



# Improving smallholder farmer incomes through strategic market development in mango supply chains in southern Vietnam

**End of Project Review  
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**Title:** Fertiliser Management Practices

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Implementing Agency



Funding Agency



Australian Government  
Australian Centre for  
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# Aim & Objectives

## Key focus

Identify optimum NPK fertilizer to maintain yield without negative quality impacts

## Research questions

- ▶ What on-farm, post-harvest and marketing innovations are likely to generate the most significant impacts to reduce losses, increase productivity and quality outputs that will improve returns directly related to smallholder incomes?
- ▶ What innovations have the most cost-effective and positive impacts on productivity, losses, quality and harvest timing, leading to improved price and farmer income?
- ▶ What processes will strengthen markets linkages and agribusiness partnerships and enhance innovation adoption along the chain?

# Overview

- ▶ Studies have identified that mango farms are using excessive fertilizer which can lead to increased costs, reduction in quality and negative environmental impacts
- ▶ Trials to identify optimal NPK fertiliser dosage to maintain yield without impacting on quality
- ▶ Reduce costs and negative environmental impacts



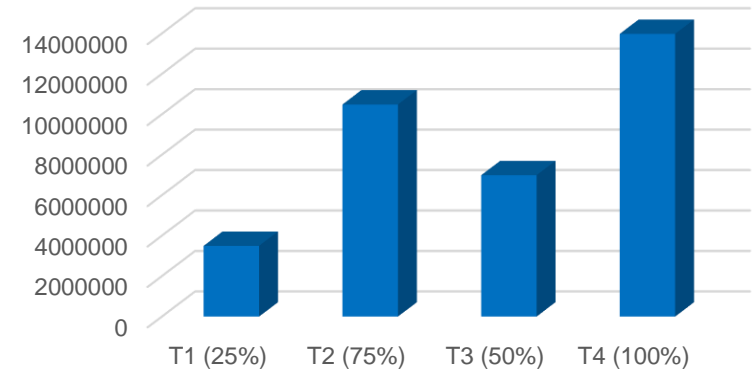


# Benefits of change

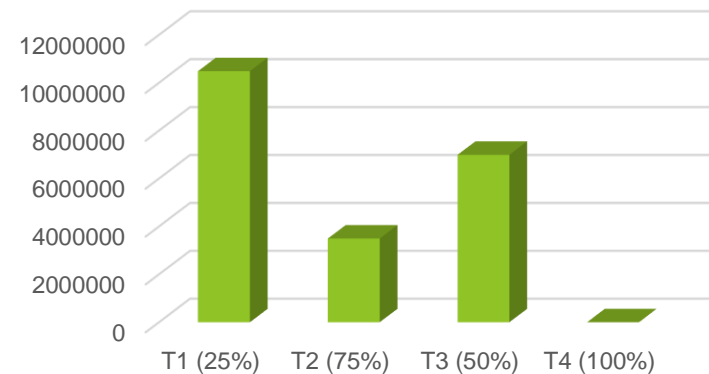
## What we learnt

- ▶ NPK rates can be reduced by 25% without affecting yield
- ▶ Different application dosage of NPK affects yield components -
  - weight
  - length
  - width
  - yield/tree
  - fruit quality (pulp thickness)
- ▶ NPK dose rate does not affect -
  - total number of mangoes/tree
  - fruit diameter
  - brix content
  - peel colour & pulp

Chemical fertilizer cost savings (VND/season/ha)



Chemical fertilizer farmer savings (VND/season/ha)



■ Saving money for chemical fertilizer (VND/season/ha)

# Pathways to adoption

- ▶ Capacity building for extension staff, farmers & service providers to develop realistic & action-orientated nutrition plans
- ▶ Review & develop SOPs to incorporate into GAP processes
- ▶ Capacity building for farmers to improve cost/benefit understanding & business decision-making skills
- ▶ A dedicated study to understand the long-term benefits of NPK reduction on fruit quality
- ▶ Specific research on boron & calcium related to the improvement of fruit set & quality to drive increased mango trade

