

# Status and trends of wild pollinators in Belgium and north of France

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## SAPOLL

Sauvons nos pollinisateurs  
Samenwerken voor pollinators

Pollinators play a very important role in terrestrial ecosystems [1]. Indeed, by contributing to the pollination of most of our wild and cultivated flowering plants, they provide an essential ecosystem service [2]. The main goal of the SAPOLL project is to elaborate an action plan for the conservation of wild pollinators in Belgium and north of France. In order to do so, prior assessments are needed. Here we present our first review of wild pollinators situation at global and regional level. This report, made by regional experts, addresses the decline of wild pollinators, the associated factors and also the consequences of this decline.

### MAIN POLLINATORS

#### WILD BEES

Hymenoptera, Apoidea

- ~ 400 species in the region (including bumblebees)
- Adults and larvae rely on pollen and nectar



##### Ecology :

- Larvae develop on a mixture of pollen and nectar
- Long tongued VS short tongued bees
- Some bees specialised on floral resource for pollen
- Social / Solitary / Cleptoparasite

#### HOVERFLIES

Diptera, Syrphidae

- ~ 350 species in the region
- Only adults are feeding on pollen and nectar



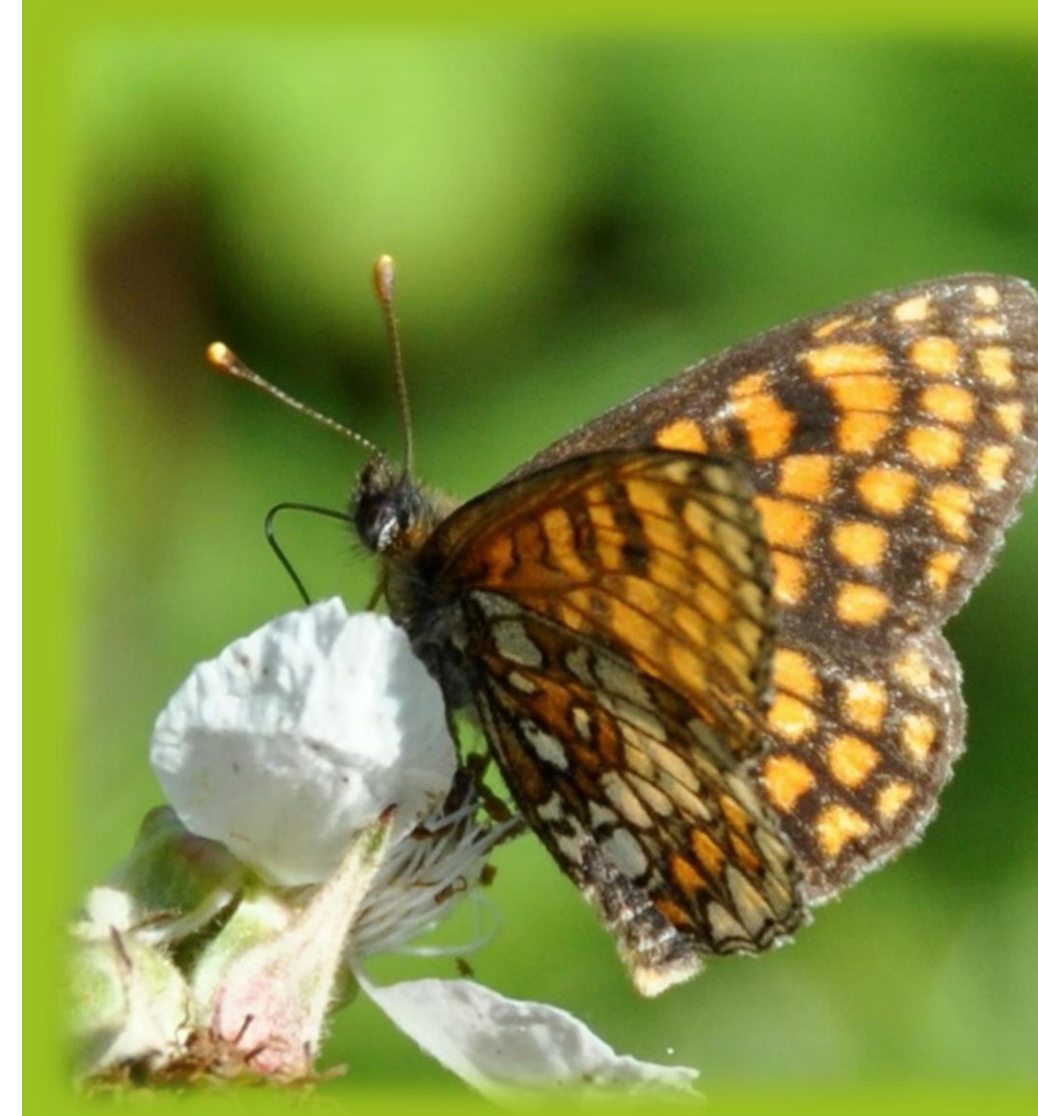
##### Ecology :

