# Associations between species diversity in our diet and gastrointestinal cancer risk: results from the European Prospective Investigation into Cancer and Nutrition Study

Bernadette Chimera[1] (Presenter) on behalf of EPIC scientists

[1]International Agency for Research on Cancer-World Health Organization, France

(BIOHEALTH PROJECT, WCRF, PI: I Huybrechts)

International Agency
for Research on Cancer

World Health
Organization
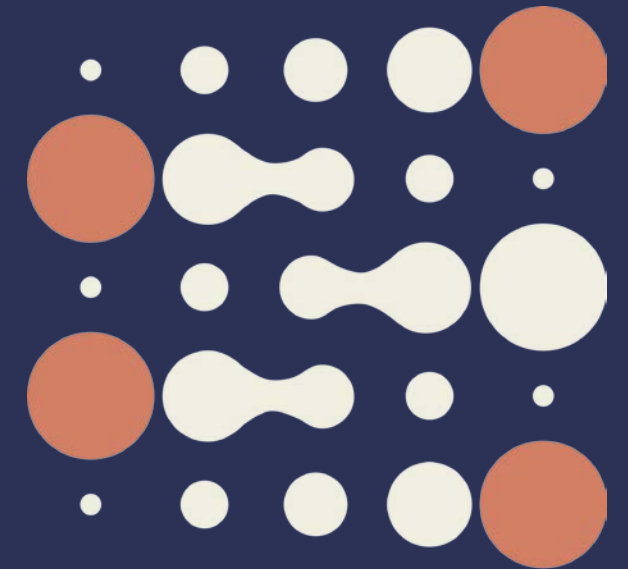
BACKGROUND

FOOD BIODIVERSITY- Defined as the variety of plants, animals, and other organisms that are used for food and drink, both cultivated and from the wild. It can be measured by dietary species richness.
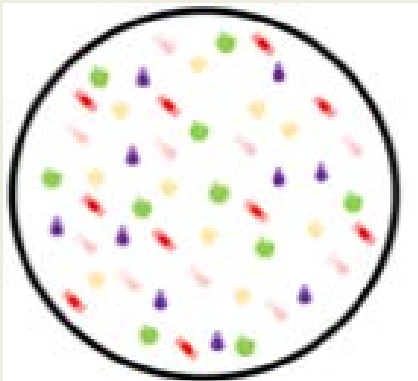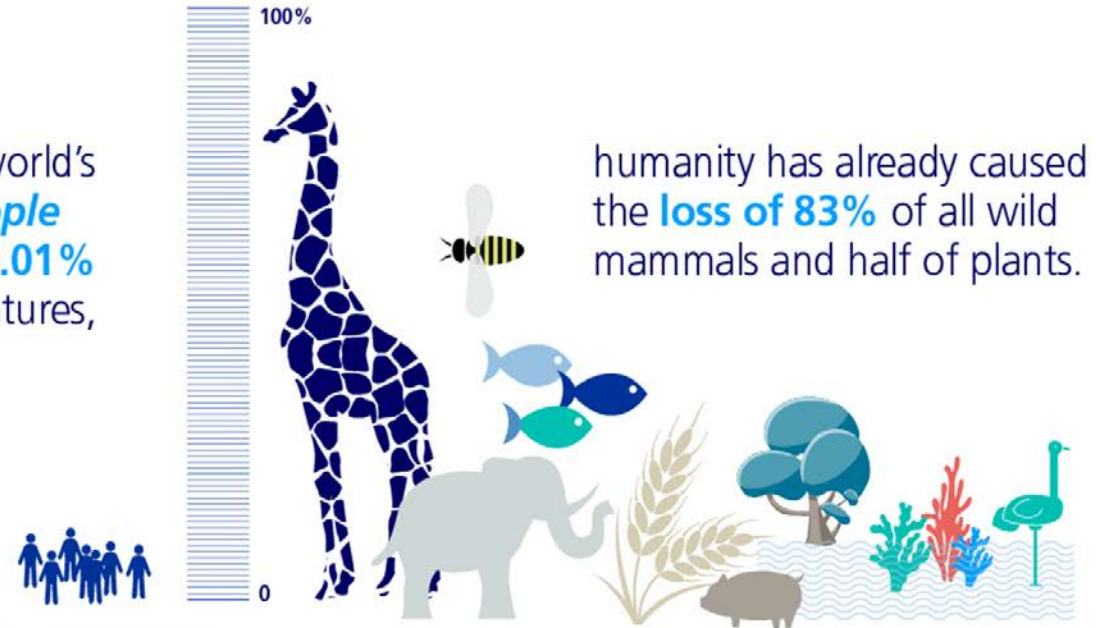
Distinct species are indicated by their colour.

Food biodiversity associated with total and all-cause mortality in cancer (Hanley-Cook et al 2021)

Biodiversity is declining faster than ever

100%

Although the world's **7.6 billion people** represent just **0.01%** of all living creatures,

humanity has already caused the **loss of 83%** of all wild mammals and half of plants.

