



THIS PROJECT HAS RECEIVED FUNDING FROM
THE **EUROPEAN UNION' HORIZON 2020 RESEARCH
AND INNOVATION PROGRAMME**
UNDER GRANT AGREEMENT N. 101000339



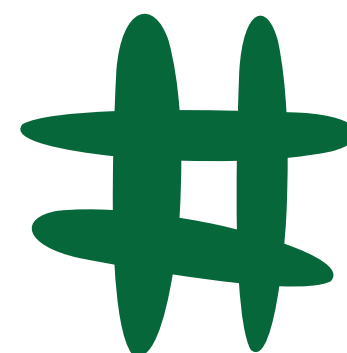
ARABLE FIELDS

**Survey #2: Details of crop
management – Indicators of PPP
use, impact and cost-efficiency**



TOPICS OF SURVEY #2:

- TFI AS A FUNCTION OF CROP
- TFI AS A FUNCTION OF FARM
- TFI AS A FUNCTION OF HRII
- TFI AS A FUNCTION OF IPM INDEX
- HERBICIDE TFI AS A FUNCTION OF TOTAL CHEMICAL TFI
- CASE OF SWITZERLAND: TFI CONVENTIONAL FIELD AS A FUNCTION OF TFI INNOVATIVE FIELD
- ECONOMIC ANALYSES



NUMBER OF
FARMS

111



PARTICIPANT COUNTRIES

**DENMARK, GERMANY,
IRELAND, SLOVENIA,
SWITZERLAND,
THE NETHERLANDS,
UNITED KINGDOM, POLAND**



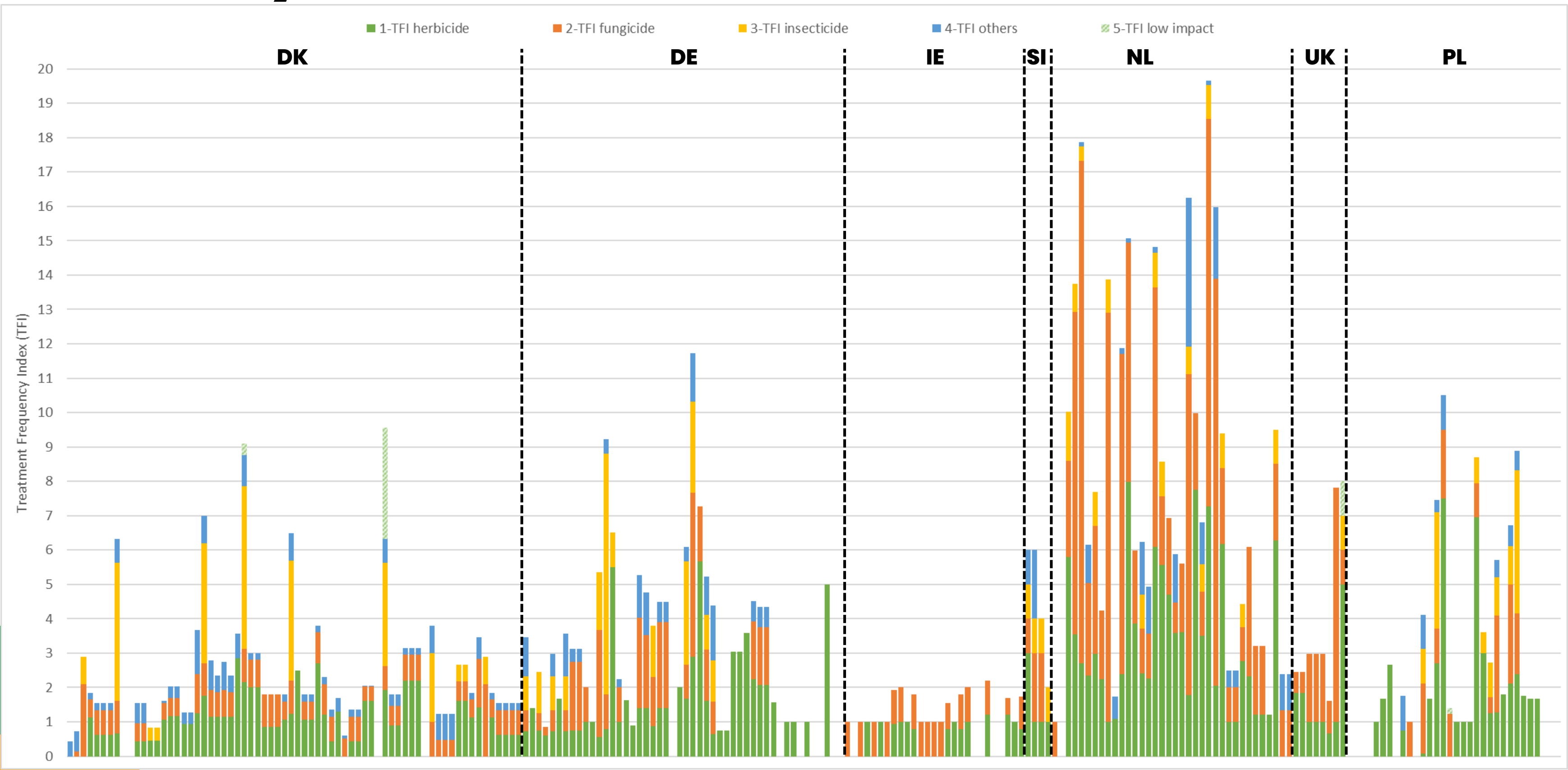
TOTAL ORGANIC
FARMS

1

**+65 with an
innovative
cropping
system**

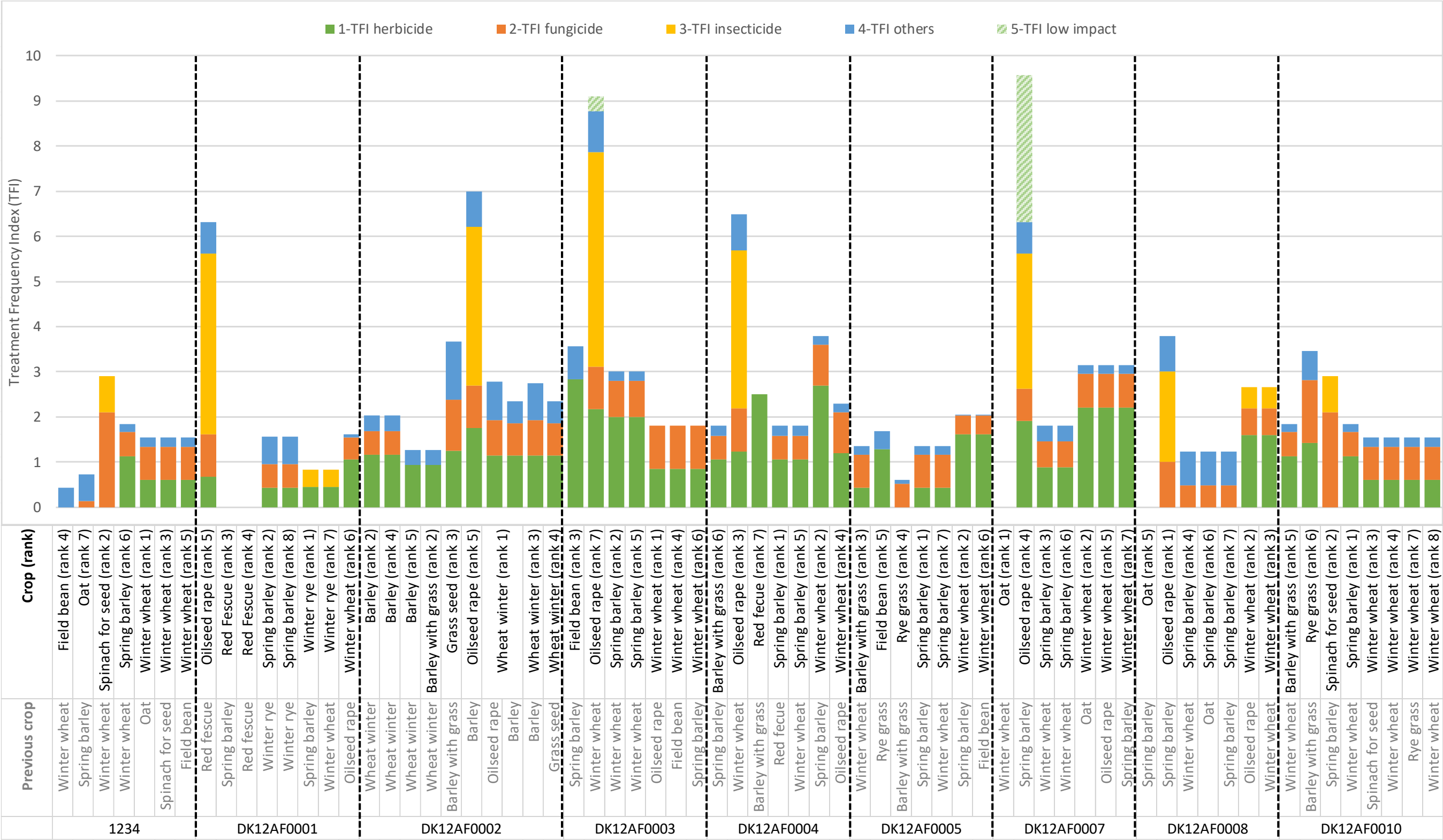
TFI as a function of crop

All country without Switzerland



TFI as a function of crop

Denmark

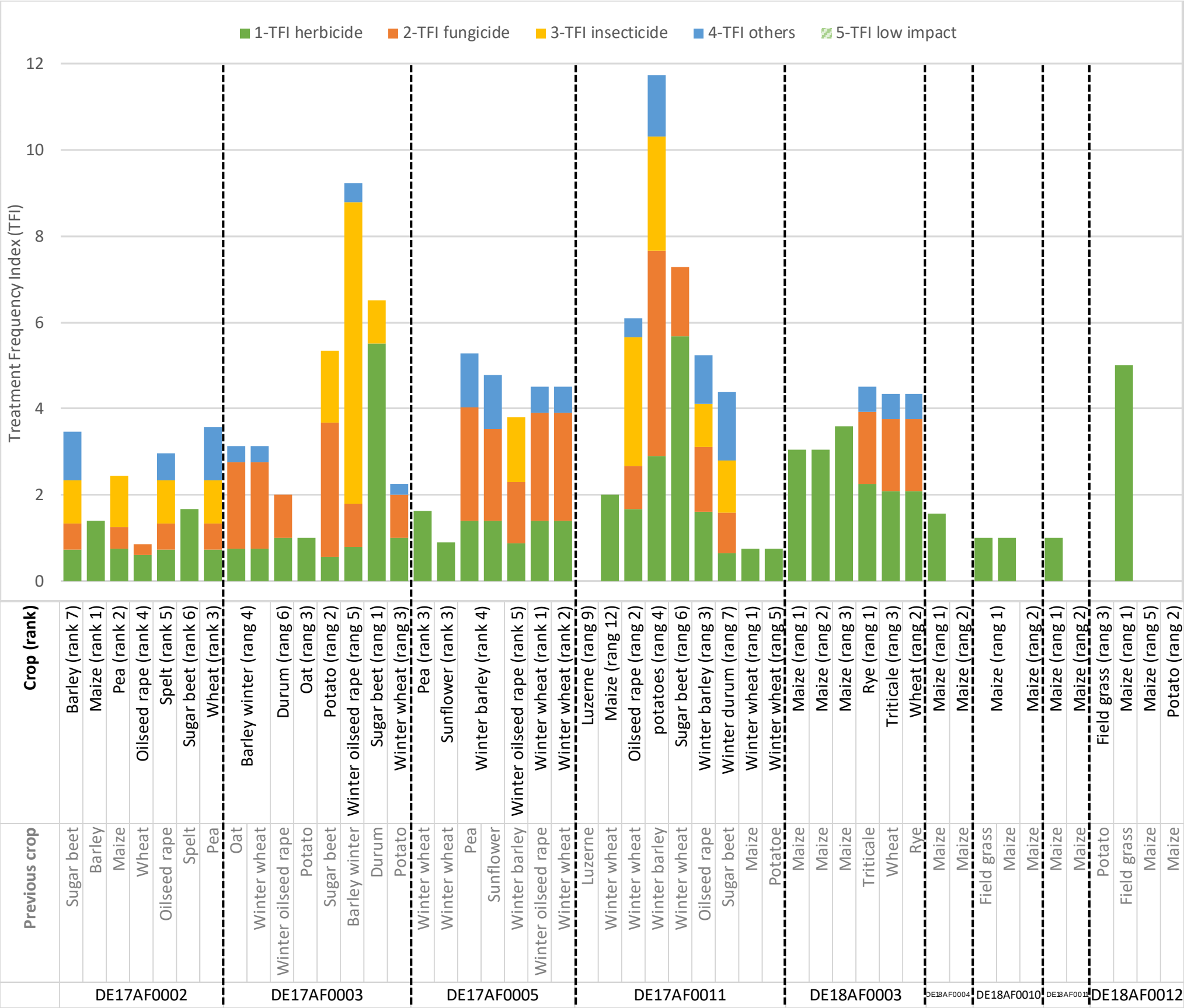


Main crop:

- **Wheat**
- **Barley**

TFI as a function of crop

Germany

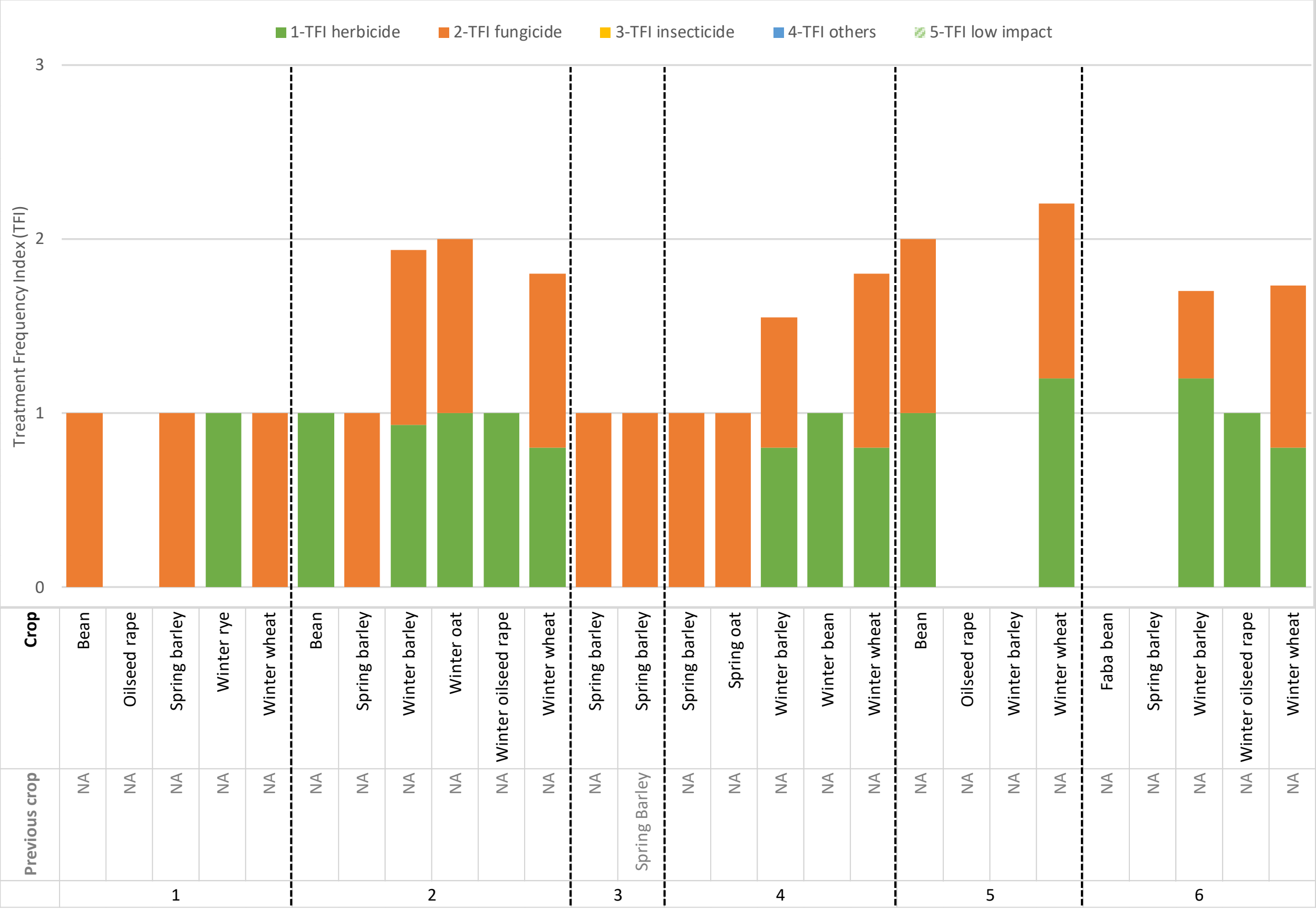


Main crop:

- Maize
- Wheat

TFI as a function of crop

Ireland

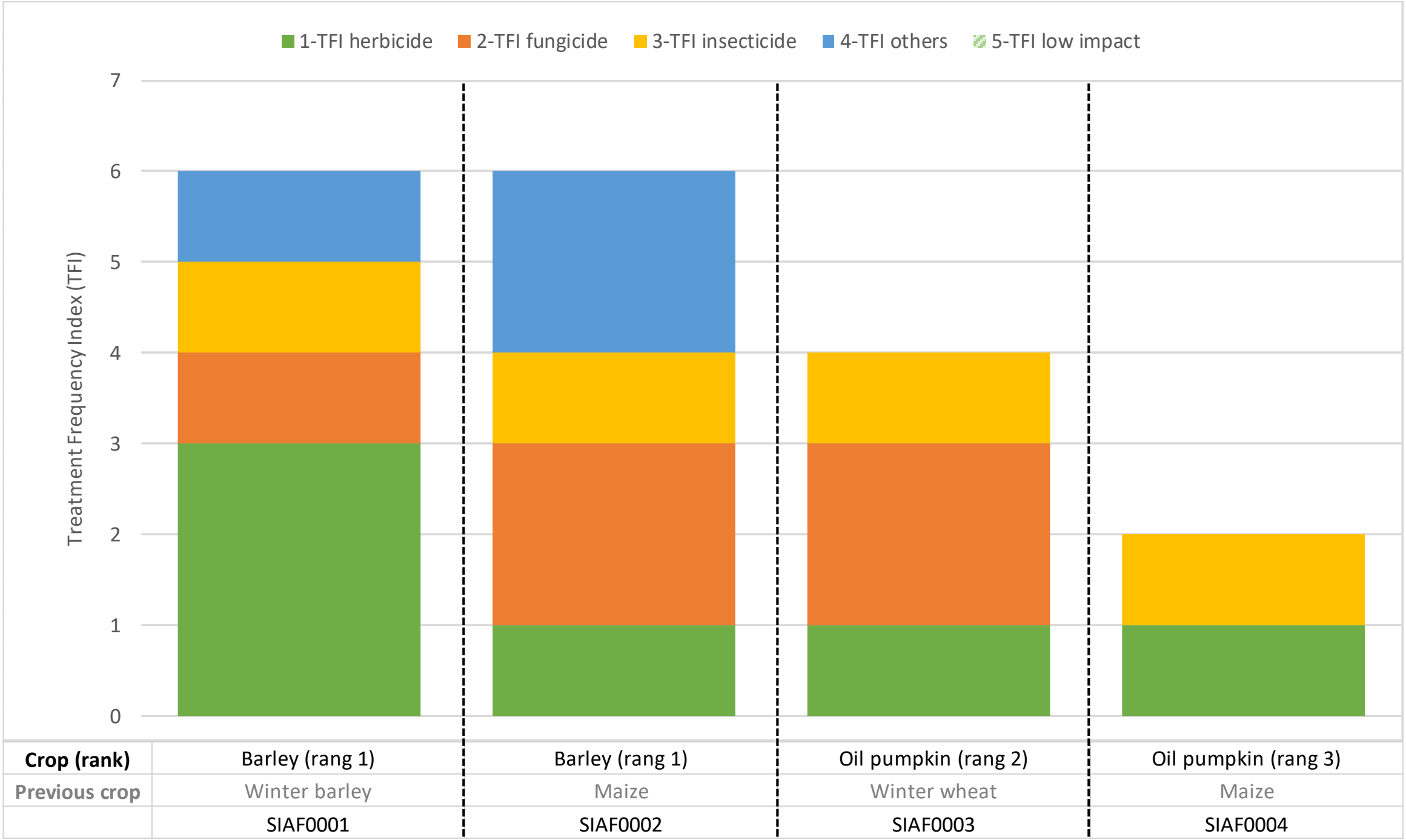


Main crop:

- **Barley**
- **Wheat**
- **Bean**

TFI as a function of crop

Slovenia

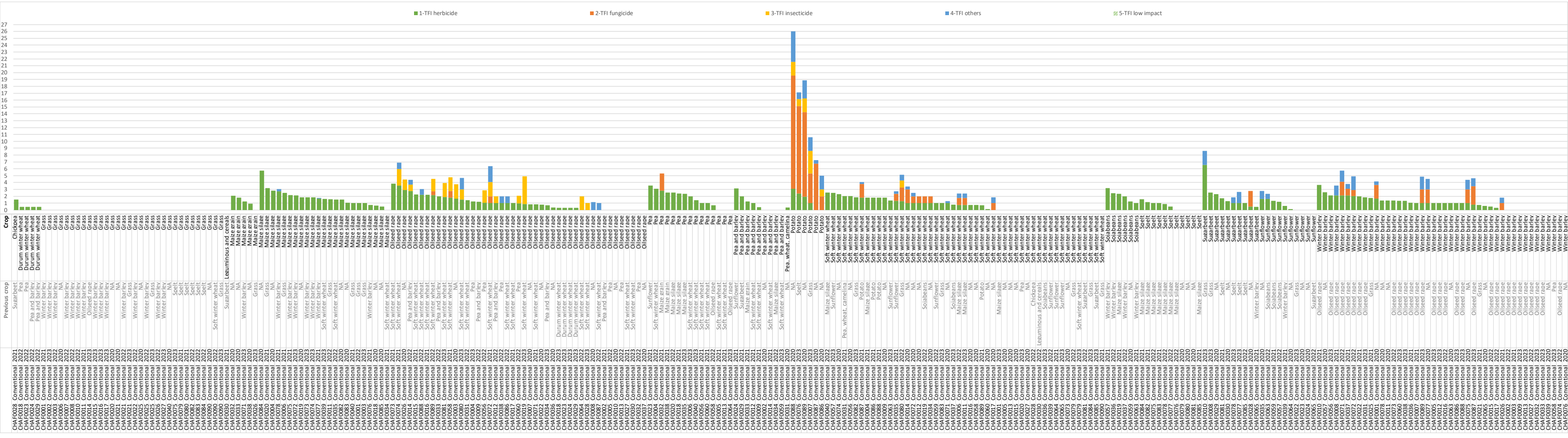


Main crop:

- **Barley**
- **Oil pumpkin**

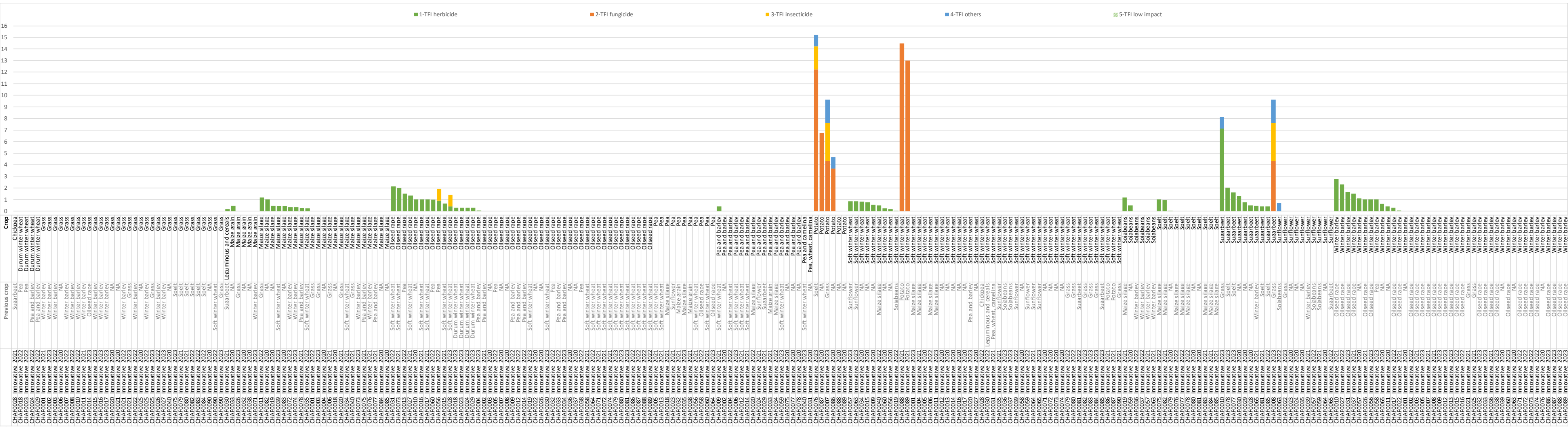
TFI as a function of crop

Switzerland – conventional system



TFI as a function of crop

Switzerland – innovative system

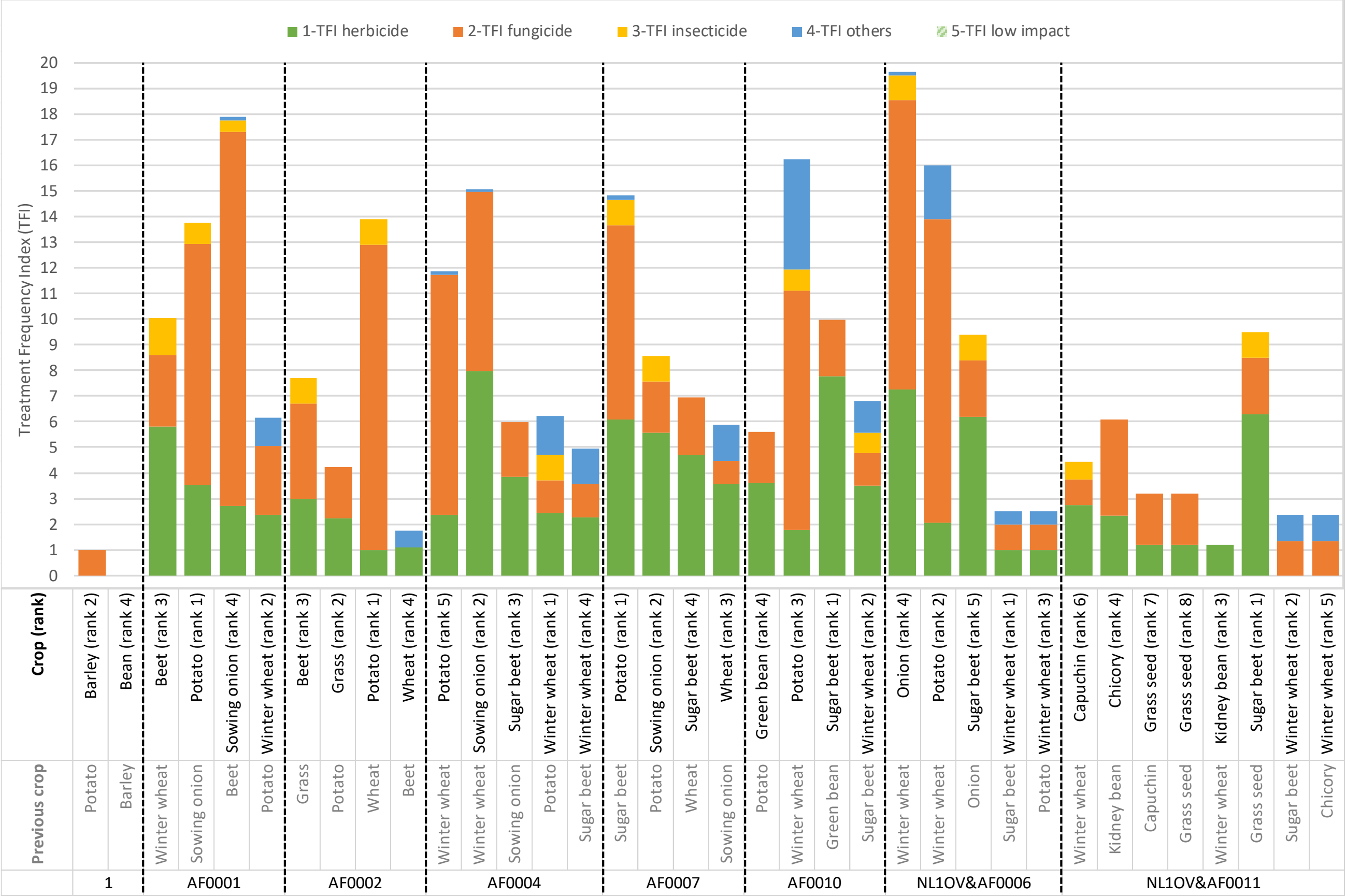


Main crop:

- Rapeseed
- Barley
- Wheat

TFI as a function of crop

The Netherlands

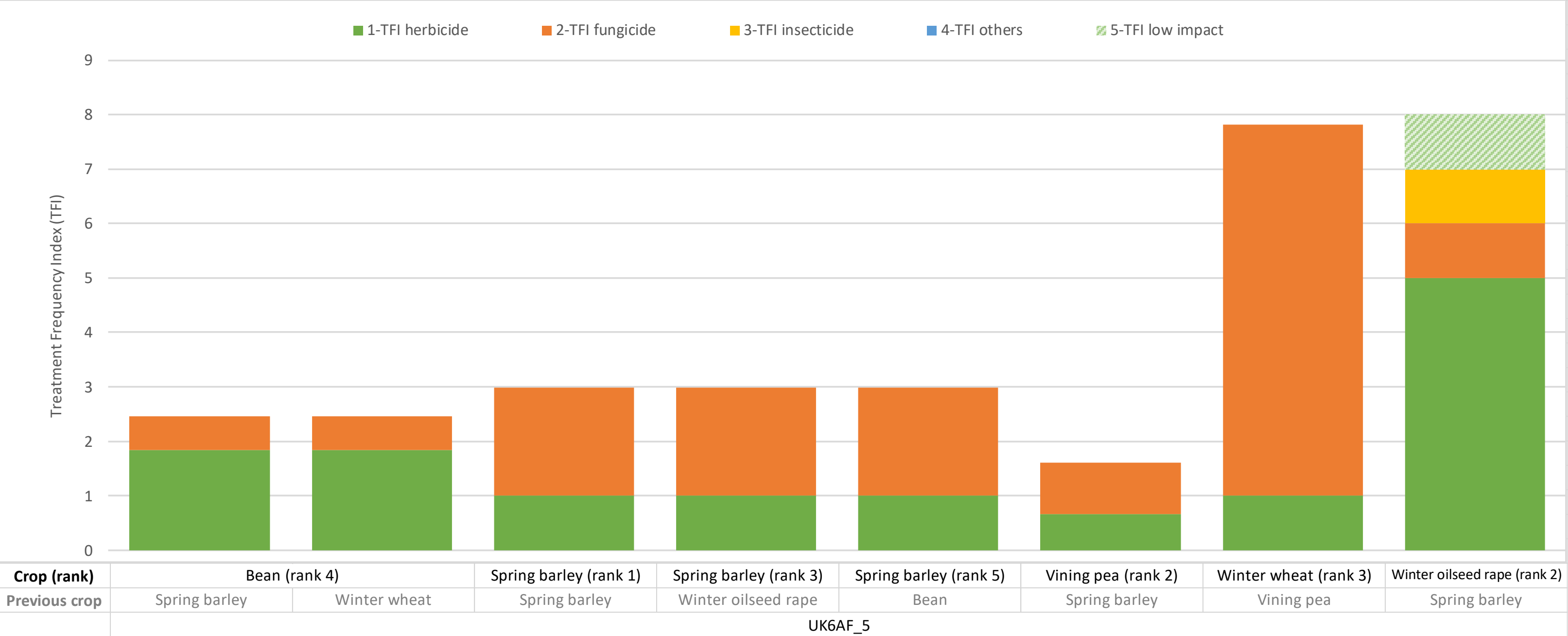


Main crop:

- Wheat
- Sugar beet

TFI as a function of crop

United Kingdom

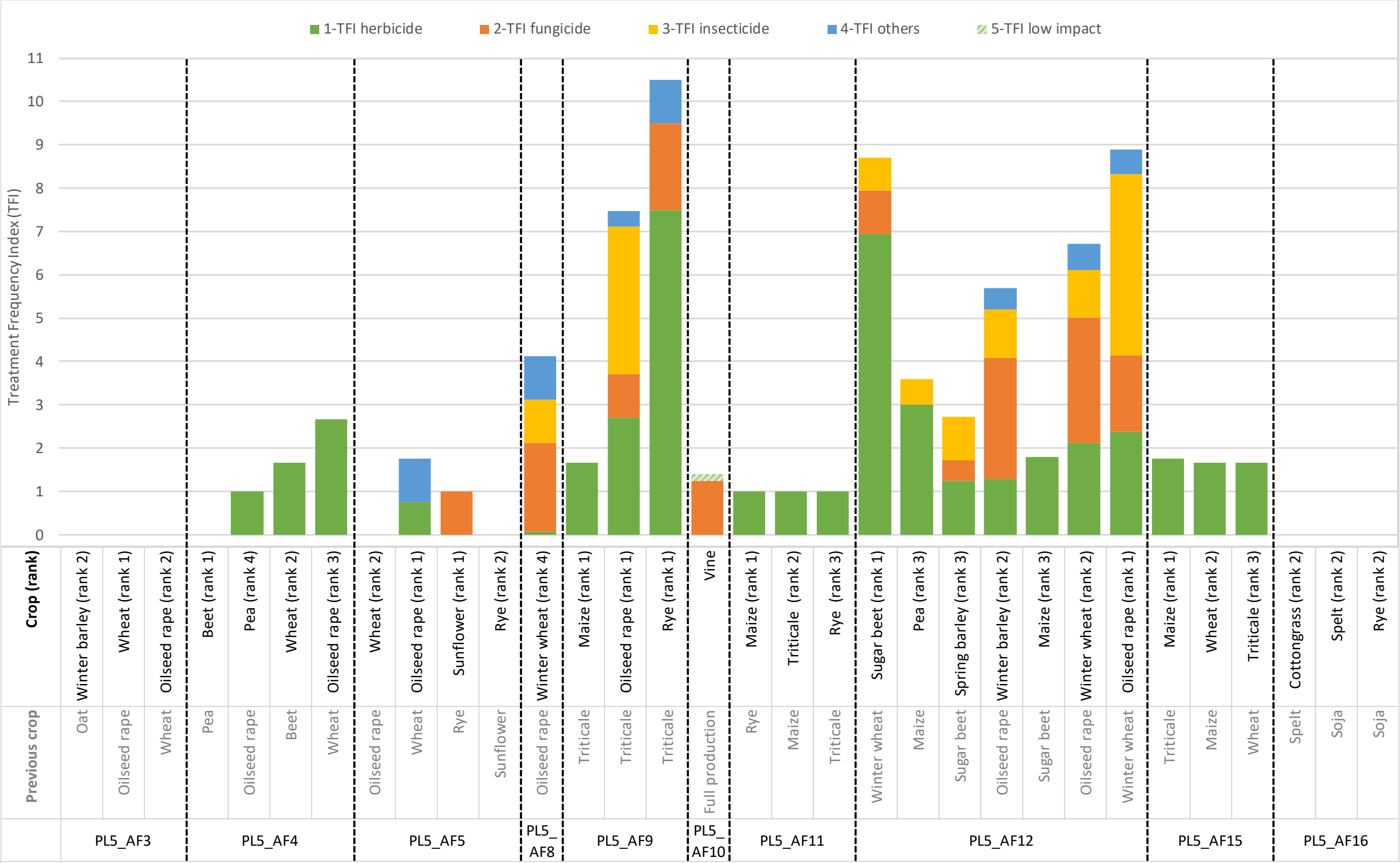


Main crop:

- Barley**

TFI as a function of crop

Poland

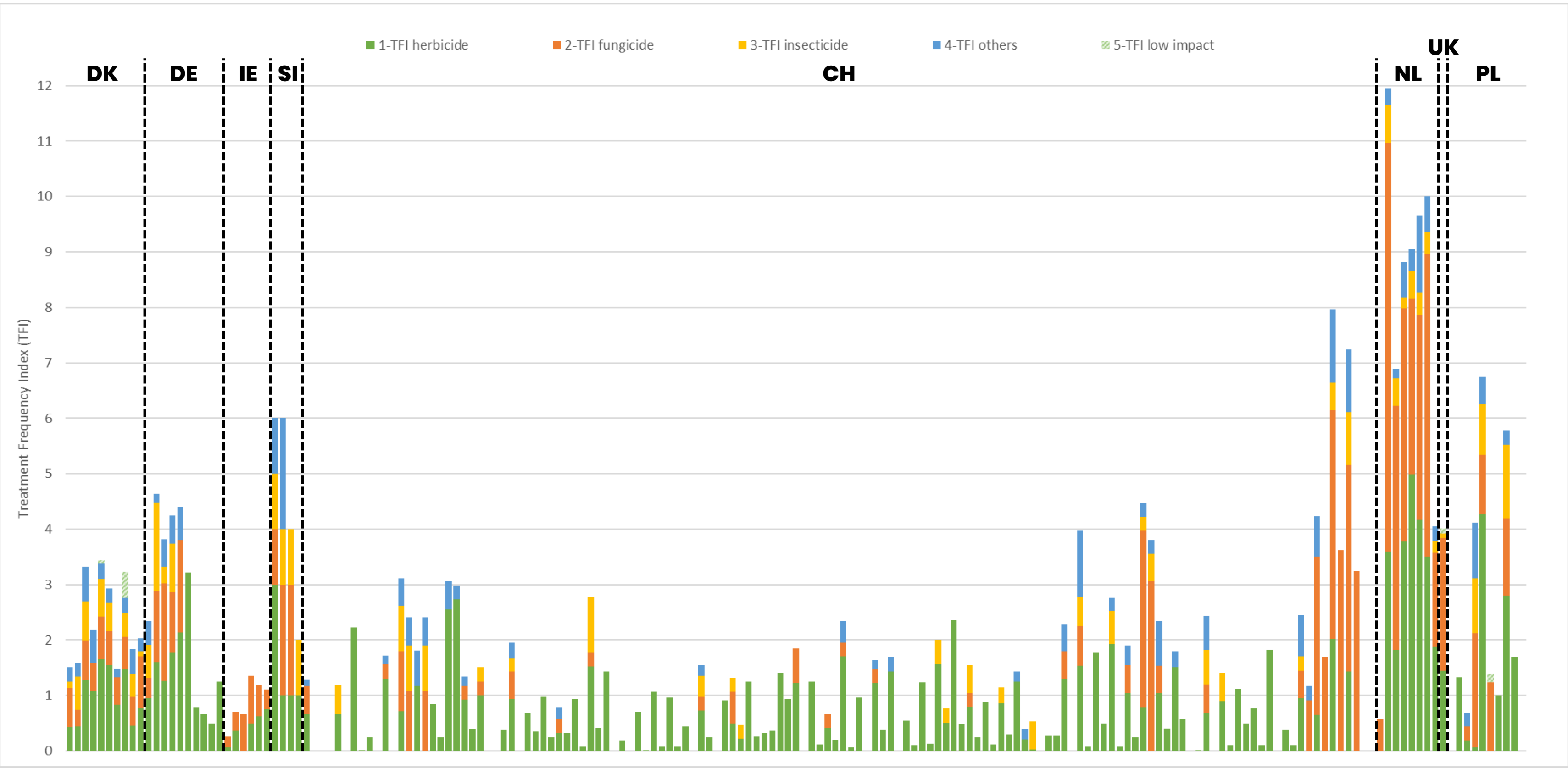


Main crop:

- **Wheat**
- **Oilseed rape**

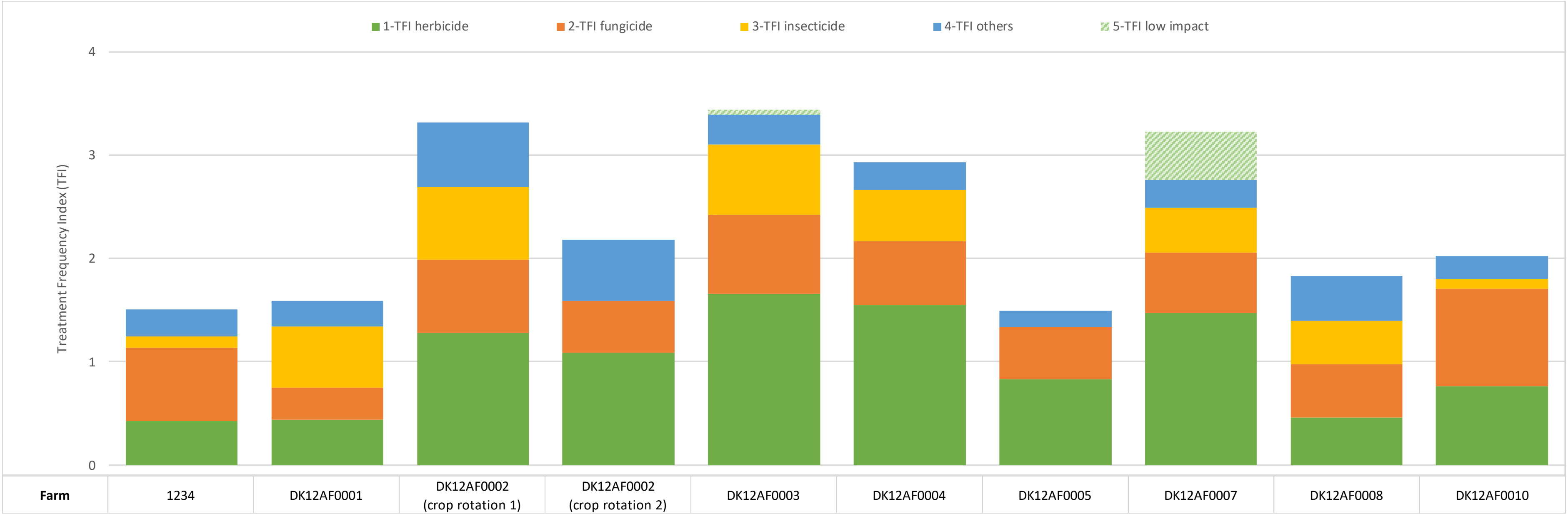
TFI as a function of farm

All country



TFI as a function of farm

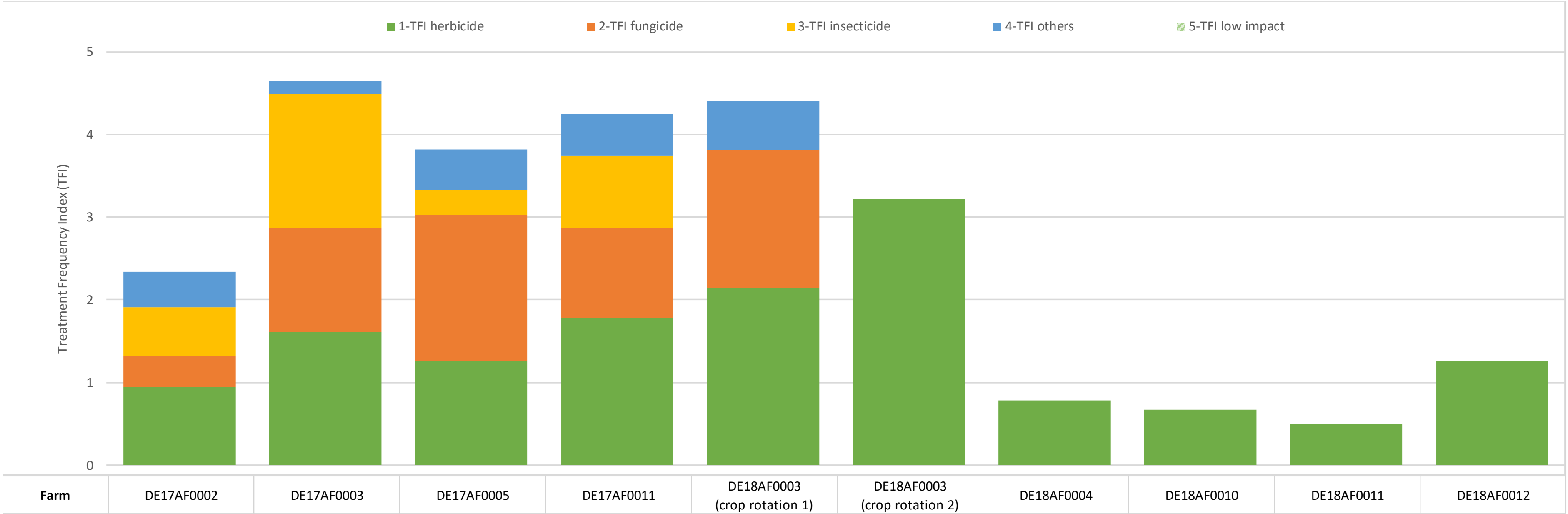
Denmark



Average total TFI: 2.35

TFI as a function of farm

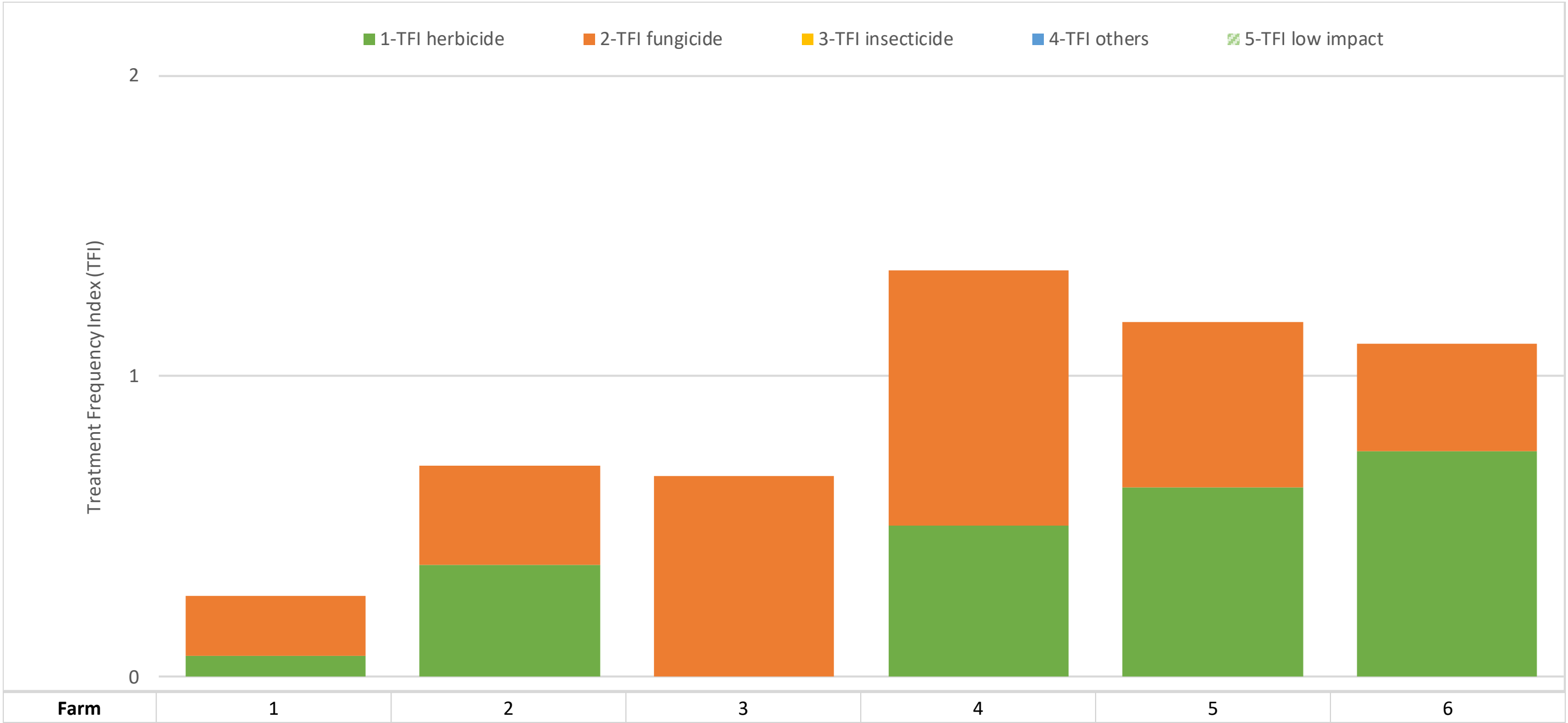
Germany



Average total TFI: 2.59

TFI as a function of farm

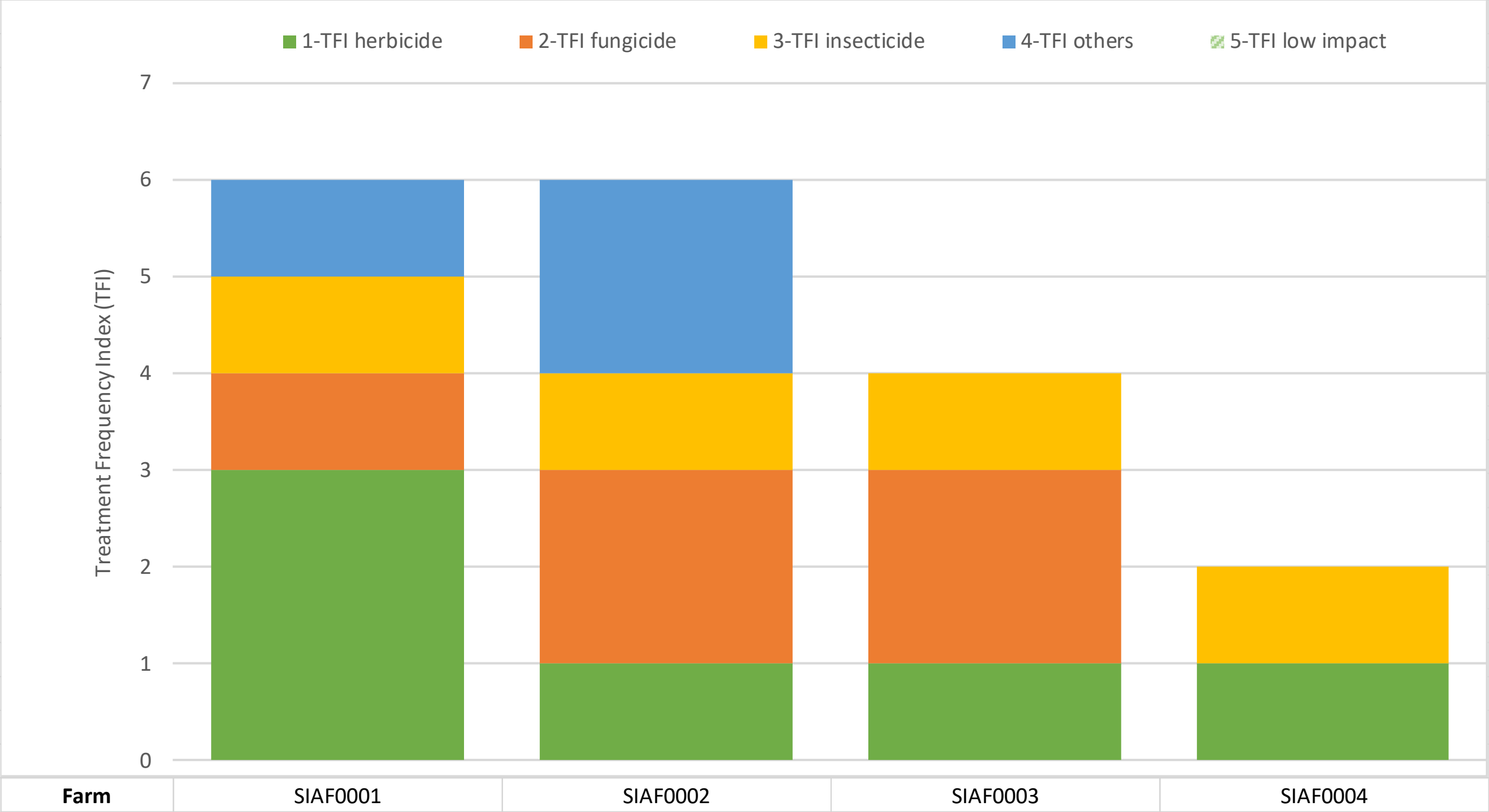
Ireland



Average total TFI: 0.88

TFI as a function of farm

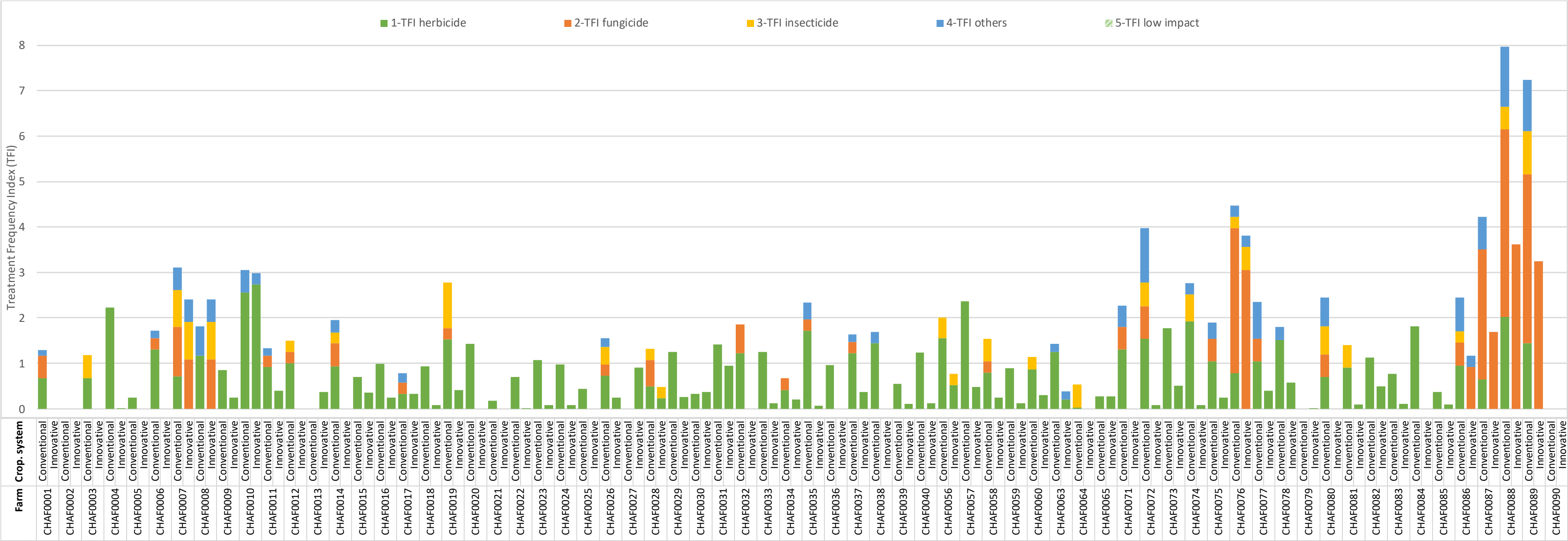
Slovenia



Average total TFI: 4.5

TFI as a function of farm

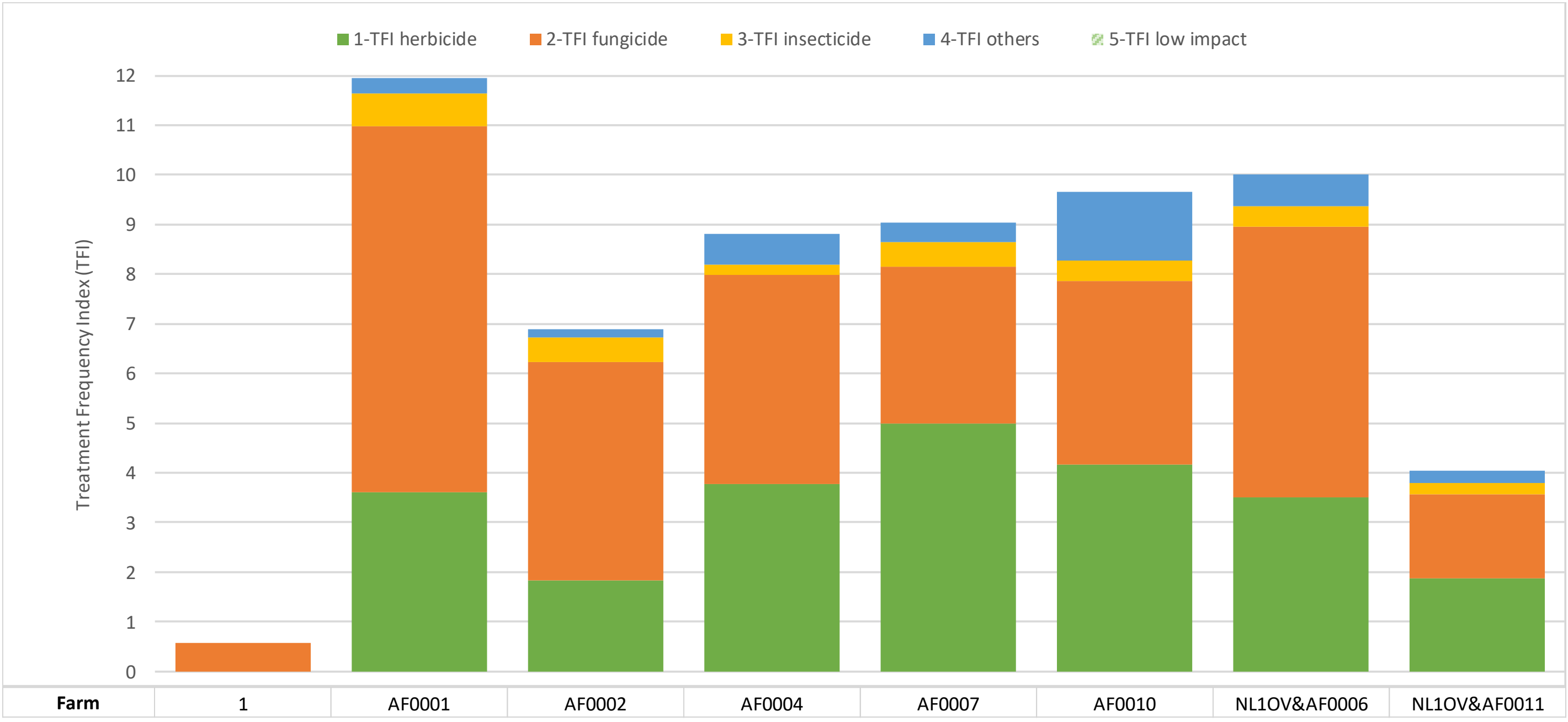
Switzerland



Average total TFI for conventional cropping system: 1.63
Average total TFI for innovative cropping system: 0.49

