

**IMPACTS OF LAND TRANSFORMATION AND FACTORS THAT  
REGULATE NITROGEN FLUXES IN THE SOILS OF RAINFOREST  
TRANSFORMATION SYSTEM AS A FUNCTION OF SOIL DEPTHS**

**Damris Muhammad**

**Linda Handayani**

**Samsidar**

# Introduction

- Land transformation modify soil properties
- Transformation of lowland tropical forest decreased C soils; both surface and deeper soils.
- Is N soils also affected in the same way ?

# Objectives

- To measure N emission across soil-atmosphere from palm oil plantation with reference secondary forest.
- To determine whether varying soil depths affect N emission across soil-atmosphere.

# Two Transformation systems

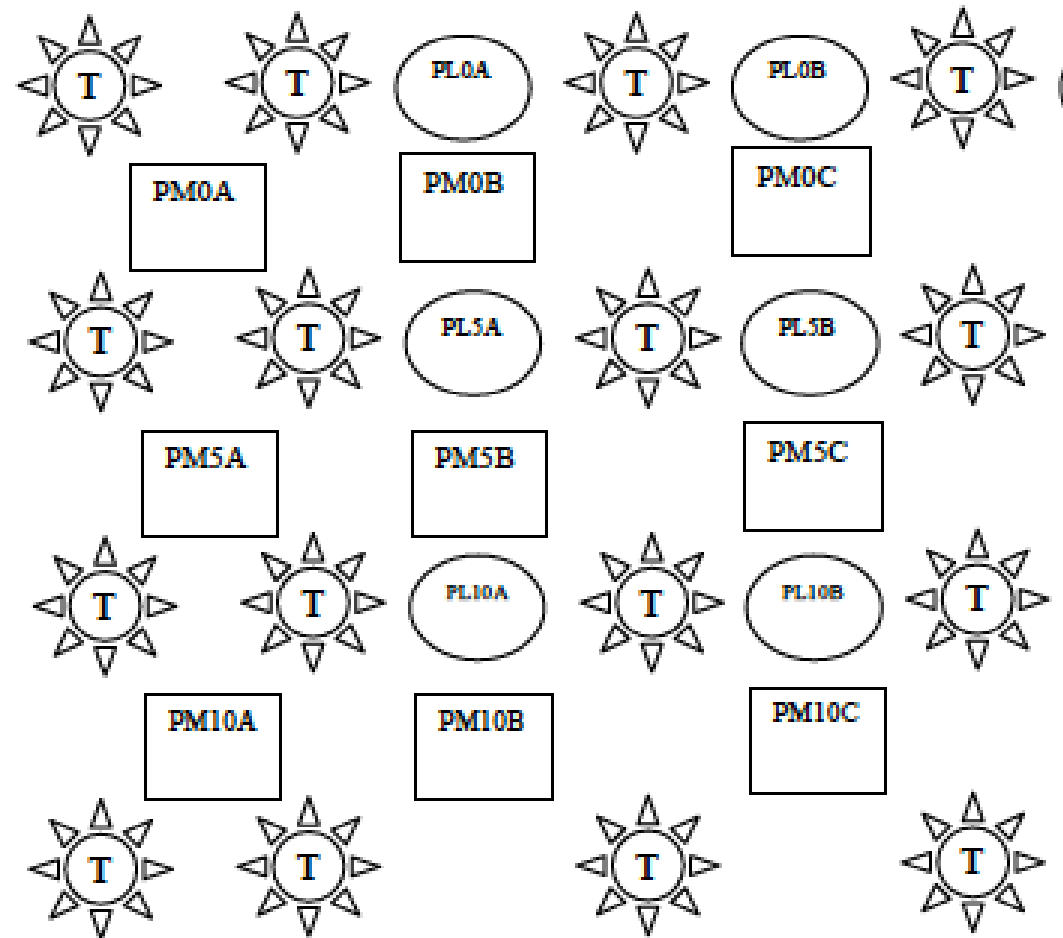
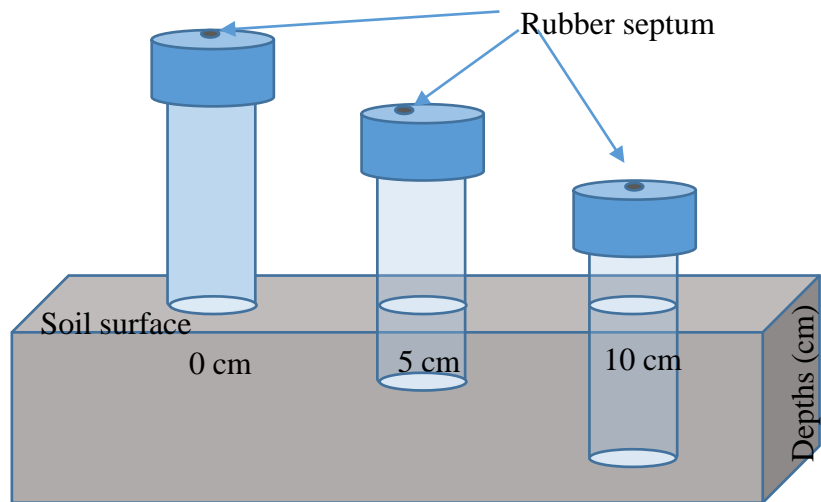
- Secondary forest



