leguminous crops grown as fertiliser and a vegan anaerobic digester (Schmutz, 2012).

⇒ vegan organic greenhouses are “**paying back**” with a more diverse landscape around them

# Socio-economics of vegan organic greenhouses

Fertility costs in a none-vegan, organic unheated tomato crop :  
Green waste compost, straw mulch, vinasse (a by-product of sugar beet processing), lime and undersown yellow trefoil (*Medicago lupulina*).

**2-4% of total variable costs** (Schmutz et al., 2011)

If vegan organic inputs would be e.g. 50% more expensive they would still only be  
**3-6% of total variable costs**

Vegan organic consumers are often **very committed** and e.g. various types of community supported agriculture (CSA) provide a good business environment to make the investments required in terms of agroforestry trees, biomass processing, anaerobic digestion, or renewable sources for greenhouse heating

Vegan consumers can also spend proportionally more on their food as they make **big savings by not buying organic meat** and hence can be considered less price sensitive

# Discussion: vegan organic and food security

## Can or must vegan organic feed the world?

Vegan and vegetarian diets and those who exclude certain meats for religious and spiritual reasons are **far more common** than it may look from a Europe-centric worldview

The often-repeated assumption that when people become more educated and have more disposable income they would automatically increase meat consumption is **wrong on a global scale**.

United Nations: *“A substantial reduction of (agriculture’s) impacts would only be possible with a substantial worldwide diet change, away from animal products.”*  
(UNEP, 2010)

This is exactly the vision of the organic movement in German it is often called **“Agrar-Wende = Agri-Revolution”** (Gottwald and Boergen, 2014).

# Revolutionary change – how much vegan?

The vegan and organic movements share the same critic of industrial farming, where animals have no rights to fresh air, natural daylight or freedom of movement, and welfare is measured in terms of cost-efficiency

The two movements however draw different conclusions: (1) exclude all animals from agriculture, or (2) develop organic livestock systems based on the principle of care (IFOAM, 2015) and a rights-based approach for domesticated animals.

Gottwald and Boergen (2014) defend organic livestock and the need for organic animals in some production system, but agree with the need to cut meat consumption in Western countries substantially (minimum 50% reduction)

