



#ANH2023

<https://www.anh-academy.org/academy-week/2023>



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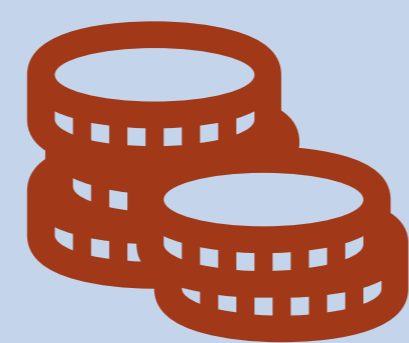
Introduction

Fruits and vegetables are essential to healthy diets. Populations of most countries, including the UK, India, and South Africa, are not consuming the minimum daily recommended amounts ($\geq 400\text{g/day}$). Land used to grow food is typically associated with lower biodiversity than natural land cover. Whilst more fruits and vegetables will need to be consumed to improve human health, the risks this could pose to biodiversity were unquantified.

Data & Method



fruit and vegetable (n=54)
 production, yield, & harvested area
 ~10km cell size
 c.2000 (Monfreda et al., Global Biogeochemical Cycles, 2008)



international trade of
 fruits & vegetables
 (FAOSTAT & Dalin et al., Nature, 2017)



species richness
 ~10km cell size
 c.2013 (Etard et al., Global Ecology & Biogeography, 2020)

We define Biodiversity Pressure (BP) per tonne as...

$$\frac{\text{harvested area} \times \text{no. of species}}{\text{production (tonnes)}}$$

... and compute a **consumption-weighted BP** using global import & domestic production data.

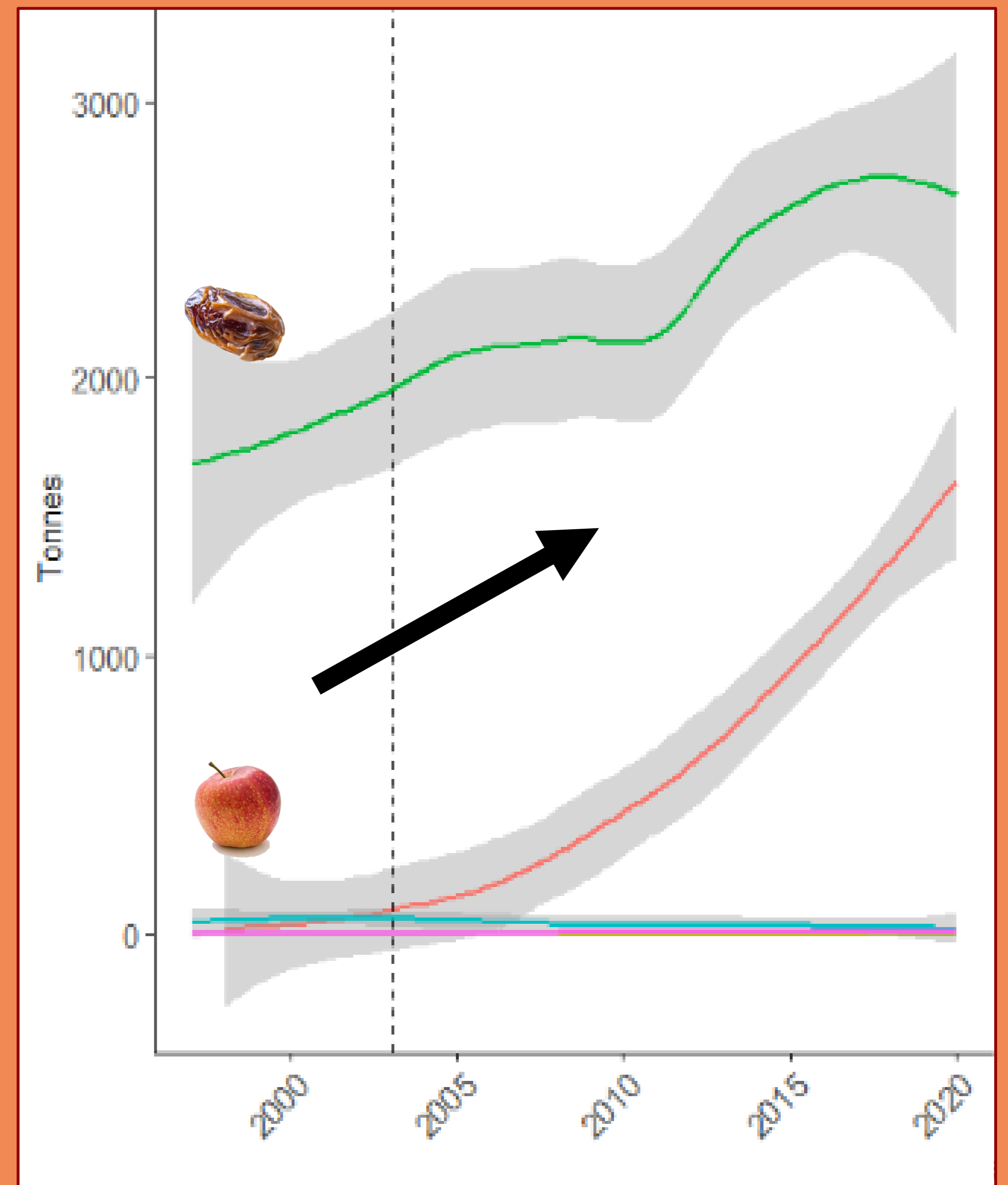
It's not just what we eat; it's also where it comes from and how much we eat that matters for biodiversity...



Figure 1. Biodiversity Pressures (BP) of fruits & vegetables with the highest consumption-weighted BP for India, comparing domestic pressure with pressures in key partner countries. Log scale; brown line indicates India's domestic BP



Figure 2. Imports of dates (lower pressure when produced domestically) and apples (lower pressure in import partner countries) to India since 2000.



... so national dietary policies have international biodiversity consequences and trade dependency is key to watch as we look for a sustainable future.

Key Findings & Conclusions

- The biodiversity pressures of fruits are **not always greater** than vegetables.
- There are no obvious 'problem crops'.
- Some crops have a lower biodiversity pressure when grown domestically (e.g., dates, grapes, & green peas in India) and others when imported (e.g., apples, bananas, and mangoes in India).
- There is a need for **contextualised and regionally differentiated policies** to manage biodiversity pressures.

The SHEFS team also looked at water stress in South Africa

- paper here:

