ELF-EMF exposure & risk perception in the belgian farming community

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NL   FR

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Context

- New high-voltage power lines projects

- Problems with livestock and crop production reported

- Few studies have been conducted on this topic

Objectives

- Learn more about different existing **farmers' opinions**

- **Capture narratives**

- **Make contact** with farmers who are concerned

Survey

➢ NL + FR

➢ Pre-tests

➢ Ethical committee approval

➢ Online : November 2023 – March 2024

Survey

➢ Socio-demographic information

➢ Exposure perception

➢ Risk perception

➢ Changes observed

- > 18 years old
- Livestock and/or crops
- Belgium

Communication

- Contact list → email

- Social media, website, newsletter

- Press articles

→ Several reminders sent

Waargenomen blootstelling 1

Hieronder volgen enkele voorbeelden ter illustratie van de in de volgende vragen gebruikte termen:

<u>Collectieve elektrische installaties</u>: bovengrondse hoog- en laagspanningsleidingen, ondergrondse hoogspanningskabels, transformatoren, windturbines, enz.

<u>Individuele elektrische installaties (landbouwbedrijven)</u>: elektriciteitsmeters, elektriciteitskabels, schakelaars, stroomonderbrekers, robots, automaten, melktanks, fotovoltaïsche apparatuur, enz.

<u>Collectieve telecommunicatiesystemen</u>: antennes, glasvezel, zendmasten, enz.

<u>Individuele telecommunicatiesystemen</u>: GSM, Wi-Fi, enz.
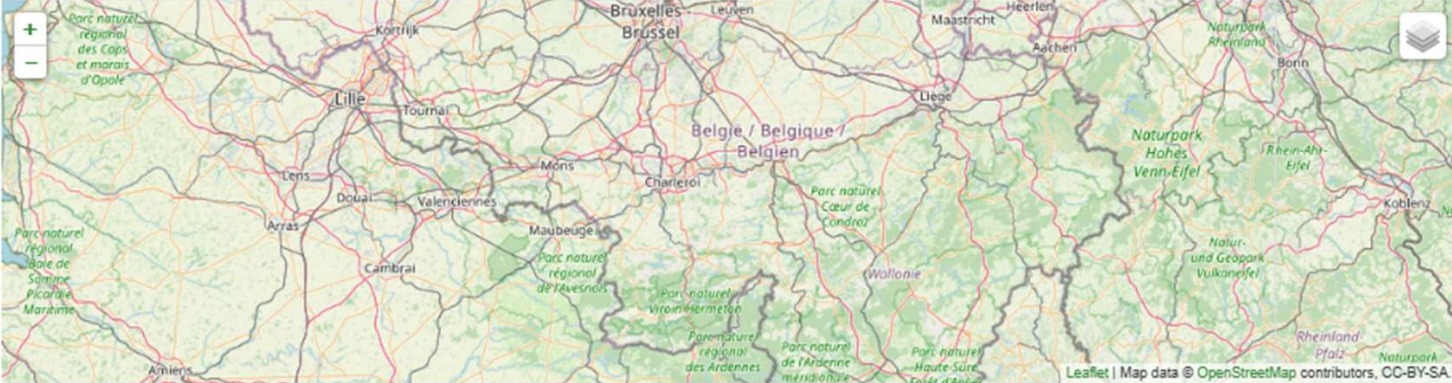
Wijs op de volgende kaart een 1e locatie op uw bedrijf aan (buiten en/of binnen).
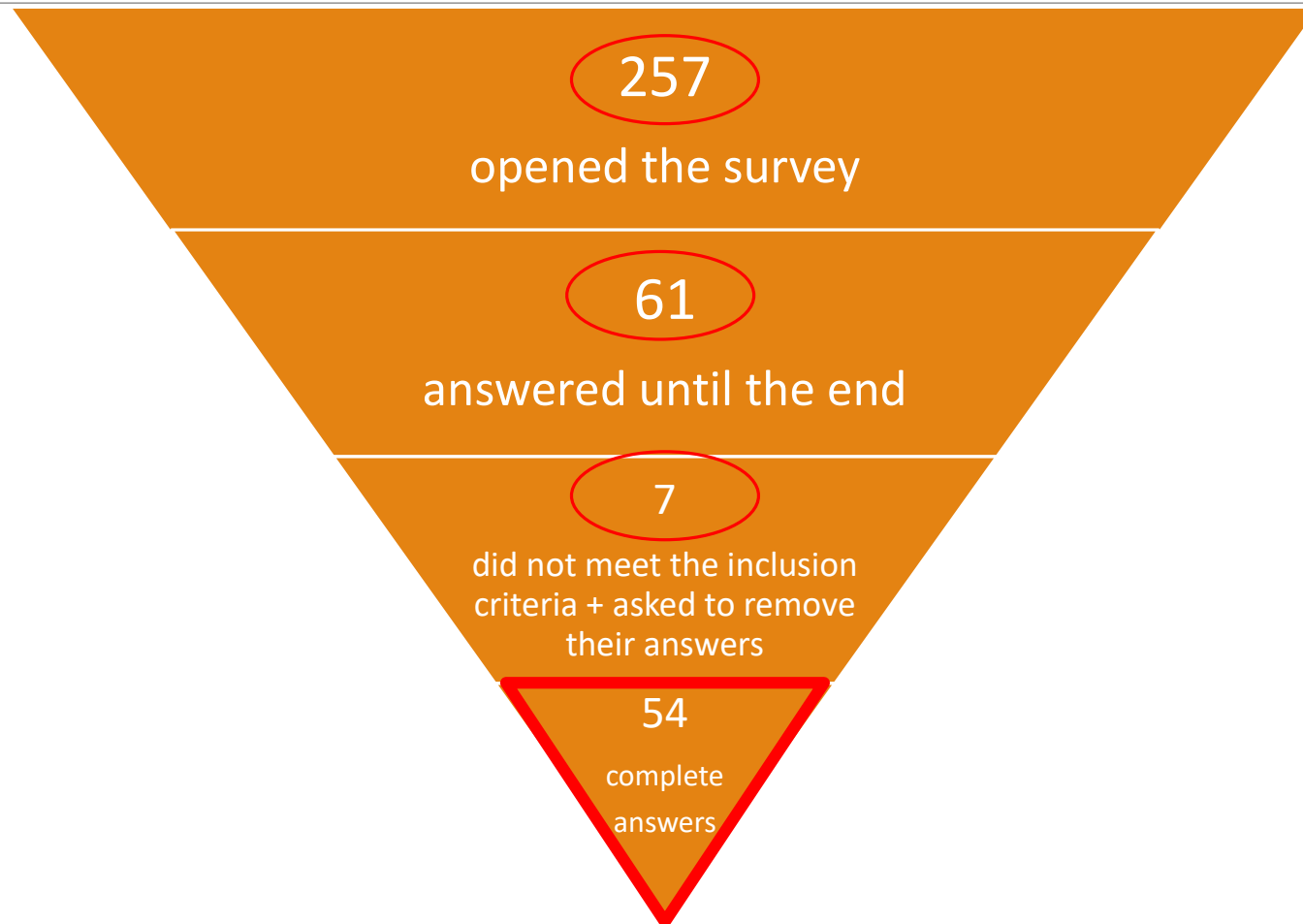
Klik om de locatie in te stellen of sleep en verplaats de pin. U kunt ook de coördinaten invoeren

Number of answers

257
opened the survey

61
answered until the end

7
did not meet the inclusion
criteria + asked to remove
their answers

54
complete
answers

Respondent profile
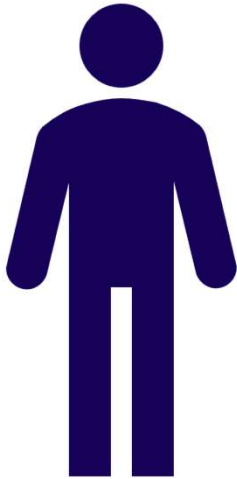
From Wallonia (62%)

Aged 45-54 years (41%)

Head of the farm (83%)

Animals & crops (55%)

Affected farmers

= farmers who **reported negative changes** in their animals or crops, that they attributed to EMF infrastructures.