0

Source: Global Risks Report 2020, World Economic Forum

Objective; Assess the associations between species diversity in our diet and gastrointestinal cancer risk.

METHODOLOGY

- Multi-centre cohort,~500,000 volunteers

- 10 European countries (9 countries used- Greece excluded)

- Recruited from 1992 to 2000

- Dietary questionnaires

- Lifestyle questionnaires

- Health outcomes (via cancer registries, health insurance records, etc.)

- Dietary species richness measure- the absolute number of species consumed annually.

- Multivariable-adjusted Cox proportional hazard regression models with age as the primary underlying time variable

- Adjusted for known cancer risk factors

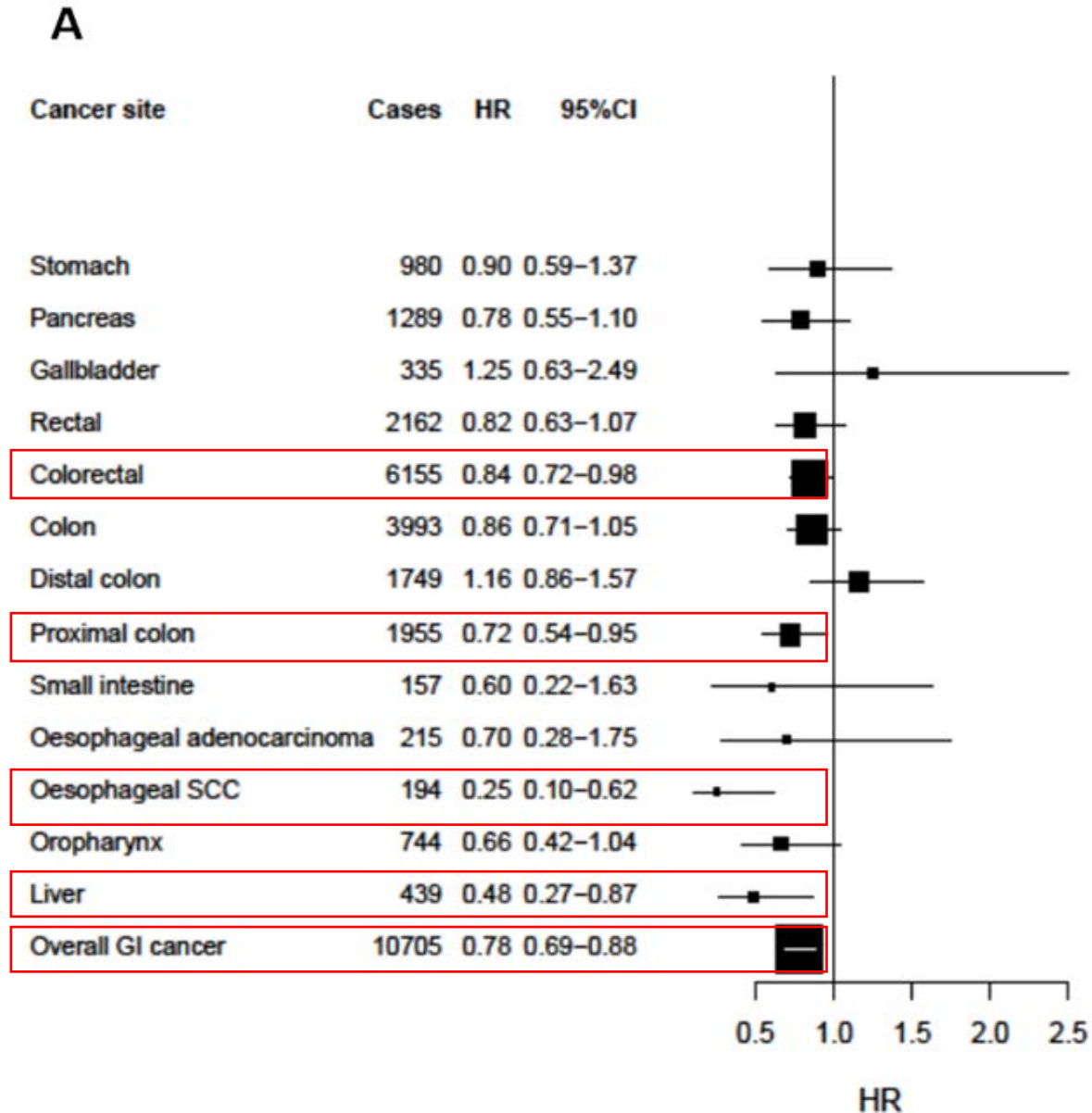European Prospective Investigation into Cancer and Nutrition (EPIC)
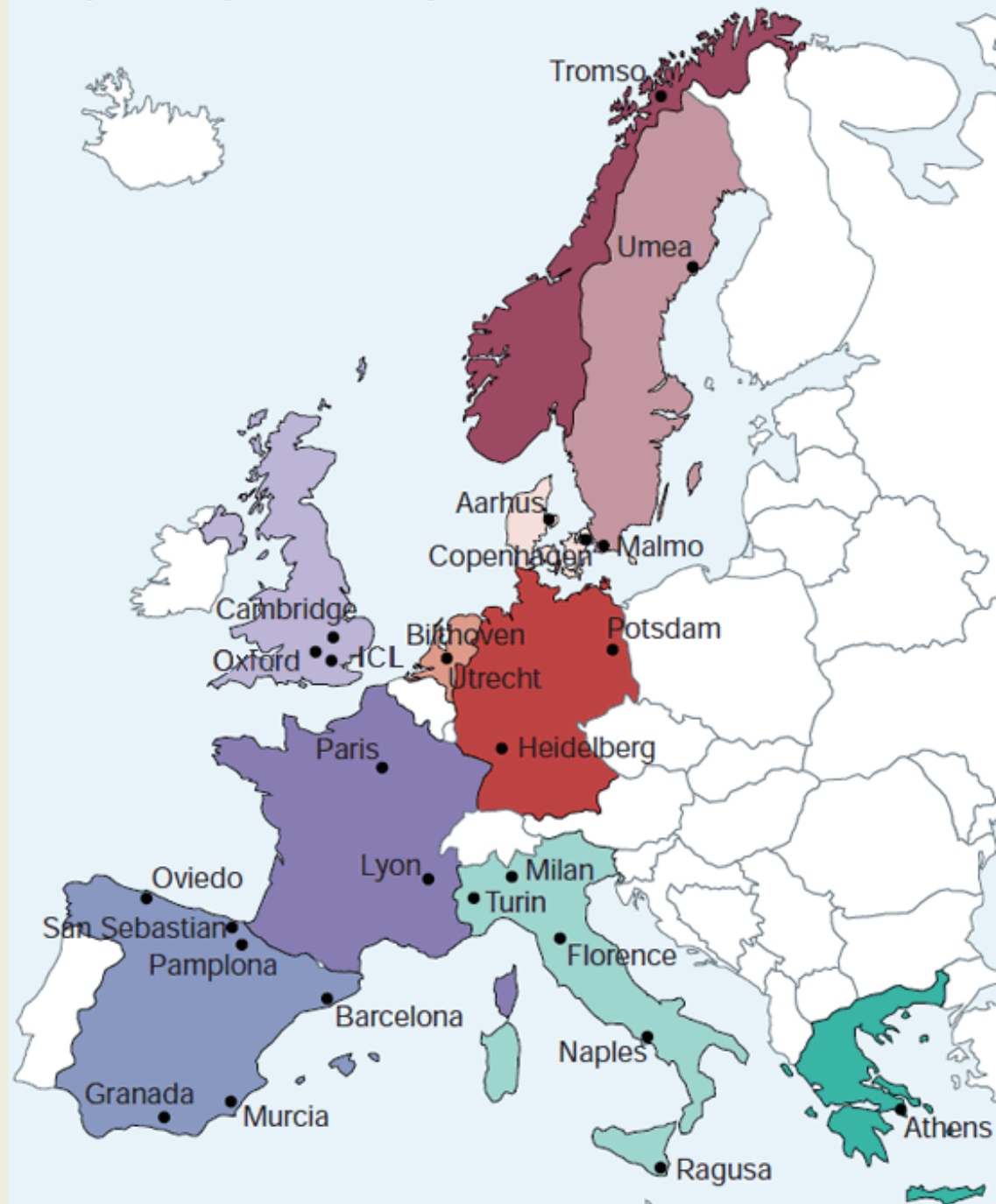
RESULTS