- Larvae develop on plants, fungi, sap, decomposing wood, organic matter or are carnivorous...
- Adults are opportunist foragers
- Non-specialised VS specialised to some habitats

#### BUTTERFLIES

Lepidoptera

- ~ 110 species in the region
- Only adults are feeding on nectar



##### Ecology :

- Larvae develop on specific plants (host plant)
- Adults feed on plants with long corolla
- Non-specialised VS specialised to some habitats

### THEIR DECLINE

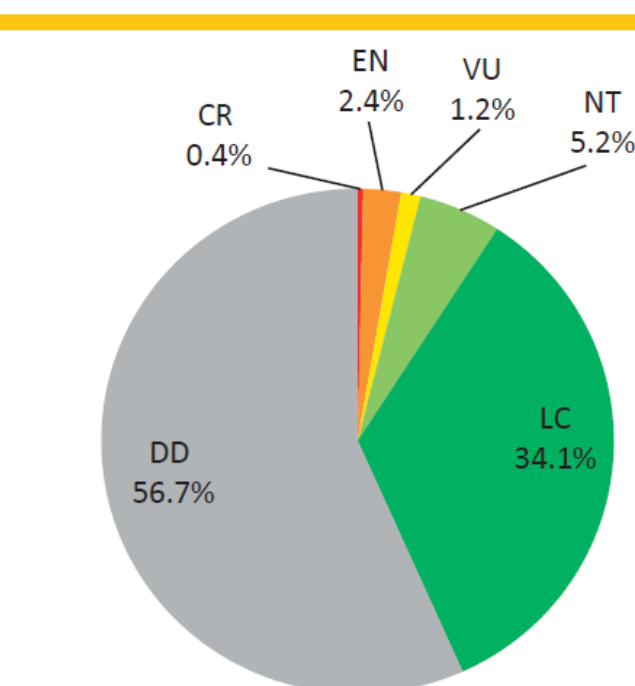


Fig. 1: IUCN status of European Bees [3]. DD=Data deficient, CR= Critically endangered, EN=Endangered, VU=Vulnerable, NT= Near Threatened, LC= Least concern.



Fig. 2 : Preliminary Atlas of the bumblebees (genus *Bombus*) of the Nord and the Pas-de-Calais [6].

Strong decline in abundance and diversity worldwide. Global lack of data in Europe.

##### IN BELGIUM

- Strong and constant decline since the 50's for wild bees and bumblebees [4];
- 50% of the species are rare, in decline or extinct [5];
- Red List in progress (BELBEES Project).

##### IN THE NORTH OF FRANCE

- Lack of data;
- Publication of a preliminary Atlas of the bumblebees of the Nord and the Pas-de-Calais.

The specialised and rare species are the more affected.

##### Belgian hoverflies

Decline worldwide unclear due to a lack of studies and a difference in response among species.

##### IN BELGIUM

- No decline detected since the 70's [4];
- 197 species over 351 considered in decline [7].

##### Hoverflies of France

- Lack of data;
- 198 species over the 561, at the country scale, are considered in decline [7].

The specialised and rare species are considered at risk but there is no global decline because of the expansion of some species.

