

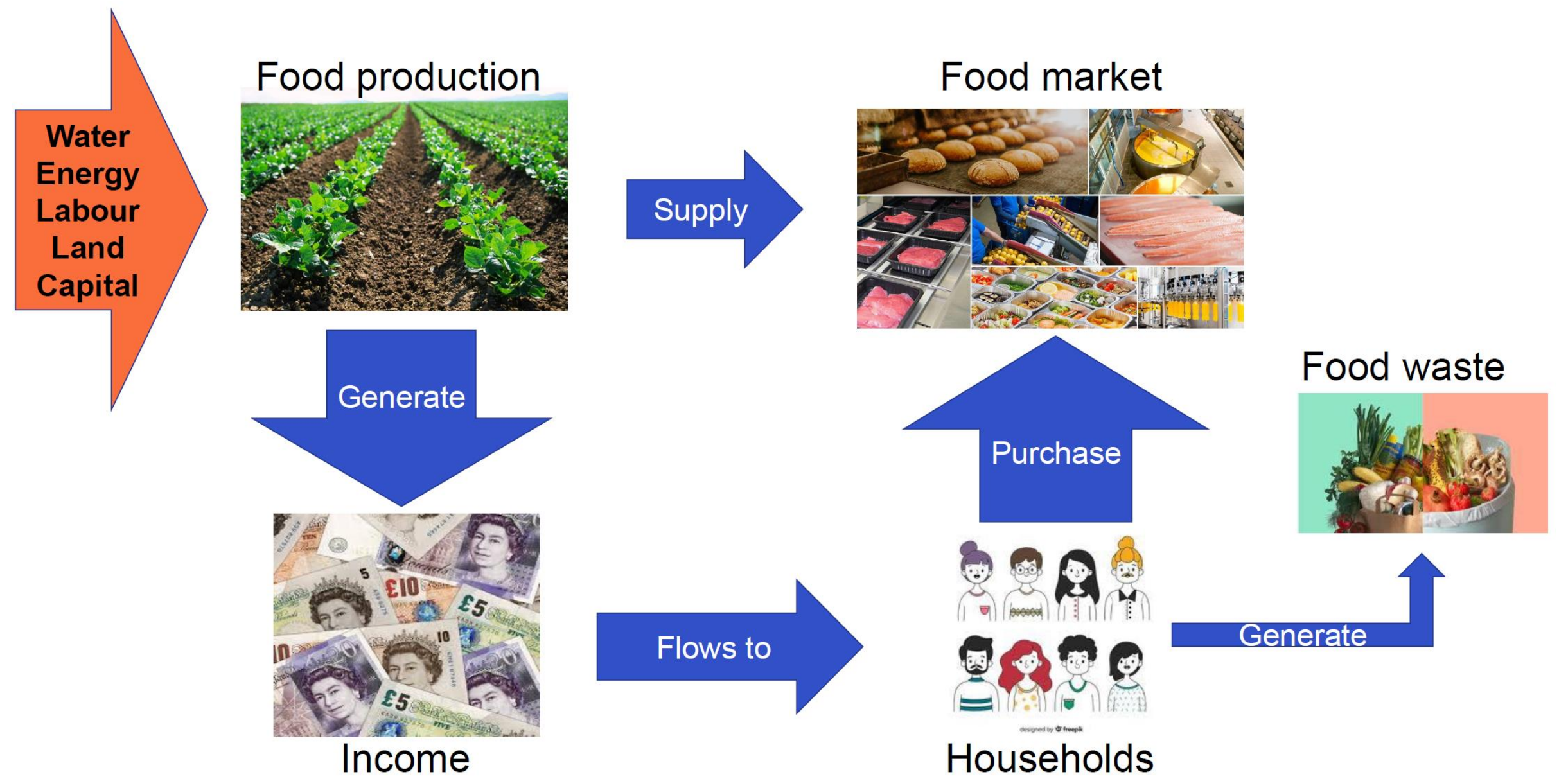
Estimating income effect of food waste reduction at the food-energy-water nexus

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Key message

While food waste reduction is good for environment and resource savings, it likely accompanies with reduced food production activities, inducing income losses, at least in short-term for some economic agents who earn income from food production.