➡ **18 breeders and 2 farmers**

n= 54

Negative changes observed

Changes observed in animals by affected farmers

Animals n= 16
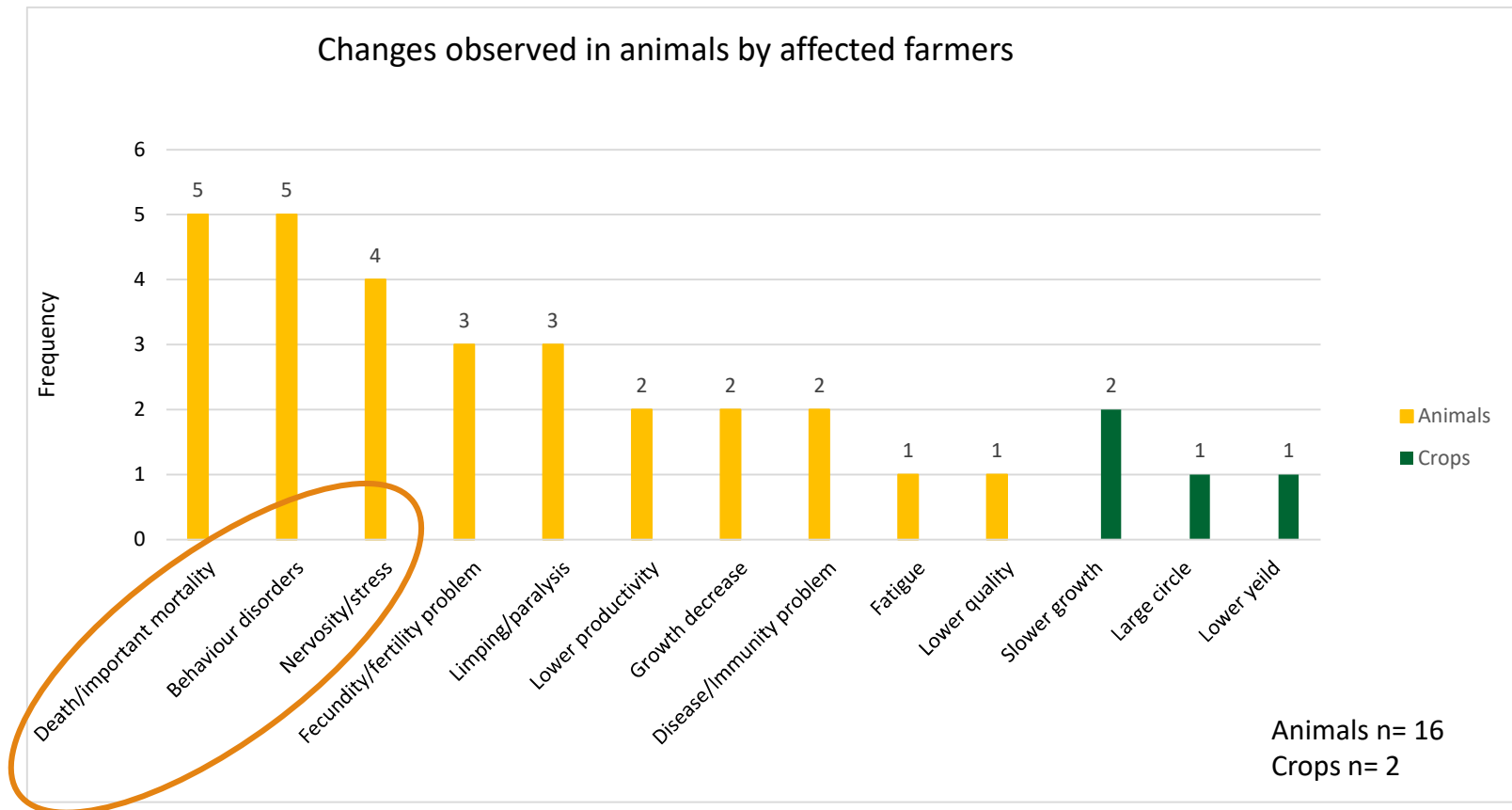Crops n= 2

Suspected infrastructures

Suspected infrastructures by the affected farmers
