

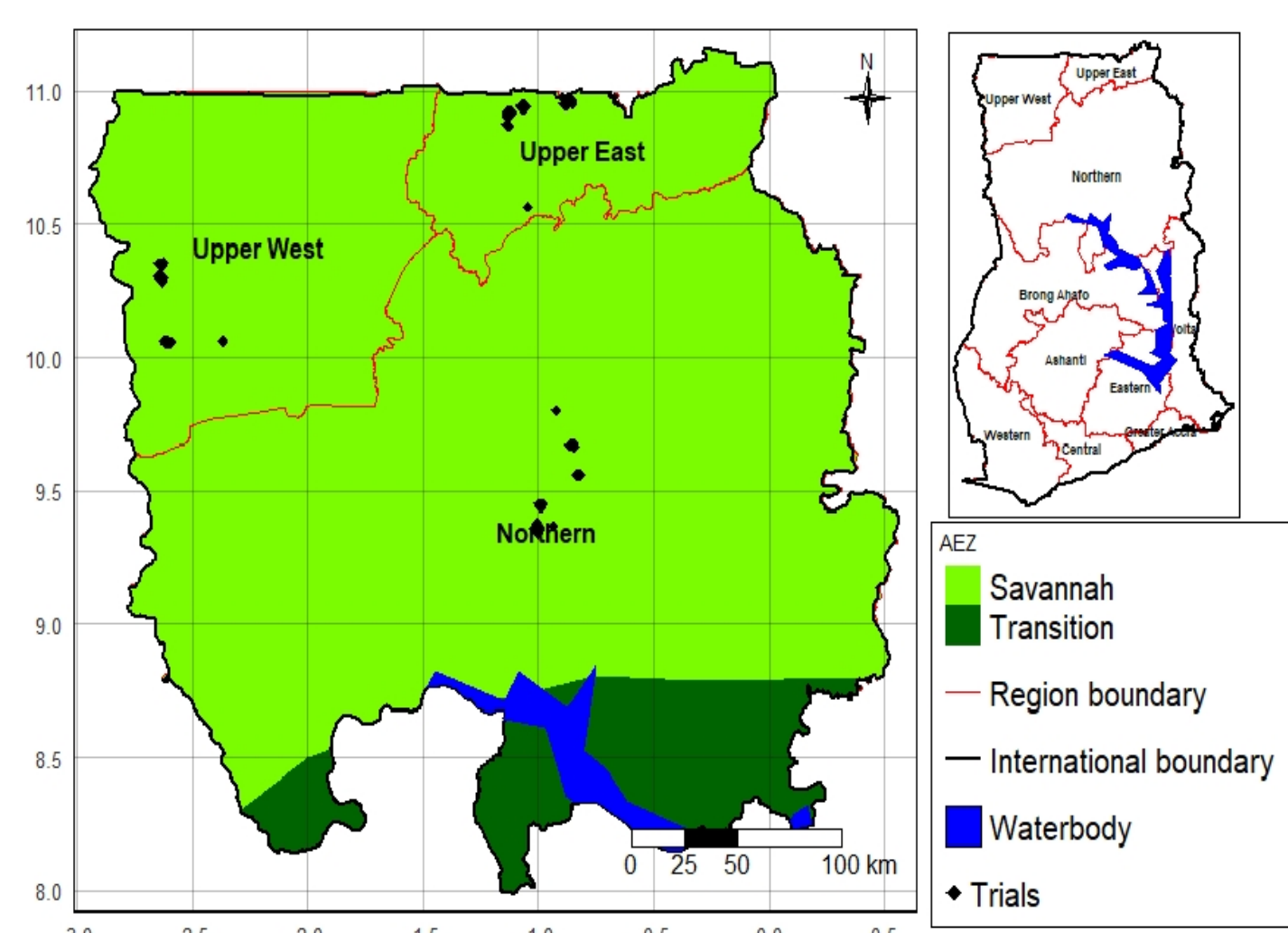
# Potential impact of groundnut production technology on welfare of smallholder farmers in Northern Ghana

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## Introduction

- Groundnut is a dominant legume crop in Ghana (55% of the total legume production).
- Northern Savannah accounts for more than 90% of the total production
- Farmers plant the seeds very sparsely (about 9 plants/m<sup>2</sup>) which becomes one of the causes for low yield
- Recently a higher planting density (22plants/m<sup>2</sup>) has been introduced by the International Institute of Tropical Agriculture (IITA) under its project known as Africa RISING
- This study (1) assesses the economic advantage of adopting the new technology, (2) predicts its potential adoption, and (3) assess its potential impacts on household poverty

## The study areas



The study was conducted in three regions of Northern Ghana, namely: Northern Region, Upper West Region, and Upper East Region (Fig. 1).