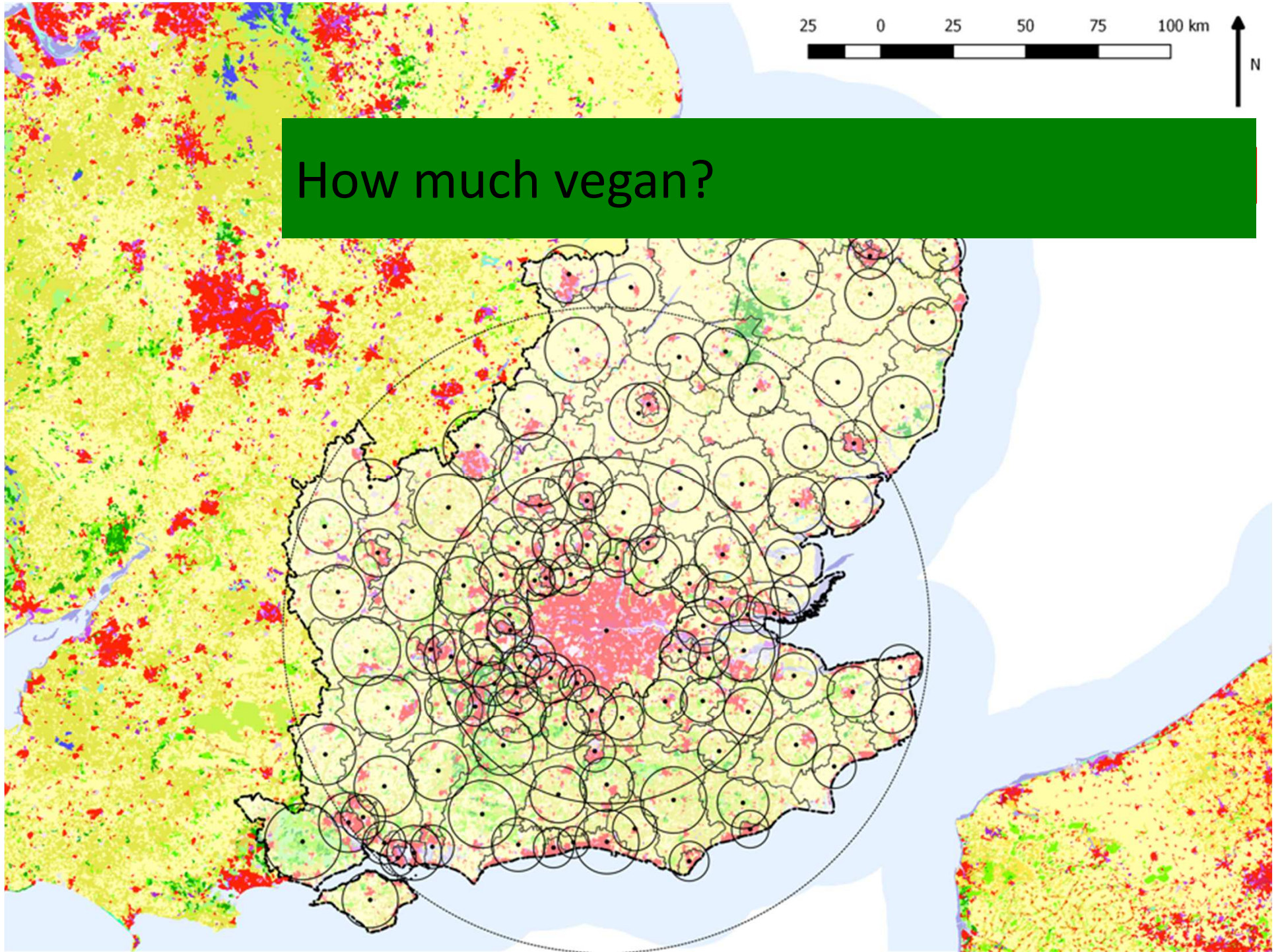
Therefore, the question is once the estimated 15% vegan, vegetarian and flexitarian organic diets (1%, 2%, 11%) have doubled twice at what level of meat-free diets do we have to start worrying about the remaining organic farm animals?



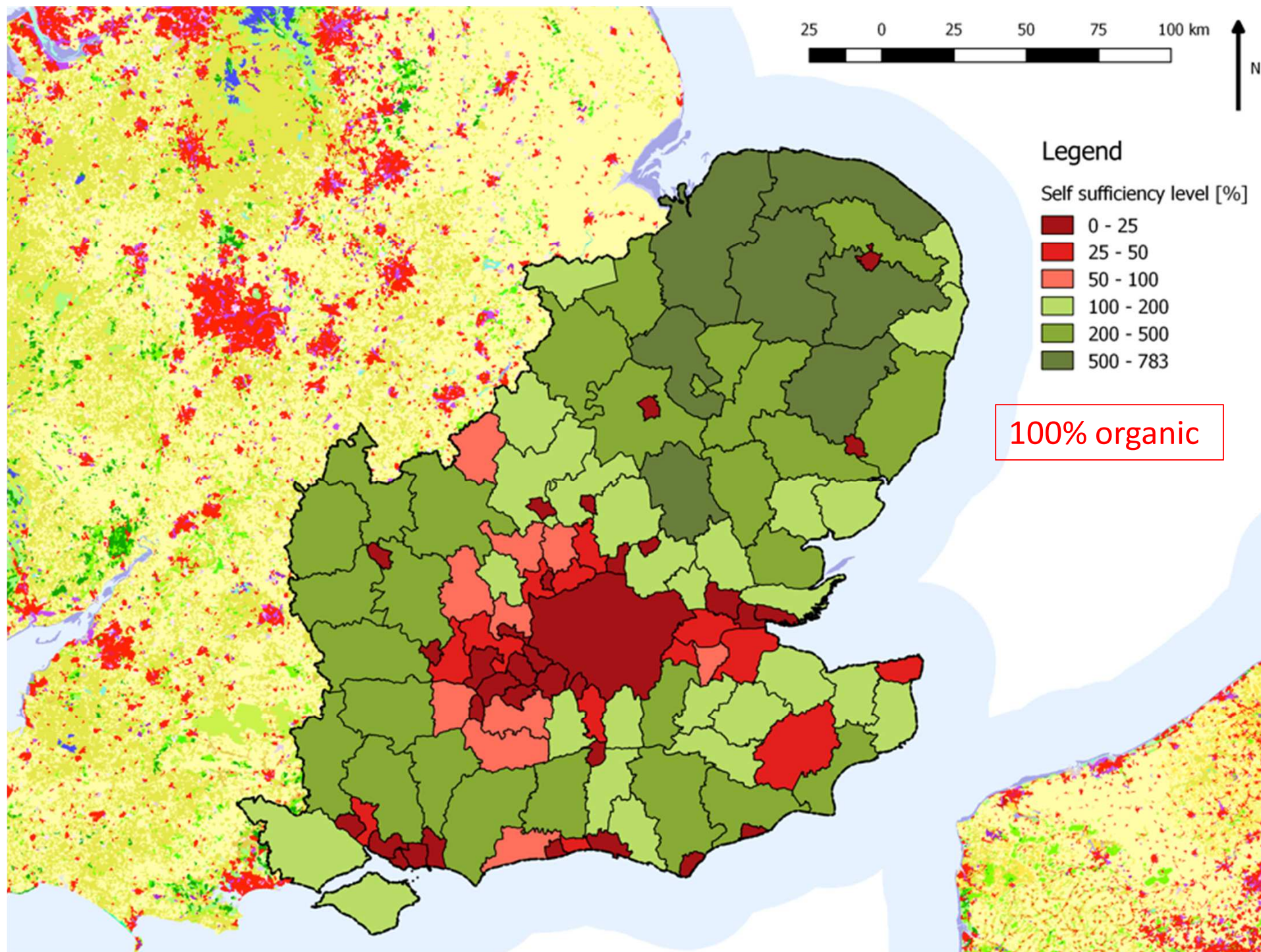
How much vegan?