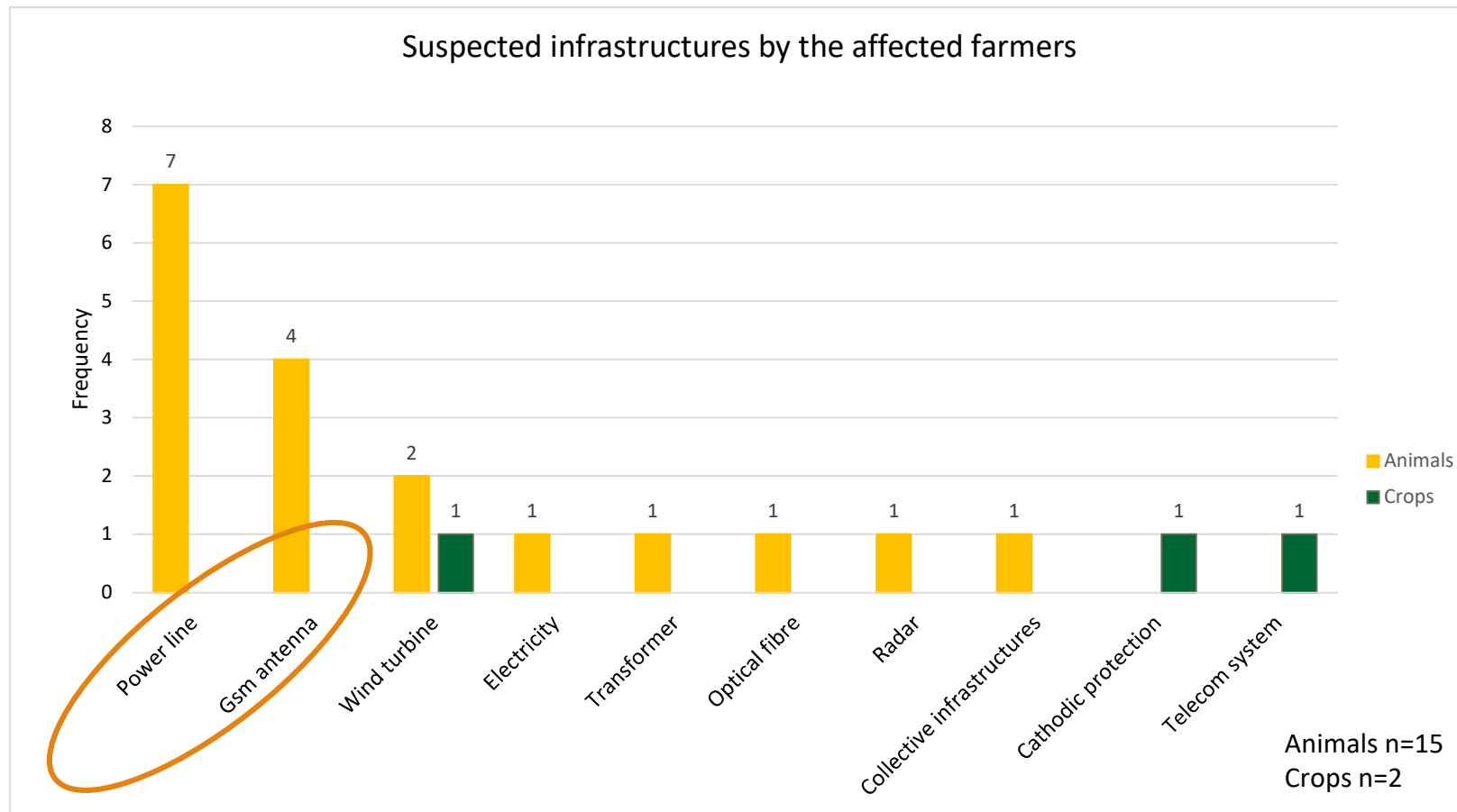
Exposure perception, CEI

Respondents' exposure perception of animals to EMF from CEI

Respondents' exposure perception of crops to EMF from CEI
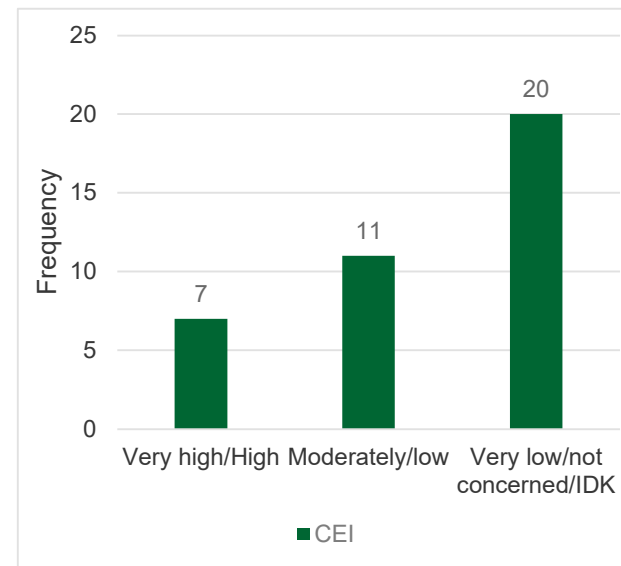
Crops are less exposed than animals ?