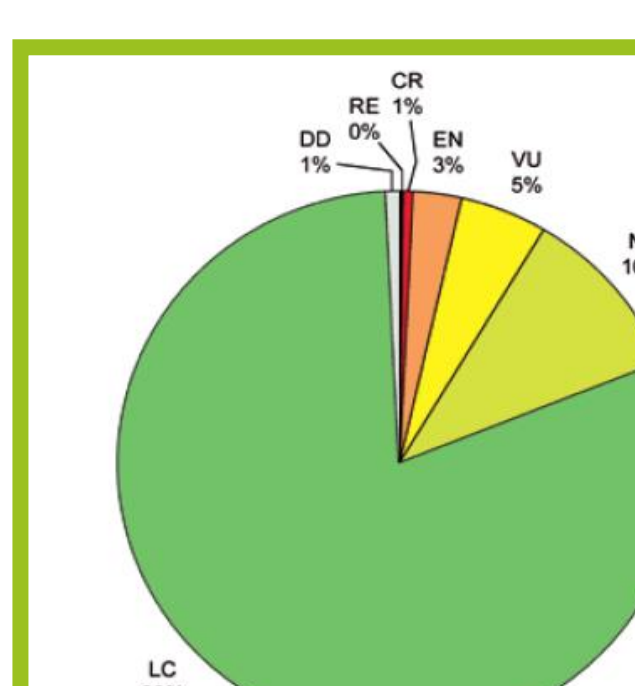


Fig.4: IUCN status of European Butterflies [8]. DD=Data deficient, CR= Critically endangered, EN=Endangered, VU=Vulnerable, NT= Near Threatened, LC= Least concern.

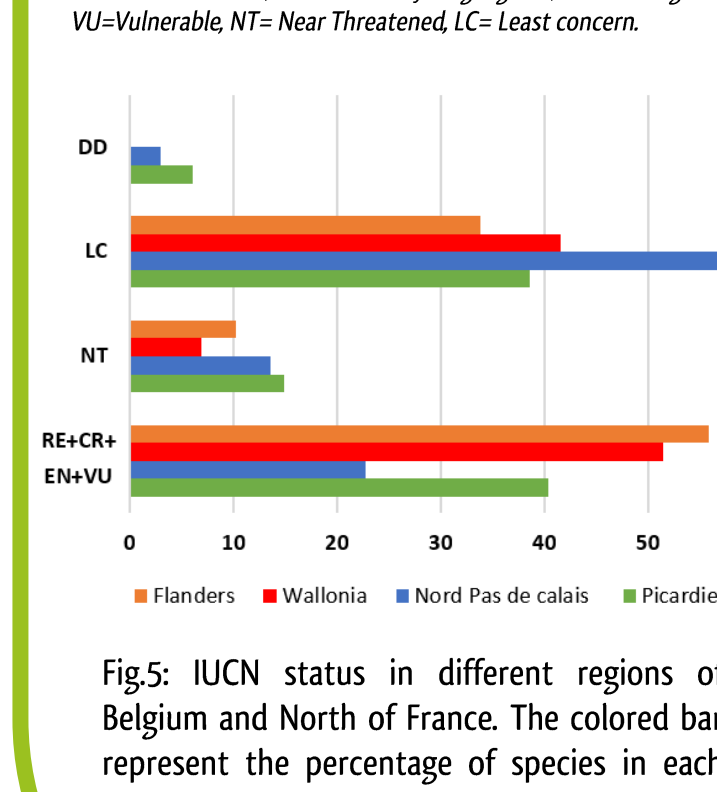


Fig.5: IUCN status in different regions of Belgium and North of France. The colored bar represent the percentage of species in each category. DD=Data deficient, CR= Critically endangered, EN=Endangered, VU=Vulnerable, NT= Near Threatened, LC= Least concern.

Decline in abundance and diversity well documented worldwide thanks to long term monitoring schemes.

##### IN BELGIUM

- Strong decline since the 50's [4];
- More than 50% of the species endangered [9],[10].

##### IN THE NORTH OF FRANCE

- Strong decline;
- 40% of the species of Picardie endangered [11];
- 23% of the species of Nord-Pas-de-Calais endangered [12].

The species with high ecological needs (specialised) are the more affected.

