

# Paying for sustainable agri-food systems: consumer attitudes towards UK-sourced seafood produced with renewable energy

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## Introduction

Integrating anaerobic digestors (AD) with recirculating aquaculture systems (RAS) for sourcing King Prawns (KP) in UK agriculture presents a promising diversification strategy. RAS powered by AD can enhance farm net margins by up to 56% for arable and 38% for dairy farms while improving waste recycling<sup>a</sup>. Though KP is a healthy, mainly imported seafood, there are concerns about environmental practices abroad (e.g., mangrove deforestation). This exploratory study examines consumer willingness to pay (WTP) for UK-sourced KP in a combined AD & RAS system at UK farms.

## Research Question

To what extent are UK consumers willing to pay a premium to switch from KP processed in the UK under standard practices (e.g., conventional energy source) to those farmed using sustainable systems based on AD & RAS integration?

## Methods & Data

- WTP Survey (Fig. 1)
- Use of Likert scale items to gauge environmental attitudes
- Conducted face-to-face in May 2024 during the U. of Reading Community Festival, Reading, UK (Fig. 2 & 3)



Fig 1. Survey's WTP questions (£5 baseline price for a 150g unit, 2024 prices)

## Study Location



Fig 2 Community Festival Reading, May 2024 (Photos: J. Campos G., U. of Reading)

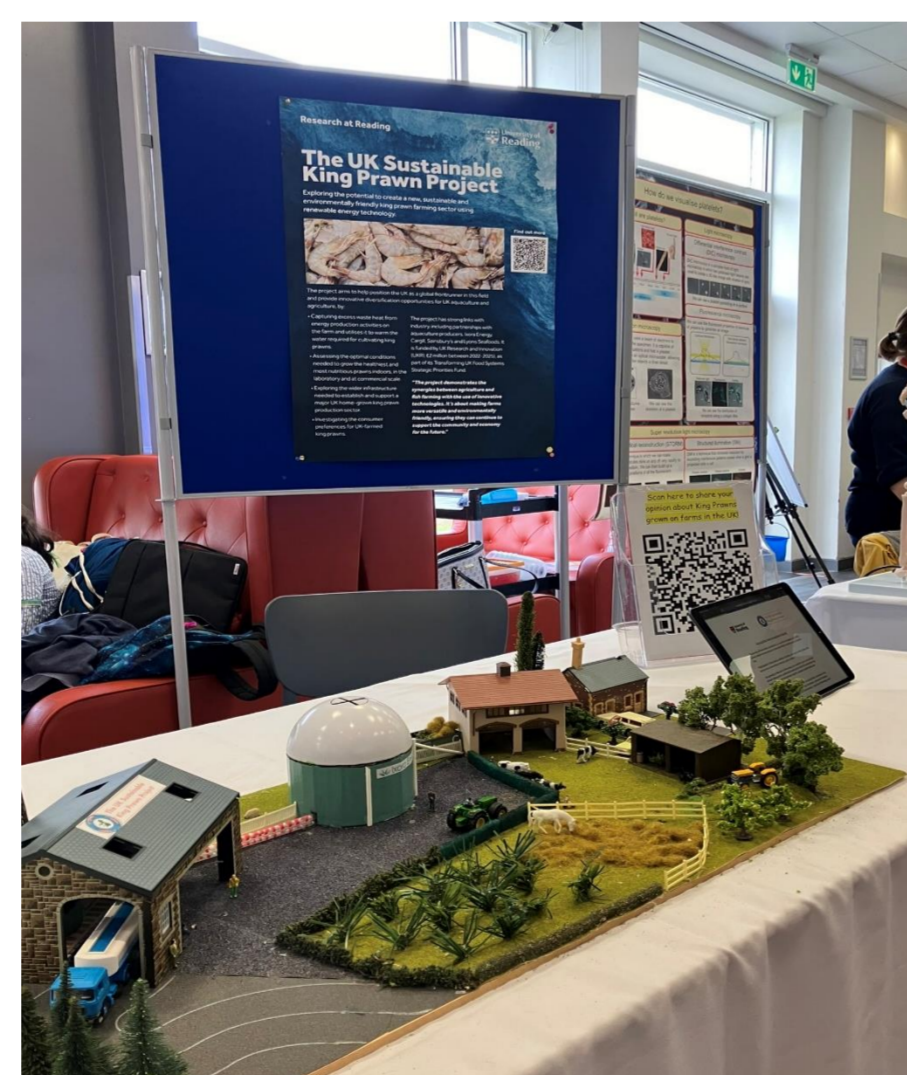


Fig 3 Material for survey data collection, including a farm with AD & RAS integration at scale 1:87 (Photo: J. Campos G.)

## Results – Respondents Demographics

- 39% of participants were between 35 and 54 years old.
- 59% were female, and 73% had completed postgraduate or college/university education

## Results – Environment self-perception and attributes importance when buying KP

- 89% of the respondents stated that they somewhat agree or strongly agree with being environmentally conscious.
- 72.3% of respondents consider the expiration date very/extremely important when buying prawns. In contrast, only 9.2% give the “Brand Name” this high importance.

## Results – Likelihood of replacing usual KP purchases

How likely are you to replace your usual prawn purchases with prawn 100% farmed in the UK under standard or integrated AD&RAS systems?:

- 45% were somewhat likely to switch under both production scenarios.
- The extremely likely group doubled under AD & RAS (14.5% versus 29.8%)

## Results – WTP for UK-grown prawns

- Standard practices: 33.9% of respondents would pay an additional of £1.051 or more (new price\*: £6.05 or more)
- Integrating AD&RAS: 48.9% of respondents would pay an additional £1.051 or more

\* Including £5 baseline

30% of respondents show a WTP of an additional £1.61 (new price\*: £6.61 or more) or more for a system integrating AD&RAS versus 19% under standard practices

## Discussion and Conclusions

- The principles of a circular economy and domestic production suggest a positive influence at the consumer choice level.
- The WTP findings suggest a premium market price for innovative agri-food systems integrating AD & RAS.
- This potential transformation opens avenues for practices that satisfy the demand for healthy diets and support the transition towards more sustainable food systems.

### References

<sup>a</sup> Campos, J., Y. Gadanakis, M. Mancini and I. Bateman. 2023. Modelling the economic performance of Recirculating Aquaculture Systems (RAS) at the farm level. *Proceedings of the 97th Annual Conference, Agricultural Economics Society – AES*

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**The UK Sustainable King Prawn Project**

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PROJECT WEBSITE

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