Animals n= 46
Crops n= 38

CEI = Collective Electrical Infrastructure

Risk perception

➢ Perceived effects

➢ Worries

➢ Perceived control

➢ Perceived scientific knowledge
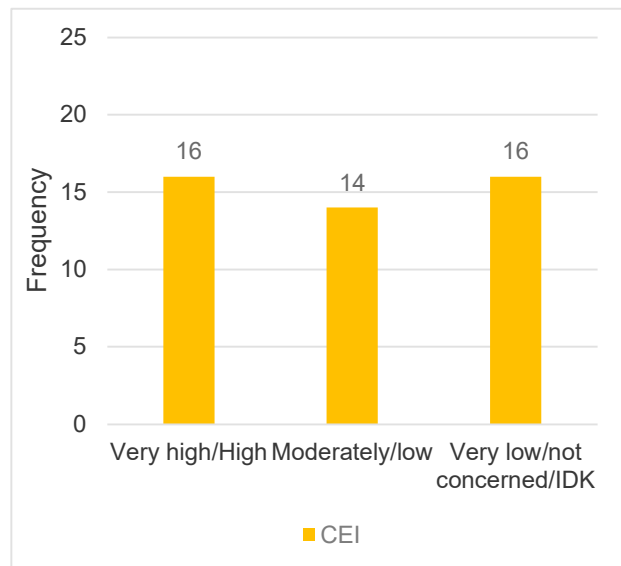
Perceived effect

Perceived effects of EMF from CEI on animals
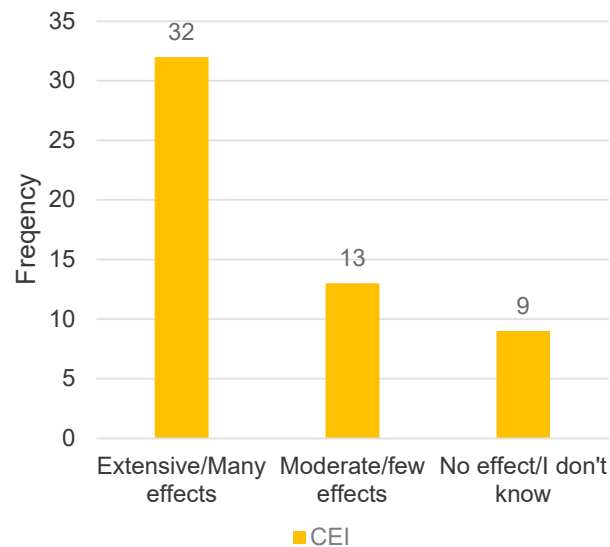
Perceived effects of EMF from CEI on crops
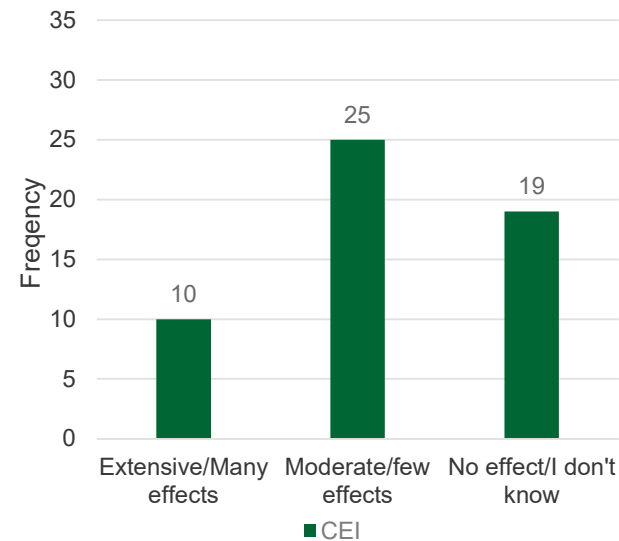
A lot of effects on animals, less on cultures ?