### CAUSES AND CONSEQUENCES

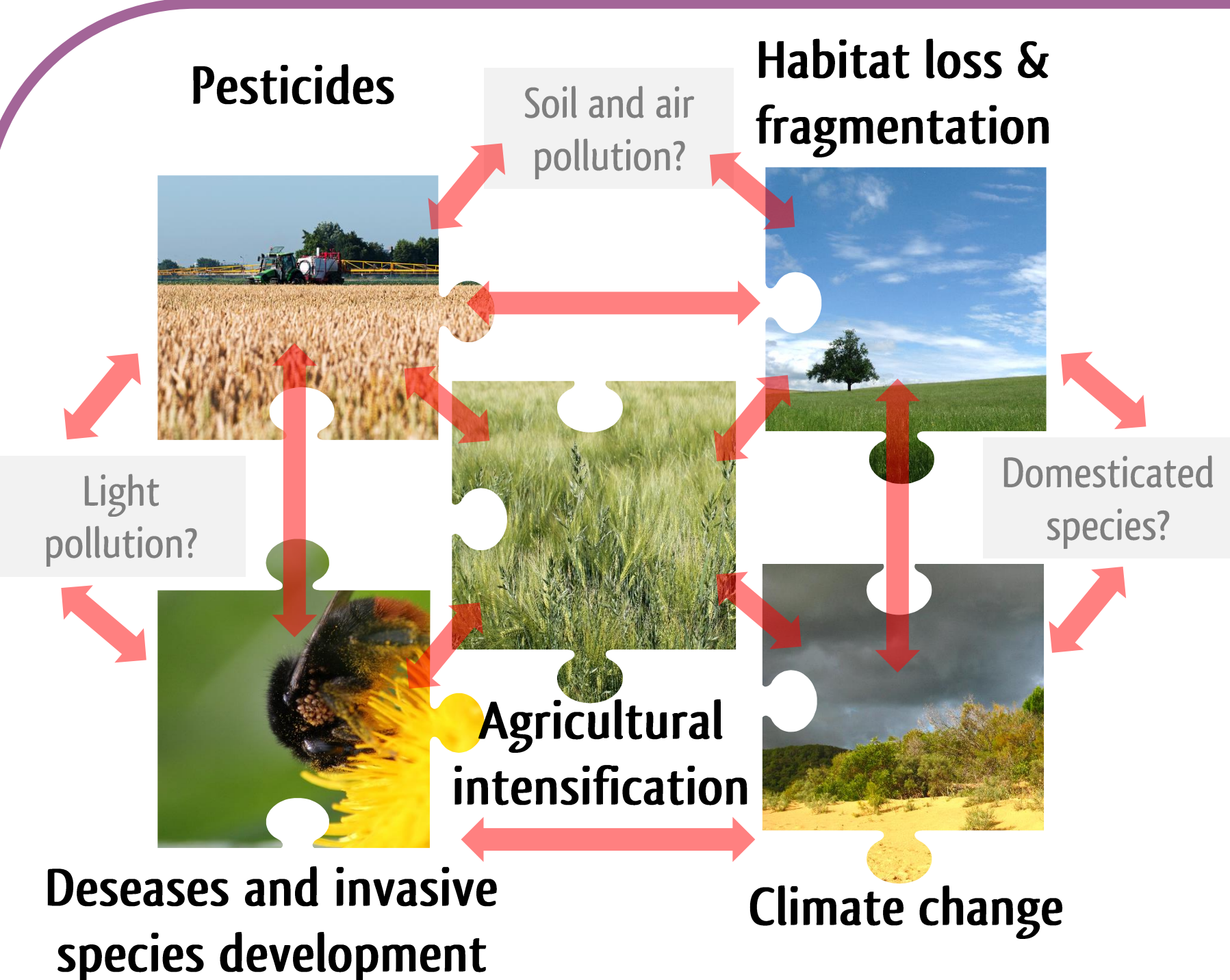
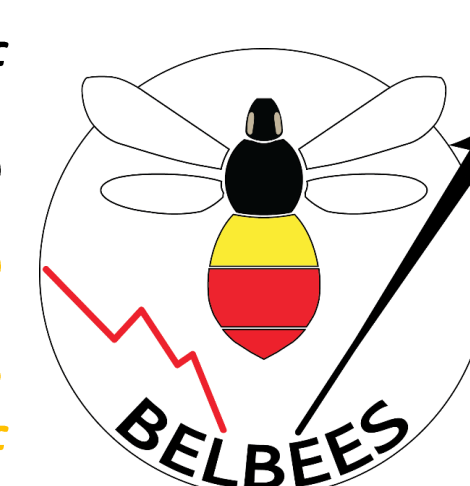


Fig. 6 : The main causes of wild pollinators decline [13] and other possible causes (in grey). These causes of decline can act in synergy (red arrows).

The decline of wild pollinators in our region is plurifactorial and synergies between causes make it difficult to evaluate the relative importance of each factor.

##### WILD BEES

The BELBEES project assesses the causes of decline of wild bees in Belgium and shows the relative importance of 5 main factors : climate change, genetic diversity loss, food sources depletion, pesticides, development of diseases.



##### HOVERFLIES

There is a lack of studies to assess hoverflies decline factors. It appears that habitat loss would be the main factor but climate change and pesticides also represent considerable risks.

##### BUTTERFLIES

It seems that habitats loss and unadapted management practices are the main causes of butterflies decline. The lack of nectar resources and climate change are aggravating factors.