Figure A; Shows **significant inverse associations between per 10-species increment in dietary species richness and overall gastrointestinal cancer risk** and specific cancer types such as squamous cell oesophagus cancer, liver cancer, and colorectal cancer.

NB: The selected subtypes shown were displayed where results differed between subtypes.

KEY TAKE HOME MESSAGES

Conclusion

- Higher dietary species richness was inversely associated with overall gastrointestinal cancer risk and the risk of specific cancer types, independent of socio-demographic, lifestyle, and other known dietary risk factors.

Recommendations
These analyses should be validated in cohorts with repeated dietary intake measurements to consider potential changes in food consumption over time.

Policy

Good health!

Species-rich diet!

Low stress for earth!
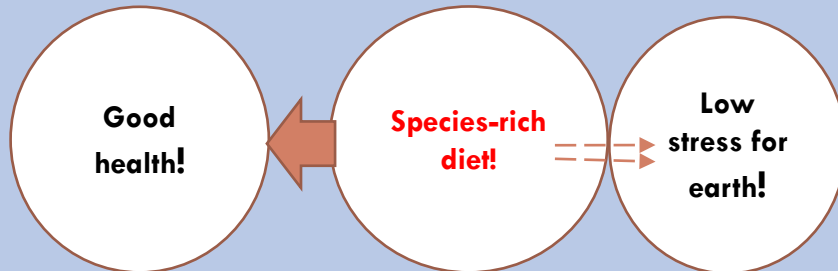
FUTURE DIRECTION
Establish metabolic profile of degrees of species diversity and examine potential mechanisms involved.

THANK YOU.