Animals n= 54
Crops n= 54

CEI = Collective Electrical Infrastructure

Worries, CEI

Worries about EMF from Collective Electrical Infrastructure (CEI)
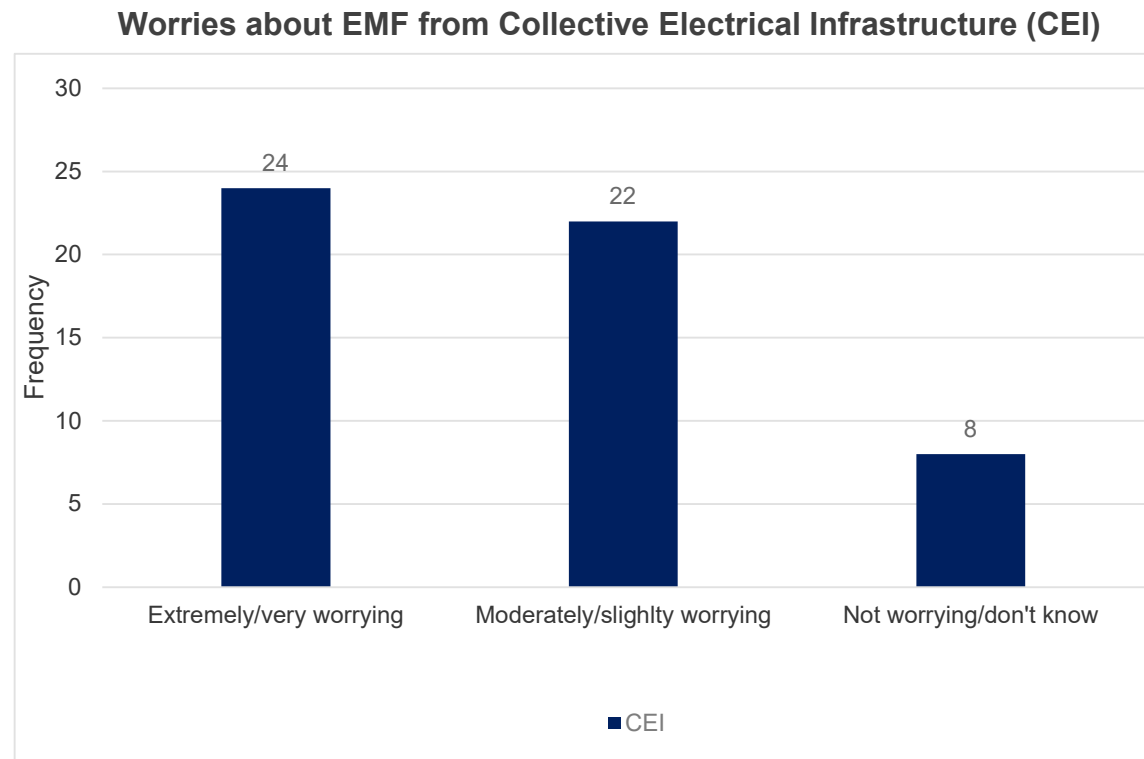
Worried   n= 54

CEI = Collective Electrical Infrastructure

Perceived knowledge & control, CEI

Perceived scientific knowledge of the risk of EMF from CEI

Control over prevention of the potential effects caused by EMF from CEI

Scientific knowledge exist, maybe not enough ?
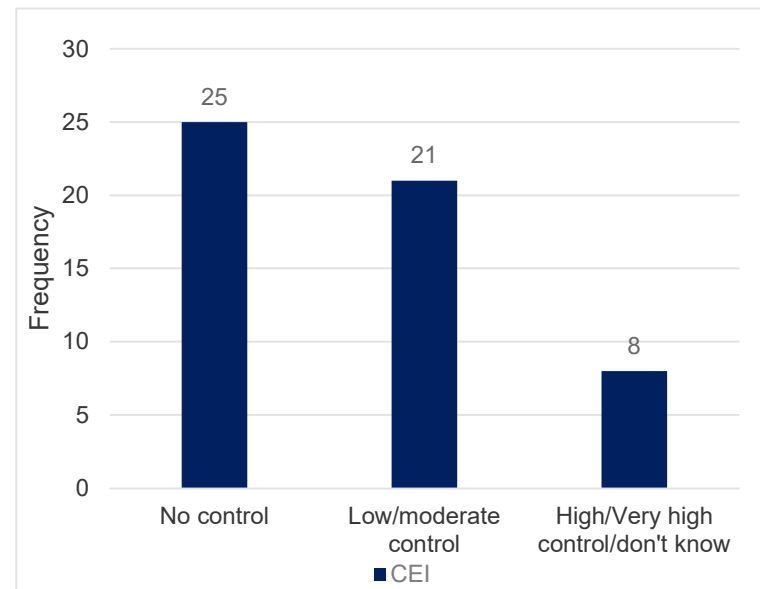
Not much control