##### Pollination value in the SAPOLL area

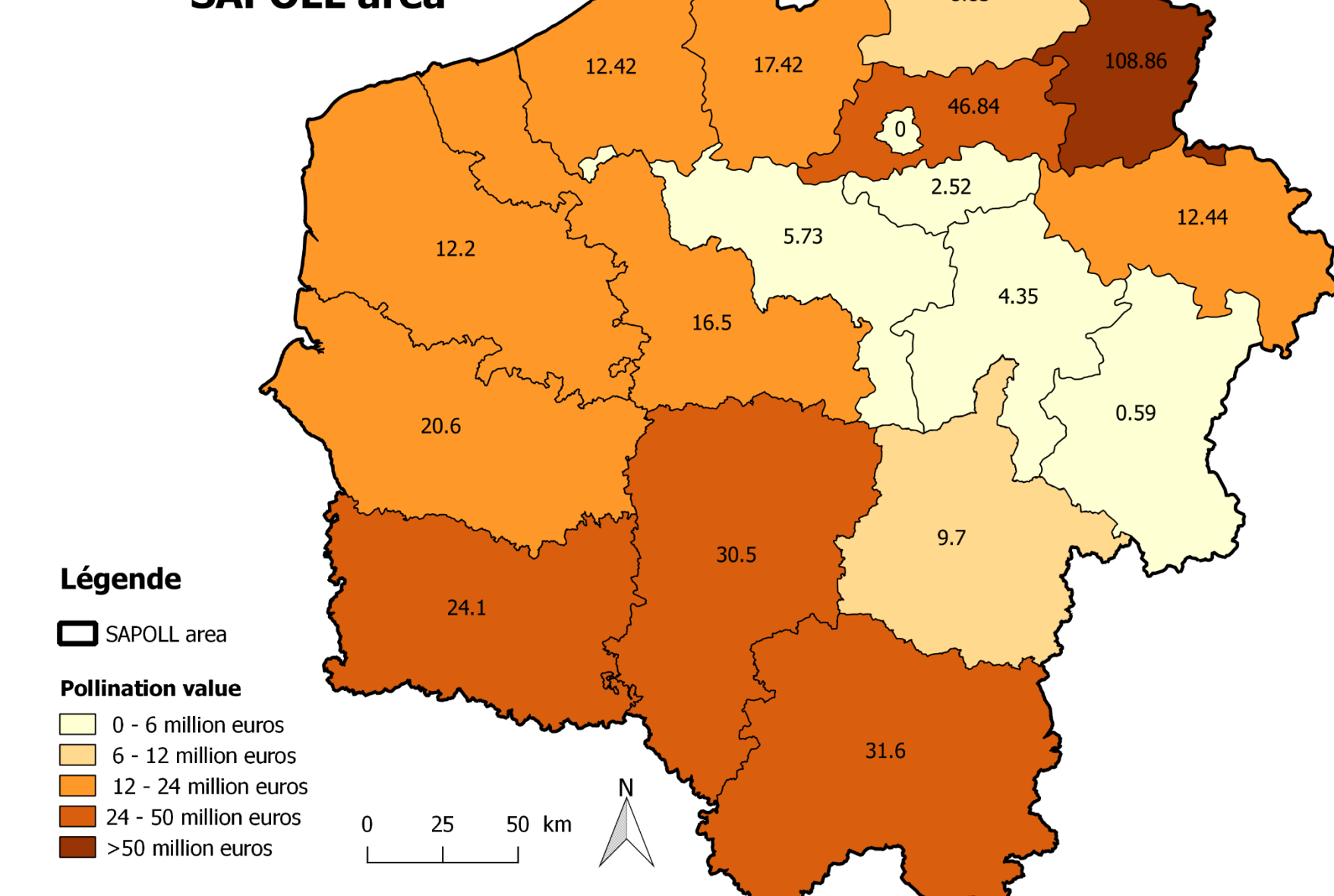


Fig.7: Estimated pollination value for human food production per province or department in Belgium and north of France. The total pollination value is of 368.2 million euros. This represents less than 5% of total food production on the area (7673 million euros) [14], [15].

Wild pollinators are essential for our ecosystems, for the durability of our agriculture and also for their inherent value as part of our biodiversity.

Knowledge on wild pollinators' decline increased a lot during last decade. There still is a lack of knowledge for some taxa, in some areas, or for some environmental or anthropic factors. Nevertheless, this decline is obvious and its main causes have now been identified and partially quantified. **We are past the precautionary principle and at this stage first actions for wild pollinators safeguarding must be taken!** In this context, we suggest to focus most efforts on the identification, the implementation and the study of tangible actions in the cross-border area. In order to evaluate the efficiency of our actions short term and long term monitoring schemes and programs are necessary. Complementary researches are of course still needed to better understand pollinators trends and decline in order to sharpen our actions and continuously improve their effectiveness.

A CALL TO ACTION!

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