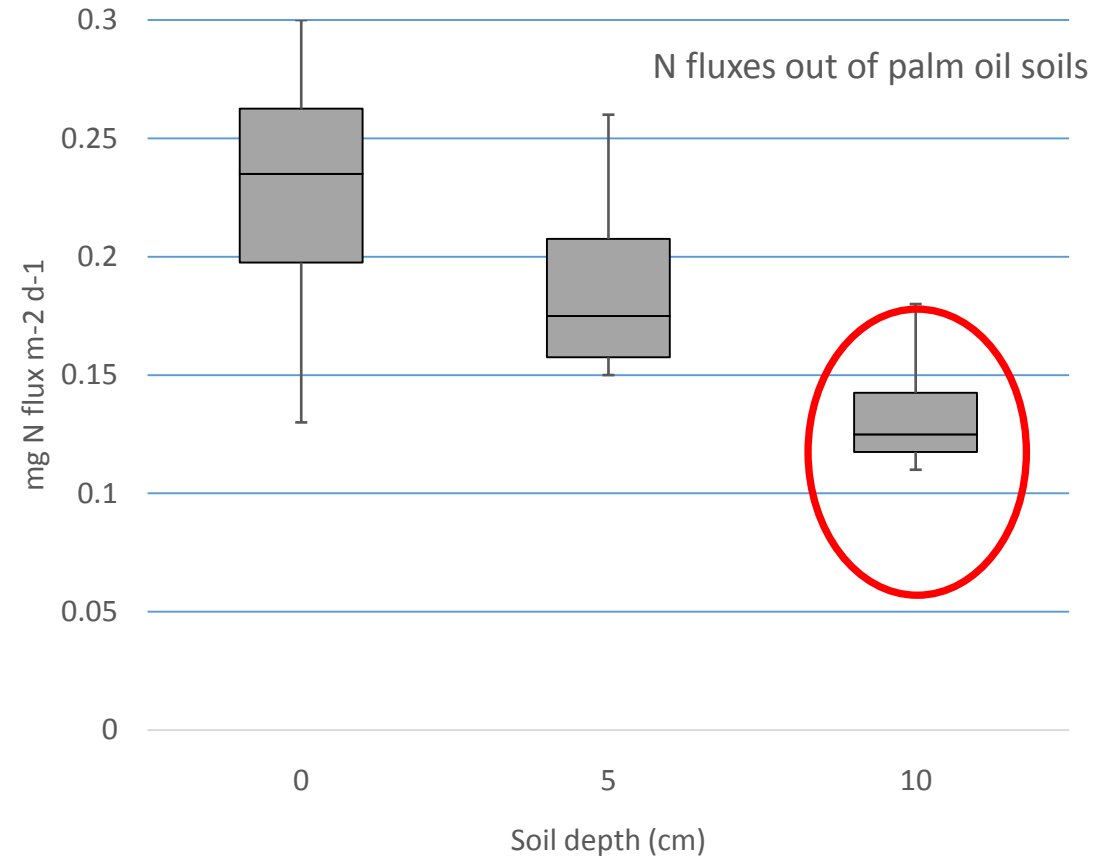
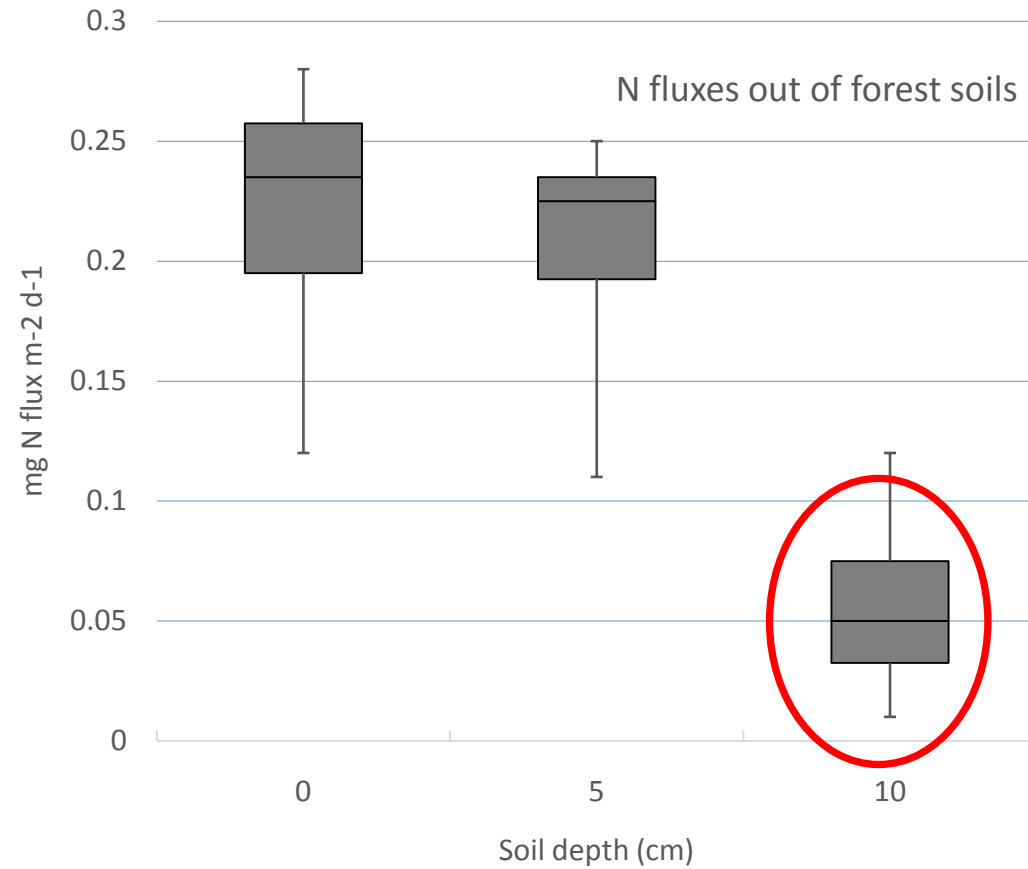
- Palm Oil plantation



# Research Approach



# N soil-atmosphere emission as function of soil depths



# Recommendation

- Need more research plot design with varying ages of palm oil plantation

# Future research

- Effects of long time fertilizer application on N fluxes of palm oil plantation on different soil characteristics (mineral soil and organic soil). Do two soil characteristics affect N soil cycle with the way.
- Impact of biochar addition on N stabilization in soils of palm oil plantation (research proposal for next year scheme from DIKTI)