TFI as a function of farm

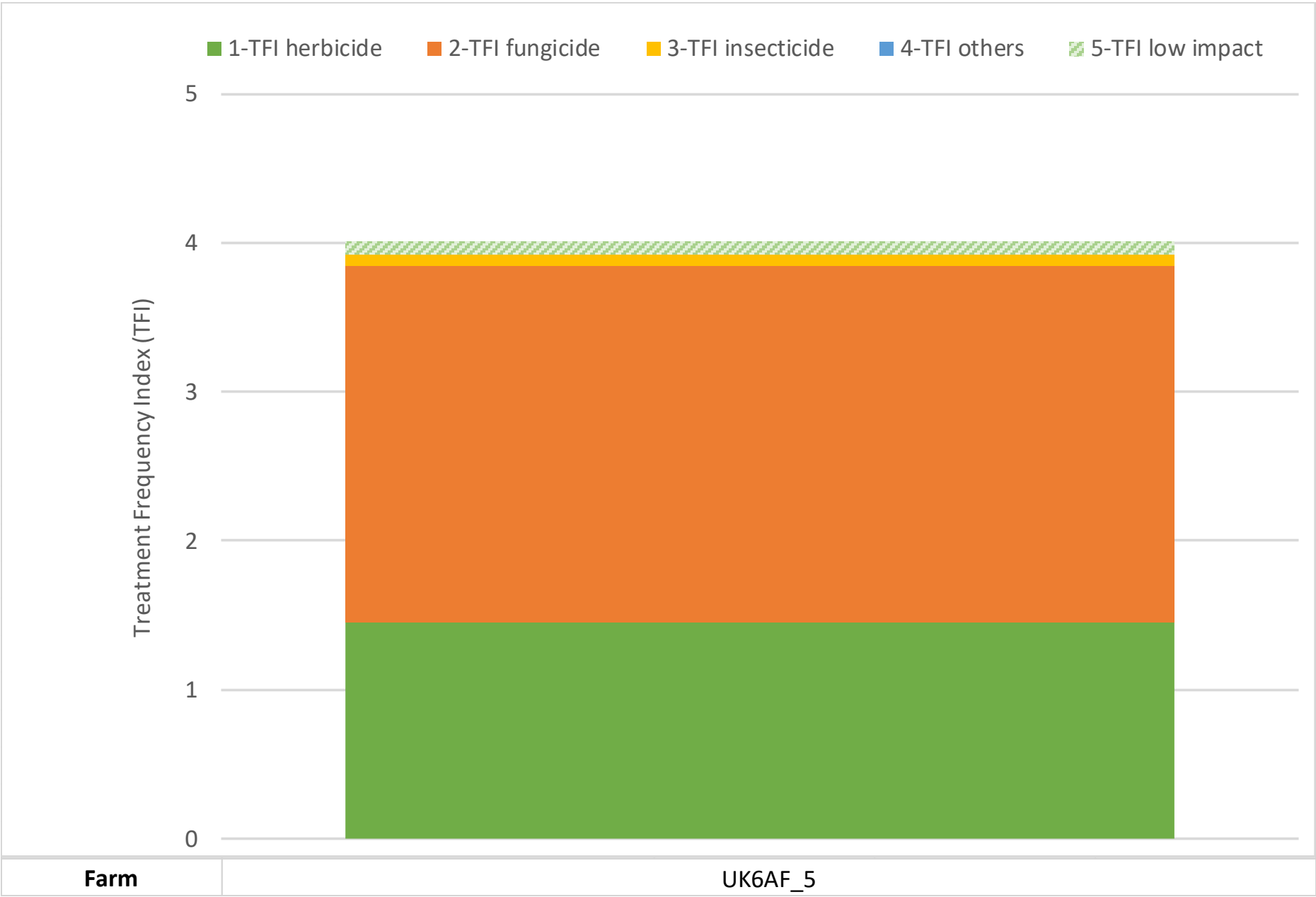
The Netherlands



Average total TFI: 7.62

TFI as a function of farm

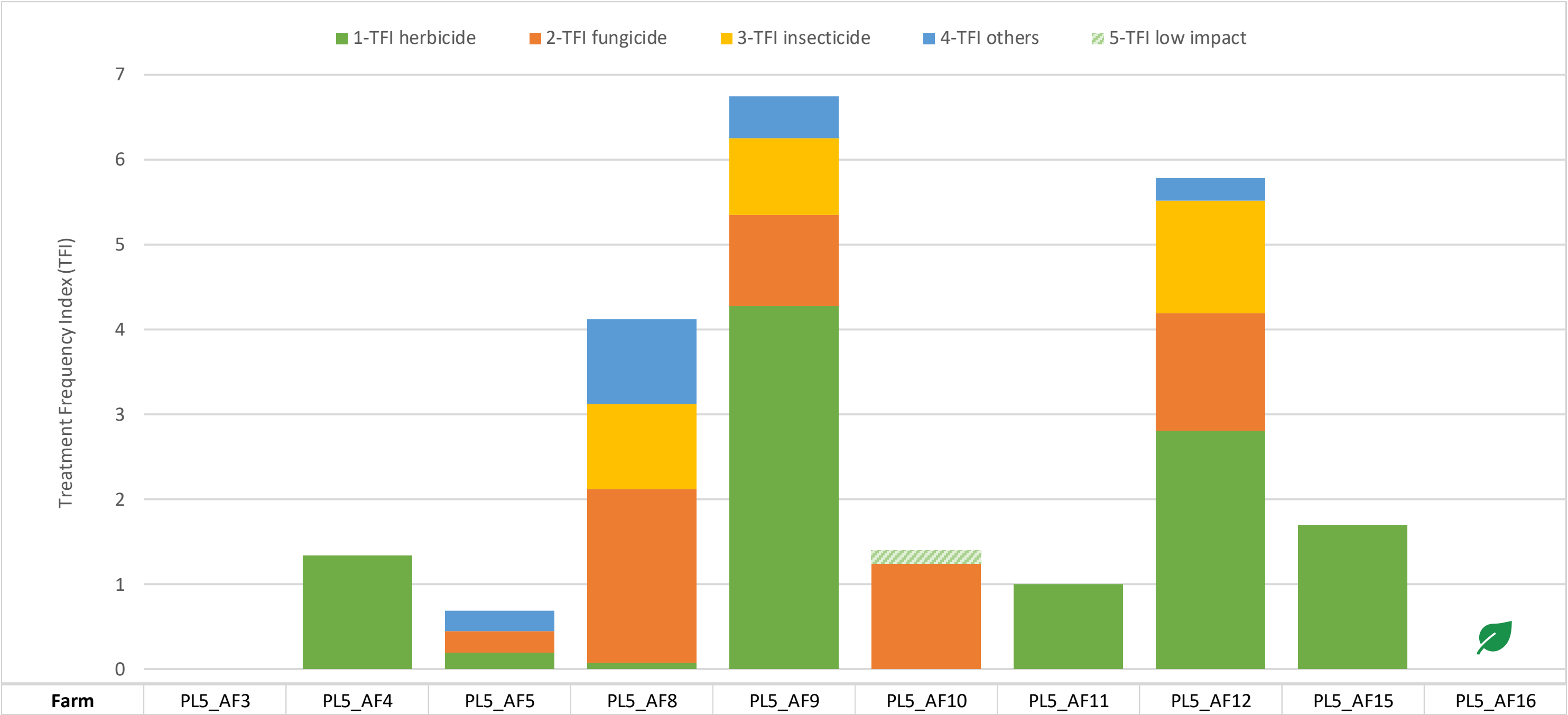
United Kingdom



Total TFI: 4.01

TFI as a function of farm

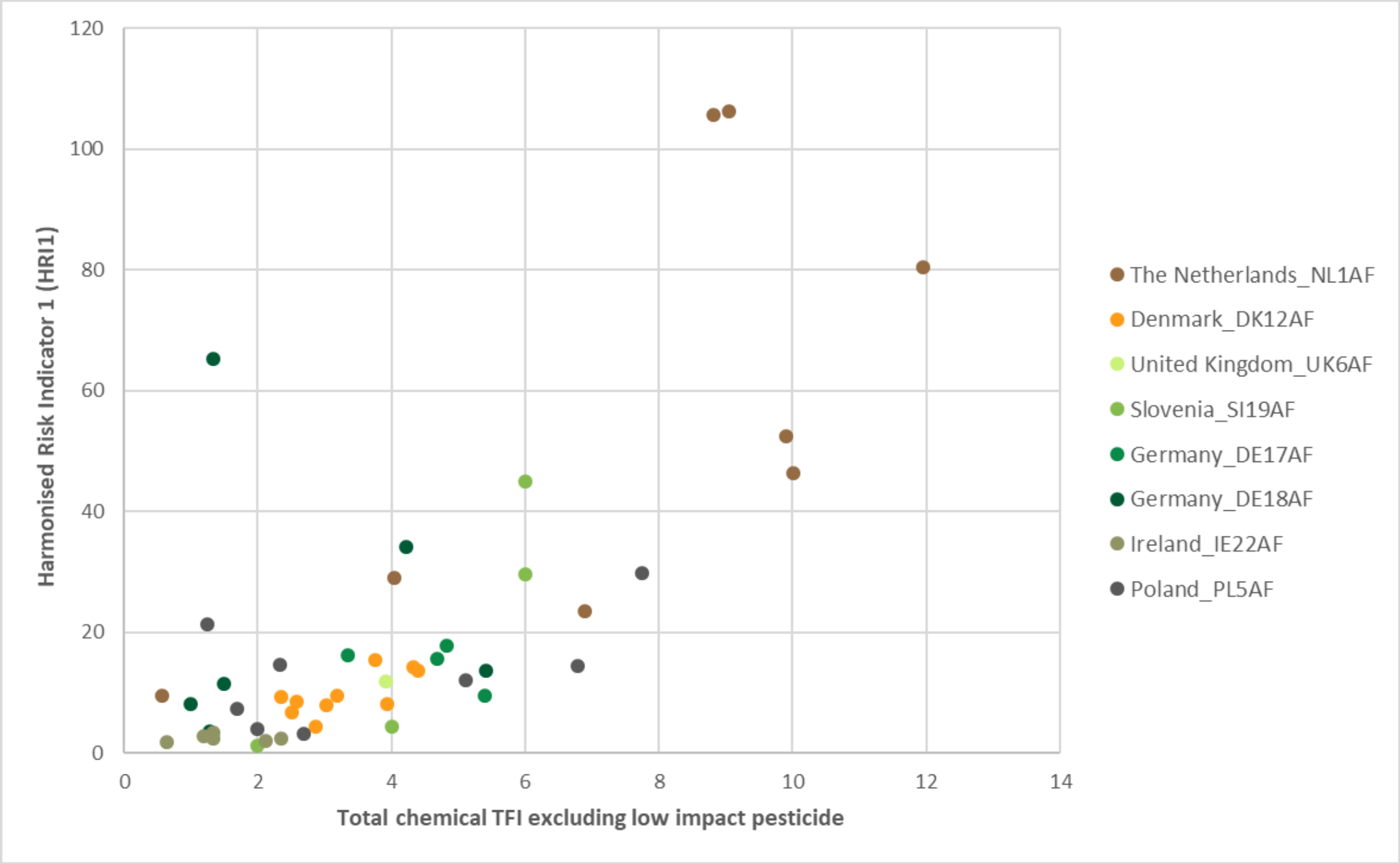
Poland



 : Organic farm

Total TFI for organic farm: 0
Average total TFI for conventional farm: 2.53

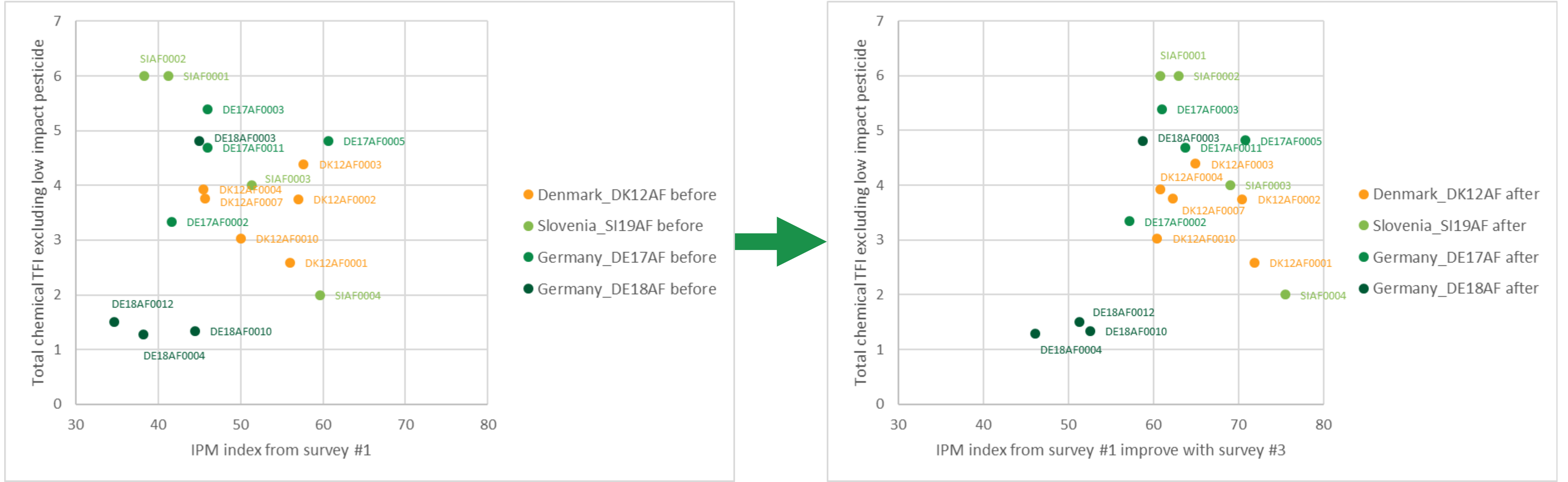
TFI as a function of HRI1



The Harmonised Risk Indicator 1 (HRI1) is calculated by multiplying the quantities of active substances in plant protection products by a weighting factor (4 groups: low-risk substances, approved substances, substances being considered for substitution, non-approved substances).

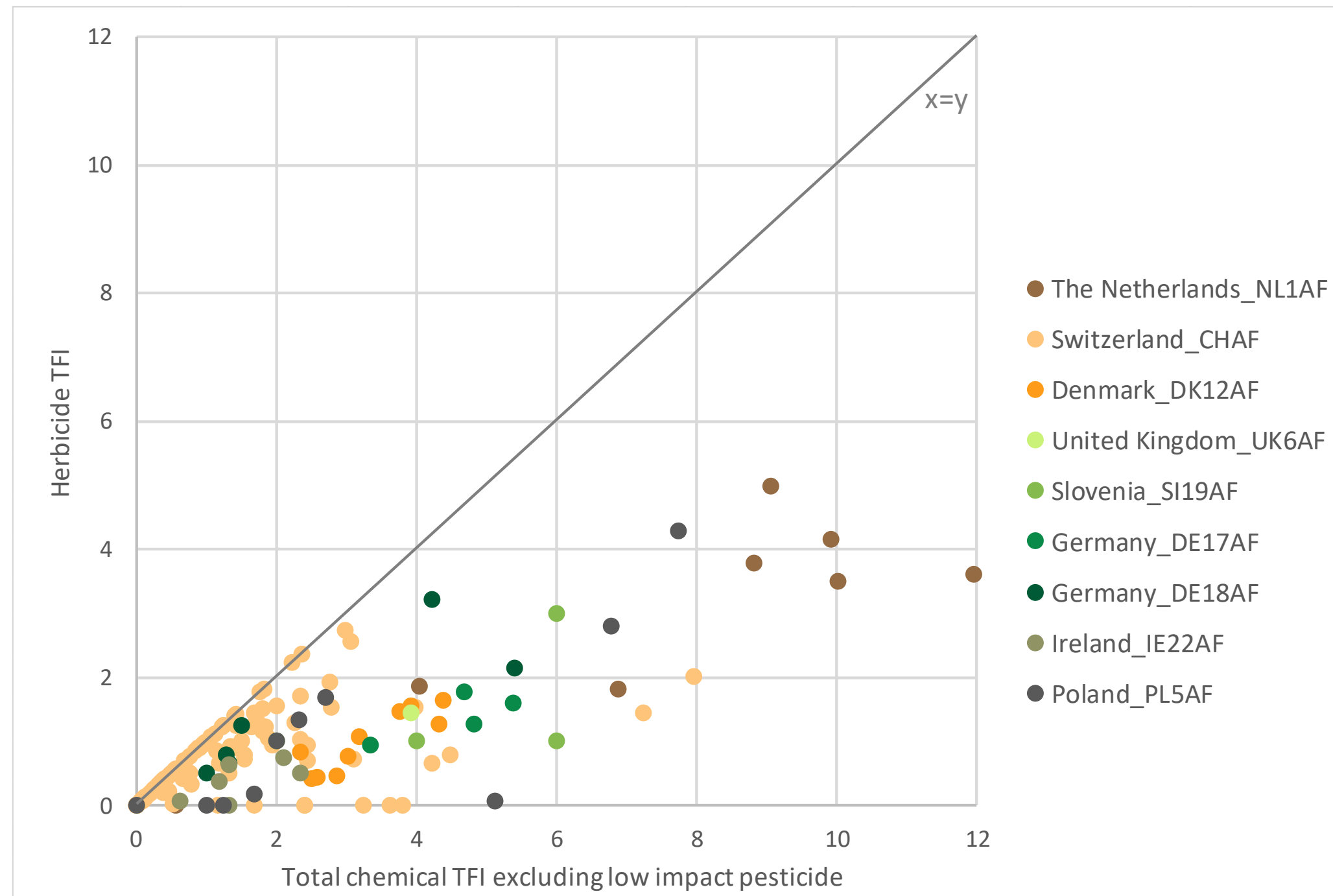
Positive relationship between total chemical TFI and HRI1.