n= 54

CEI = Collective Electrical Infrastructure

Odds of being an affected farmer (animals):

- **Exposure perception:**
    - Exposure perception from CEI:
        - Low/Moderate, **OR 15** (1.78, 126.21)
        - High/Very high, **OR 21** (2.58, 170.68)
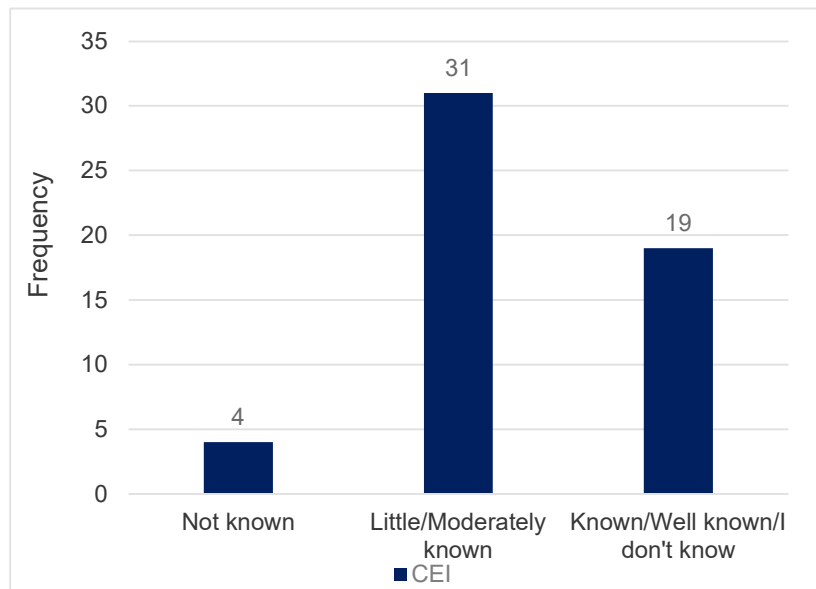
        Reference: No concerned/Very low/Don't know

    - Only 3 affected farmers suspecting exposure from a power line **geolocated** an exposure point **within a 150 m** buffer zone from a power line.

- **Risk perception:**
    - Risk perception score : **OR 2.25** (1.17, 4.30)

    Score from 0 to 8, with a higher score representing a higher risk perception

    OR: Odds Ratio, CEI : Collective Electrical Infrastructure

Take-aways

➢ Some farmers reported being affected by infrastructure emitting EMF

➢ Key insights gained :
  ▪ More issues were reported in **livestock**
  ▪ **Power lines** and **GSM antennas** were the most frequently cited infrastructures (= collective infrastructure)
  ▪ **Death/mortality** and **behavioural disorders** were the most commonly reported problems

➢ Limits:
  ▪ Sample is not representative to the Belgian farming community (selection bias)
  ▪ The focus here is on the results related to the collective electrical infrastructure, the telecommunications data is not included.

➡ **Case study** with volunteer affected farmers

Also in other countries

- French Government report (2023) → *[Characterisation of the impact on livestock farming of telephone masts, electrical installations and wind turbines](#)*,

  - ➤ '*The figures from this survey show that a non-marginal number of farms located near the facilities under study are affected by unexplained disturbances. However, it is not possible to identify the cause of these disturbances.*'

  - ➤ '*However, it has to be said that, even if the data cannot be used on their own to characterise this impact in detail, they undeniably shed light that was lacking for further research in this field.*'

EDC2

Any questions?

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EDC2   Because of the short time available, all questions will be at the end of the seminar in a panel session.

Eva De Clercq, 10/11/2025