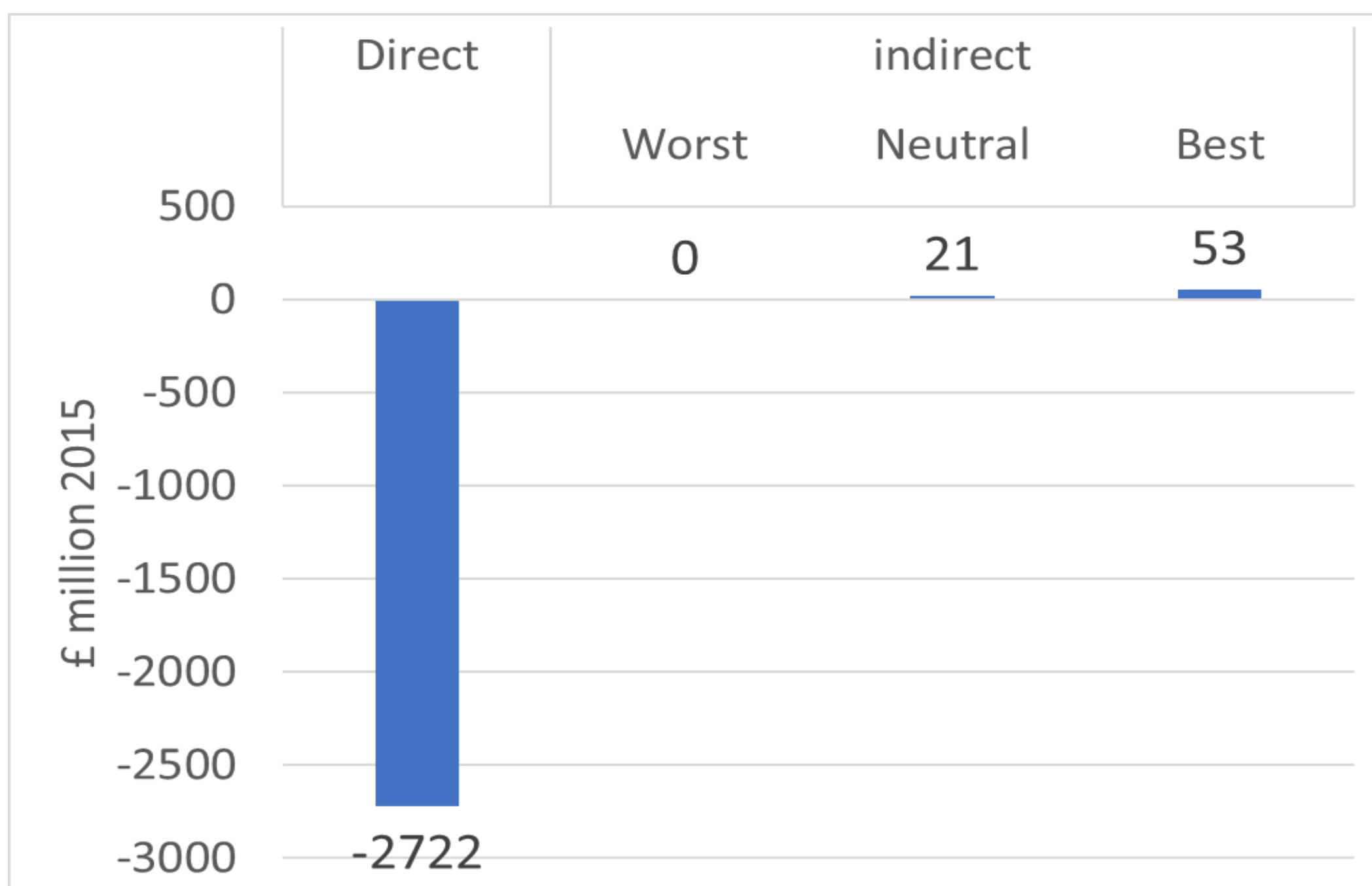
Method

Based on input-output data of the UK 2015, an input-output model describing sectoral interlinks is introduced to estimate direct and indirect income effects by considering the income reallocation among representative economic agents including households, government, and investors. Three income reallocation cases are considered: Worst (zero income savings), Neutral (reduced income is allocated proportional to domestic agents), and Best (households keep all income savings and all reduced income is allocated proportional to other domestic agents).

Direct income effect of a 20% reduction in food waste by the UK households

Sector	Reduced values (£bn)			Shares in total (%)		
	Domestic	imports	Total	Domestic	imports	Total
Food	1874.3	423.9	2298.2	82	18	100
Energy	60.7	37.7	98.4	62	38	100
Water	5.5	0.3	5.8	95	5	100
Waste	3.8	0.7	4.5	85	15	100
Others	777.9	154.9	932.8	83	17	100
Total	2722.2	617.5	3339.7	82	18	100

Direct and indirect effects on domestic income of a 20% reduction in food waste by the UK households



Conclusions

Our preliminary results show that nationally households may save income up to £2.7 billion per year given constant income if 20% of the wasted food is reduced by the UK households.

However, the reduction in food waste can result in losses of income generated from production of food, energy, water, and other products.

Hence,

- actual income savings of households may be reduced considerably, depending on how the income is allocated among economic agents.
- almost all the income savings of the households disappears at the national level if income effects on all economic agents are considered, due to reduced production activities at the food-energy-water nexus and other relevant sectors.