Fig. 1: Location of the study areas in Tanzania

## Data collection and analysis

We used data from on-farm experiments, focus group discussions, and a household survey. We compared a new planting density (22 plants/m<sup>2</sup>) with the farmers' practice (9 plants/m<sup>2</sup>). We followed three steps in our analysis (Fig. 2). The impact estimations were done under the assumptions of open market economy and closed market economy.

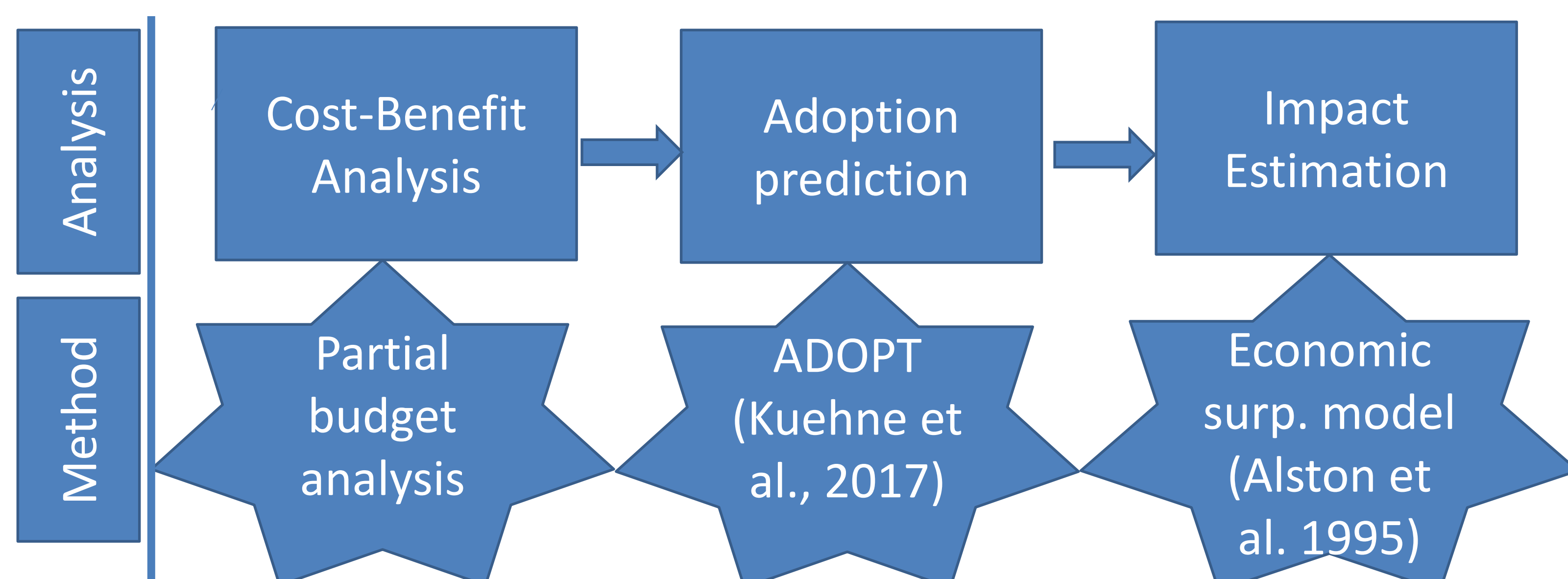


Fig. 2: Procedures and methods of data analysis

We thank farmers and local partners in Africa RISING sites for their contributions to this work. We also acknowledge the support of all donors which globally support the work of the CGIAR centers and their partners through their contributions to the [CGIAR system](http://CGIAR.org)