25 0 25 50 75 100 km

N







# How much vegan?

MAPS (Metropolitan Area Profiles and Scenarios) modelling  
(Wascher et al., 2015).

Case study “World City London” one of the most diverse ethnicities (e.g. less than 50% of citizens are white) and multicultural diets => a proxy for future diet diversity in the West.

# How much vegan?

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Models predict that the food and drink demand of 26.5 million people projected for 2030 in the London metro region can be met by 100% organic production, a healthy organic diet, and a moderate reduction in food waste from the land in the metro region (This is food which can reasonably be grown in the climate of London).

The regional food supply is about 62% of the total area per person required for all food and drink consumed. The ratio does not change by shifting from current unhealthy to ‘healthy diets’, or ‘healthy organic diets’, or 1 extra vegetarian day in a organic healthy diet. However, once 2 vegetarian days per week are introduced the ratio changes to 57% (47% if 7 days are vegetarian - vegan was not separately modelled)

# Conclusions

- vegan organic greenhouses are technically and economically feasible
- vegan organic greenhouses are “knowledge intensive”
- committed consumers and community supported agriculture schemes (CSA) provide excellent support to grow the sector
- growing crops to feed plants in organic greenhouses can equally be a part of a diversified land use as organic livestock systems
- farmed animals are not need to provide fertility or diversity
- consumers of a vegan or flexitarian organic diet do require less land and the remainder can be use for biodiversity and for wild animals

But what happens in a 100% vegan organic landscape to farmed animals?



# Conclusions

- farmed animals can be considered an important cultural heritage of humanity (we are as domesticated as farm animals). Many landscapes dependent on livestock e.g. upland pastures, prairie, alpine mountains, tundra, cider orchards
- replacing all this with biomass production for energy and feeding plants may not be the preferred vision of citizens and tourists
- scenario modelling indicates that 100% vegetarian or vegan reduces land use considerably in the Global North, it might shift the remainder partly to southern climates
- even those who argue organic livestock is still needed, agree that a substantial reduction in meat consumption is necessary (more than 50%)
  - => vegan, vegetarian and flexitarian organic diets should be the **norm** following the UN's guidance
  - if this happens - it could be called a “revolution”

# Thank you

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