TFI as a function of IPM index



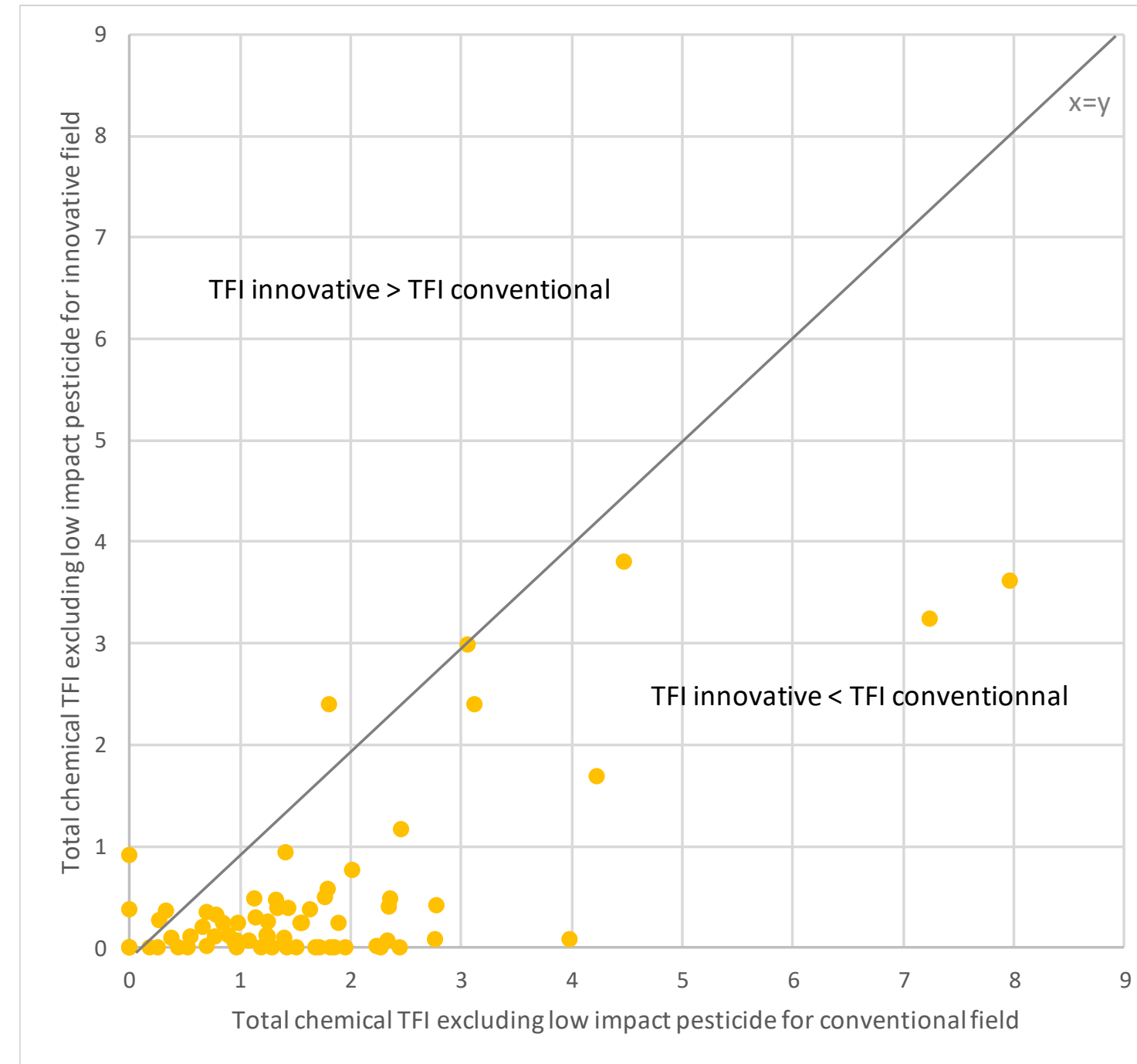
No clear relationship between total chemical TFI and IPM index (calculated in survey #1 and improve with survey #3).

Herbicide TFI as a function of total chemical TFI



Although the total quantity of chemical pesticides is decreasing, it seems more difficult to reduce the proportion of herbicides.

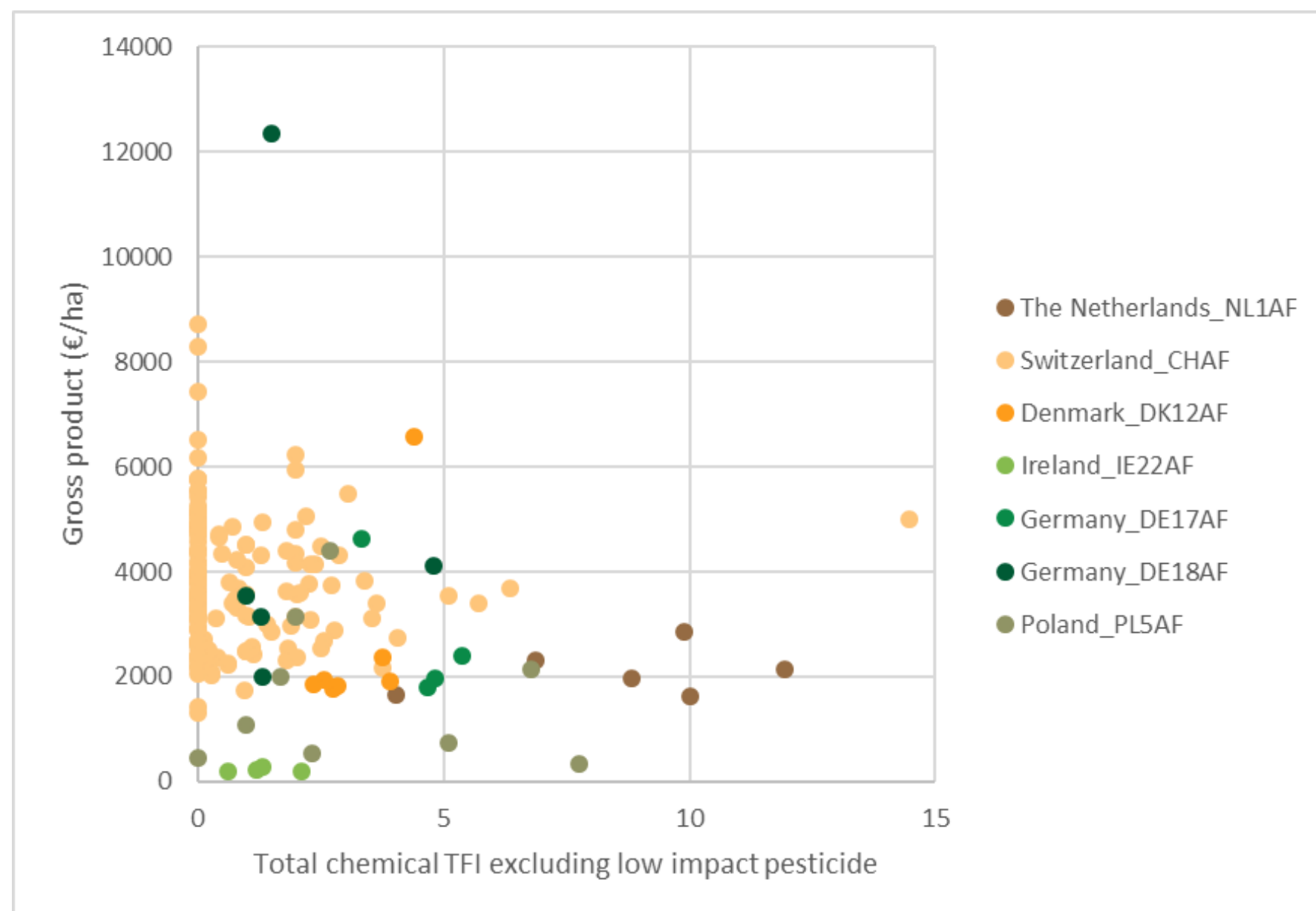
Case of Switzerland: TFI conventional field as a function of TFI innovative field



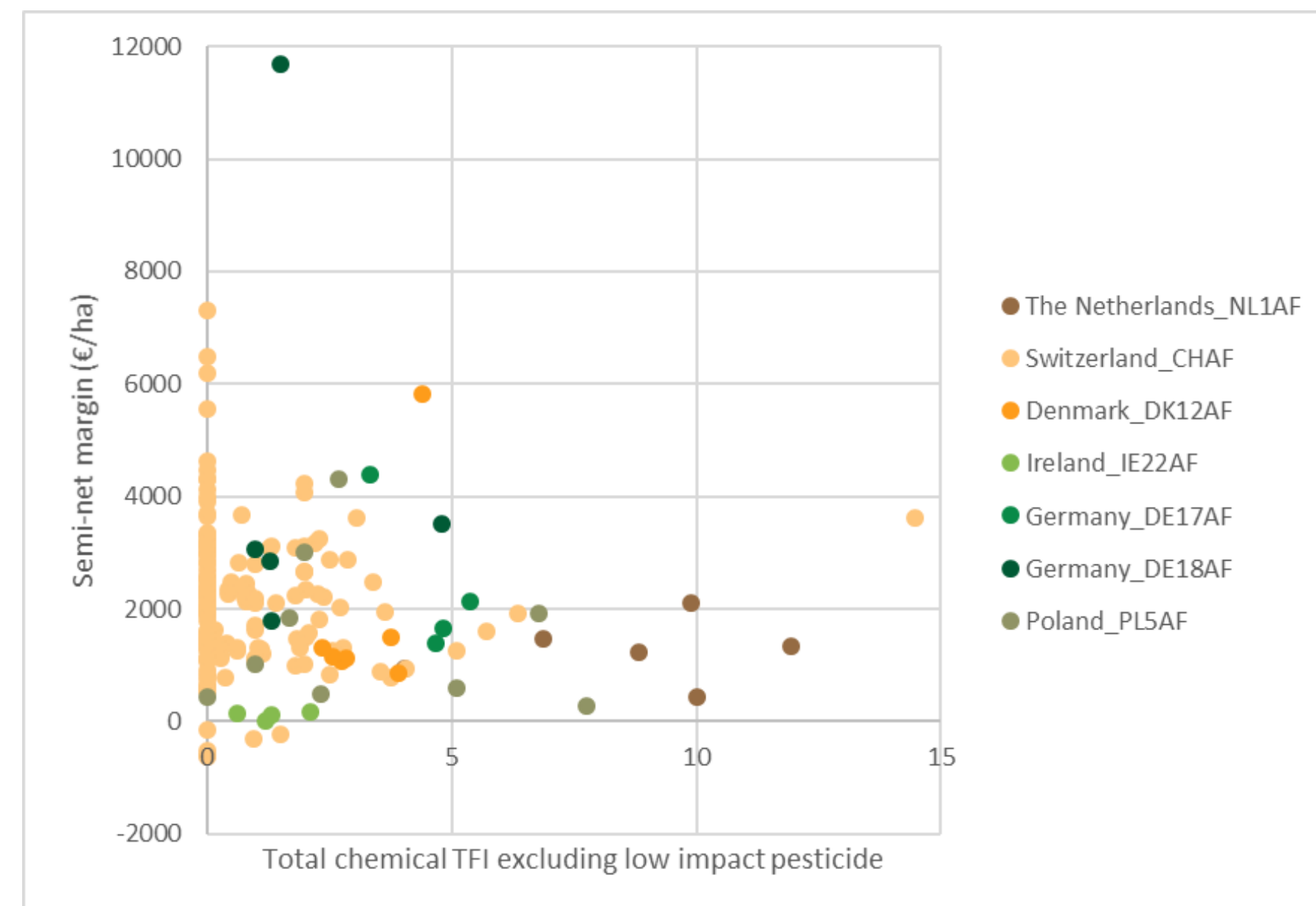
Except in rare cases, the TFI of innovative fields is lower than the TFI of conventional fields.