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## Results

Table 1: Partial budget analysis of on-farm groundnut spacing trials

	New practice	Farmers' practice
Average groundnut yield (kg/ha)	966	492
Gross margin (Ghc/ha)	1311	57
Benefit-Cost Ratio	1.87	1.05
Unit cost (Ghc/kg grain produced)	1.6	2.86

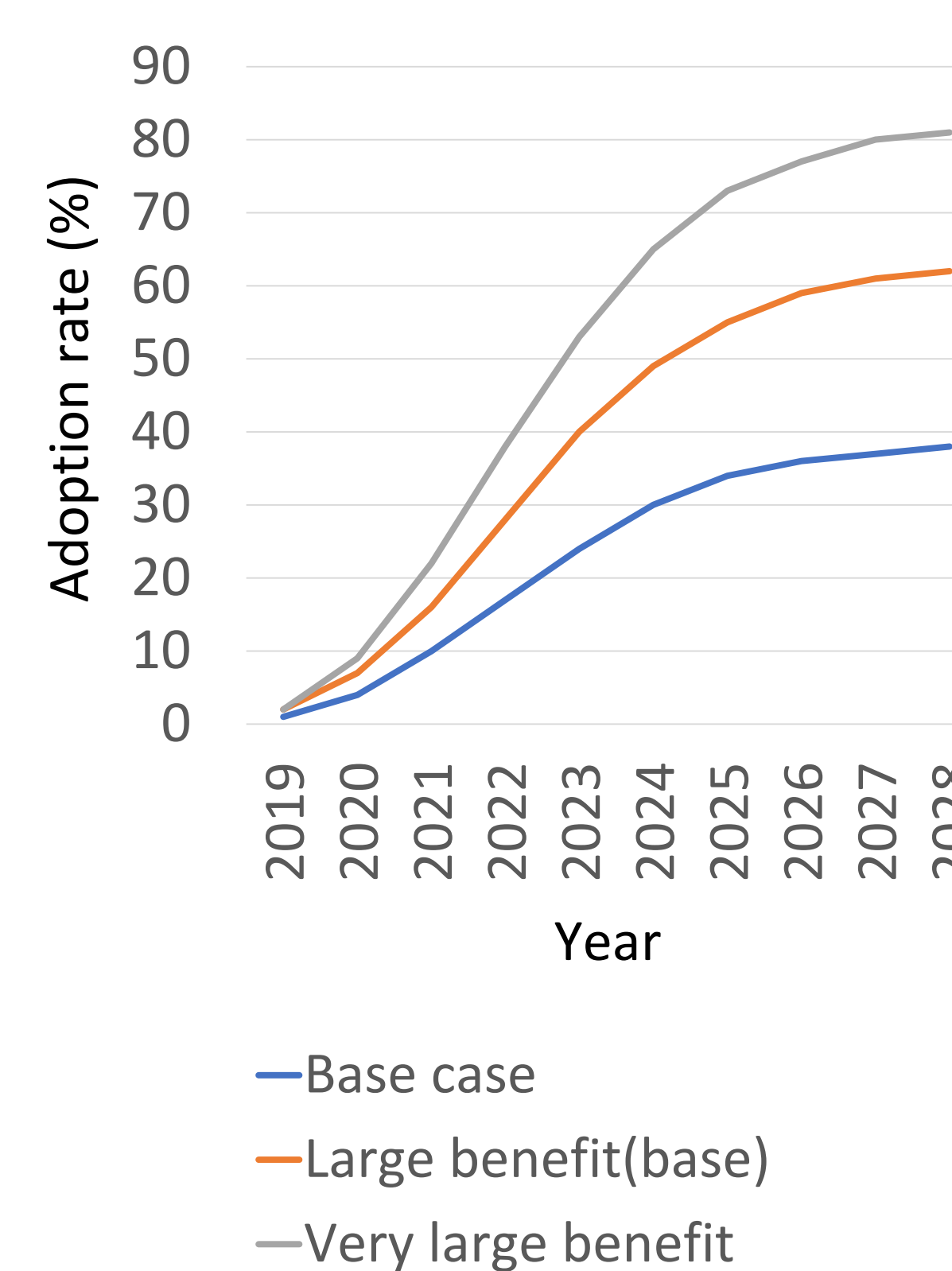


Fig. 3: Predicted adoption rate

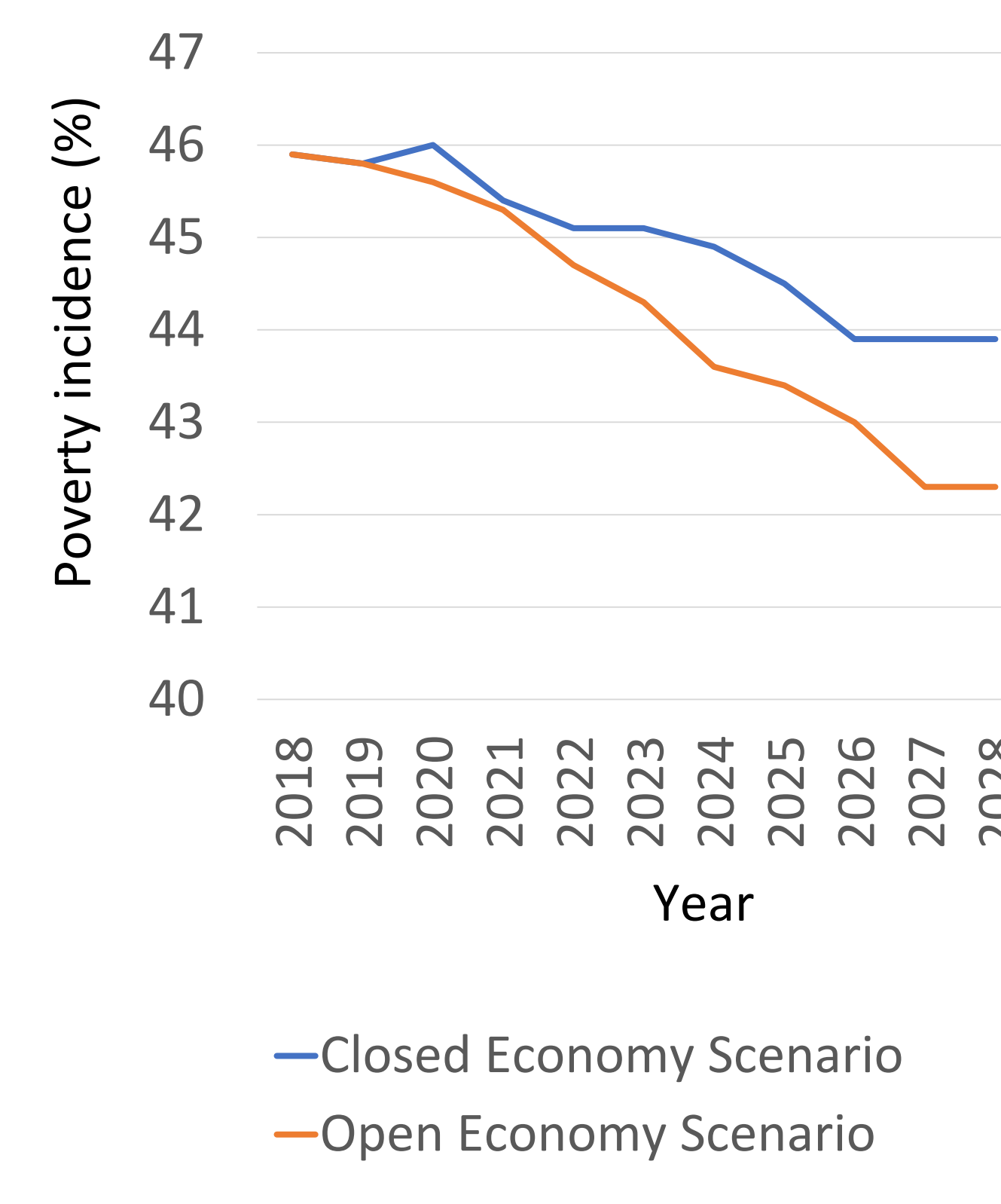


Fig. 4: Impact on poverty

## Conclusion and policy implications

- The new technology is expected to be adopted by about two-third of the groundnut farmers within ten years
- The adoption is expected to reduce poverty by 3.6% under an open market economic policy and by 2% under a closed market economic policy.
- Improving farmers' access to the international market while enhancing domestic market integration increases the impact of the technology

## References

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