Economic analyses

Gross product and semi-net margin



‘Gross product’ corresponds to the income generated by the sale of products harvested during an intervention.

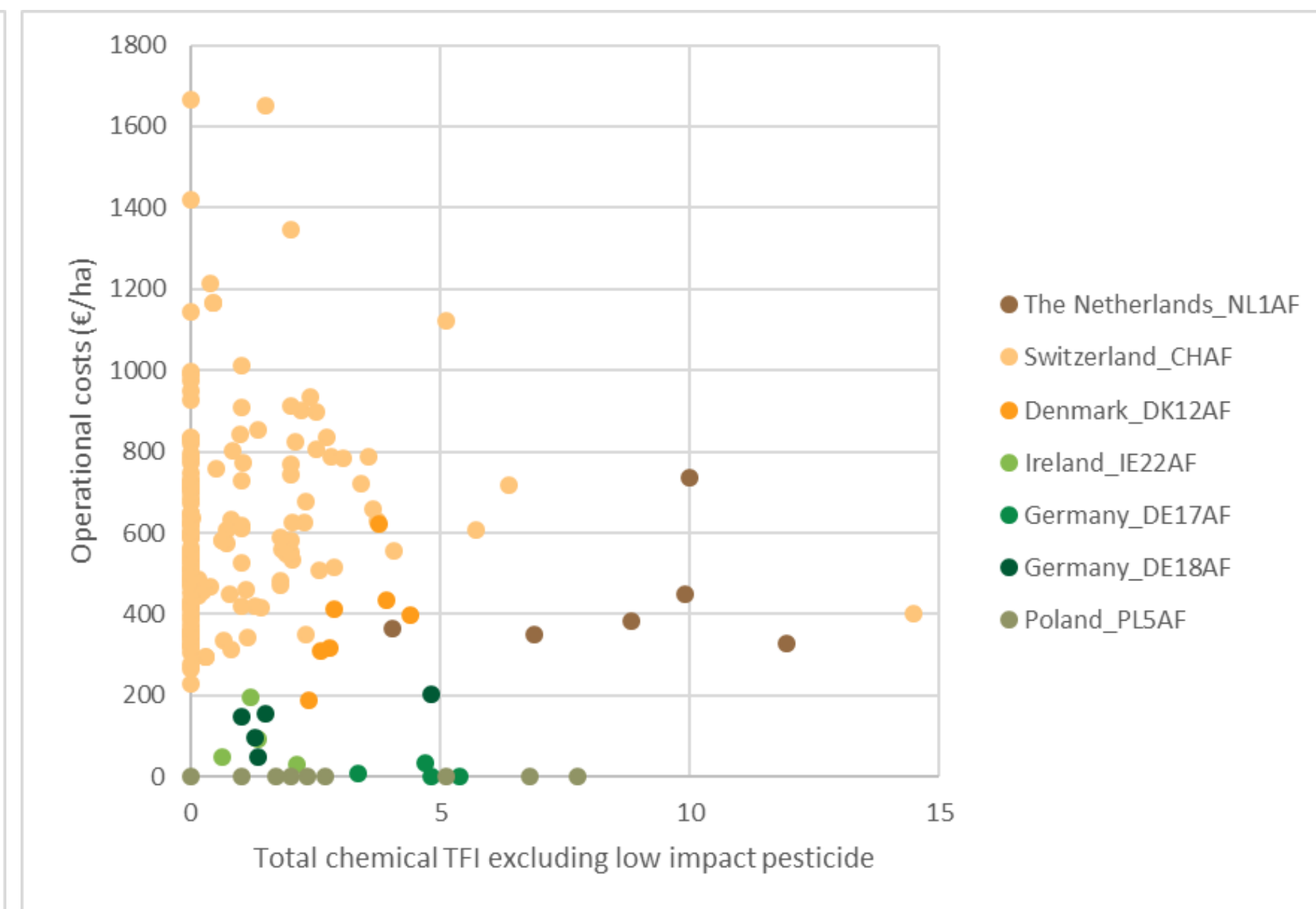
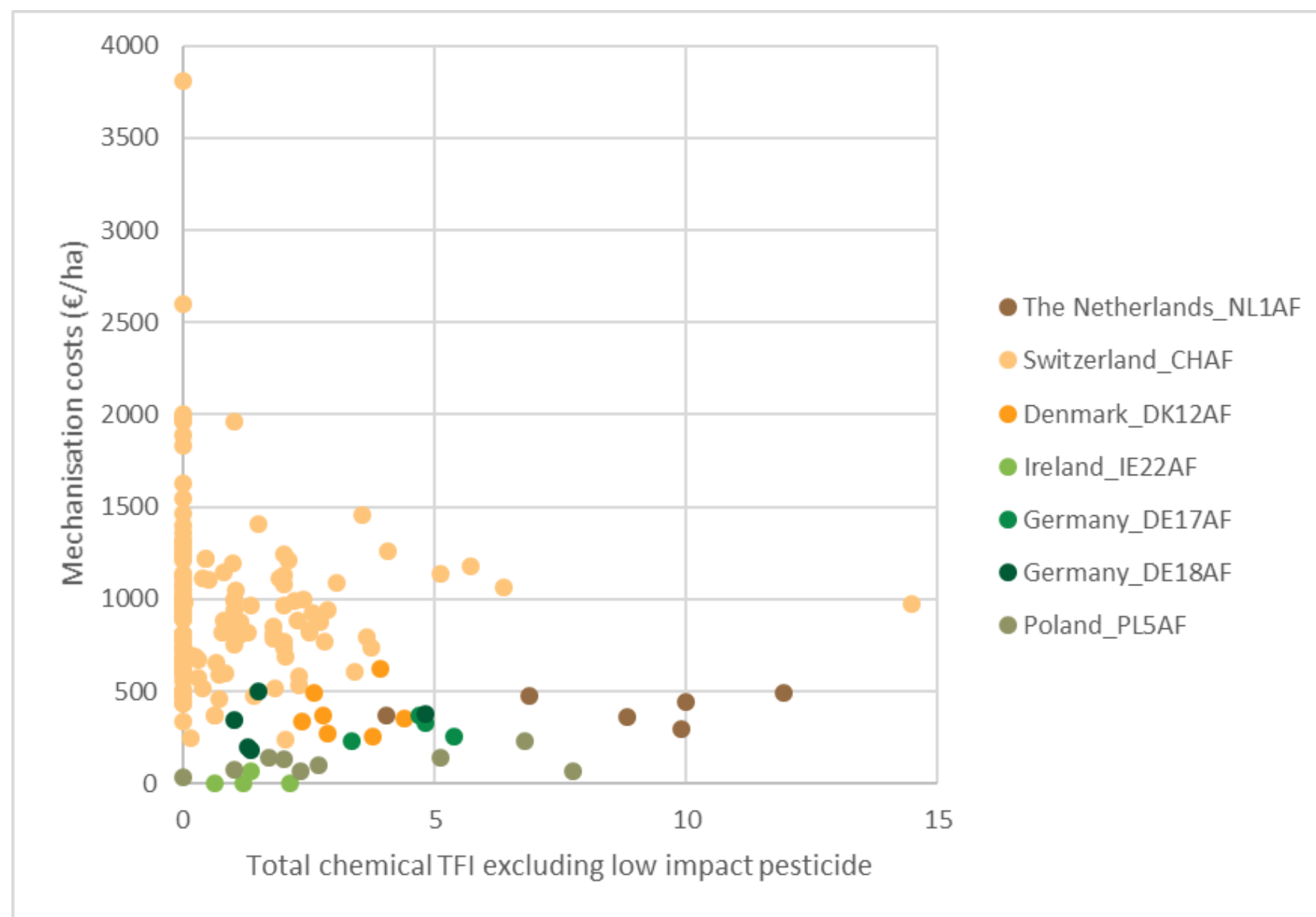


‘Semi-net margin’ corresponds to the difference between gross margin and mechanisation and operational costs but without the difference with labour costs.

Within a group of farms (i.e. within a given region), farms with lower TFI values do not tend to have lower productivity (gross product) and profitability (semi-net margin).

Economic analyses

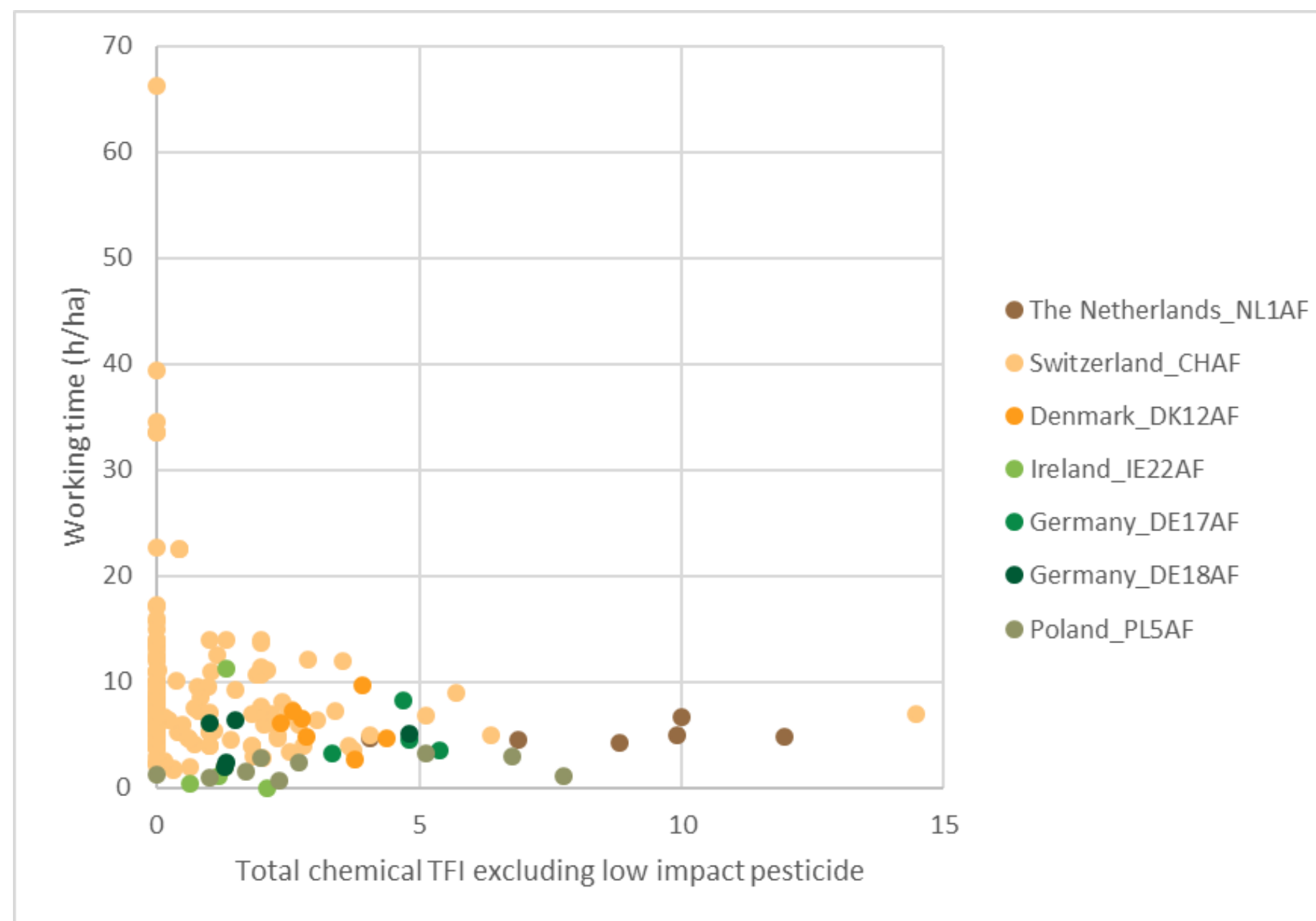
Mechanisation and operational costs



Within a group of farms (i.e. within a given region), farms with lower TFI values do not tend to have clearly higher equipment costs (mechanisation costs) but tend to have lower input costs (operational costs).

Economic analyses

Working time



Within a group of farms (i.e. within a given region), farms with lower TFI values do not tend to have clearly higher workloads (working time).



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