

## Transforming Maize-Legume Systems for Climate Resilience

A project implemented in Zambia, Malawi and Zimbabwe

### Key Project Highlights

- The project conducted a Vulnerability Assessment across four target agro-ecologies in Malawi, Zambia and Zimbabwe
- CSA systems were piloted in 19 on-farm communities and combined in a Pilot Report
- Technologies were prioritized in three national and one regional stakeholder workshop and summarized in a Prioritization Report
- A Feasibility Study was written based on prioritized technologies covering Benefits of productivity, profitability, social and environmental benefits
- Project Outputs: Four Project Reports shared on [www.saaiks.ccardesa.org](http://www.saaiks.ccardesa.org)



Groundnut-pigeonpea alley cropping under conservation agriculture in Lemu, southern Malawi

### Results

- Most target communities in Malawi, Zambia and Zimbabwe are vulnerable to droughts, in-season dry spells, delayed on-set of the cropping season and heat waves
- Farmers adapt to these with different types of conservation agriculture practices, diversification, and drought tolerant seeds
- Climate-smart agriculture (CSA) technologies out-yield conventional agriculture systems by up to 60%
- Economic benefits are evident from the first year and save labour between 25 - 45 labour days /ha
- CSA technologies have greater Net Benefits, Net Present Value, Internal Rate of Return, higher Returns to Labour and Investment and a shorter Payback Time
- Results show lower soil erosion, higher water infiltration and available soil moisture but only a gradual increase in organic matter
- CSA systems are more climate-resilient under heat and drought stress especially on sandy soils
- Concept notes developed with targets to reach 1.3M direct and 4M indirect beneficiaries, with yield increases of up to 50% on maize and 30% on legumes and and increased carbon sequestration of 30% over conventional farming rates.

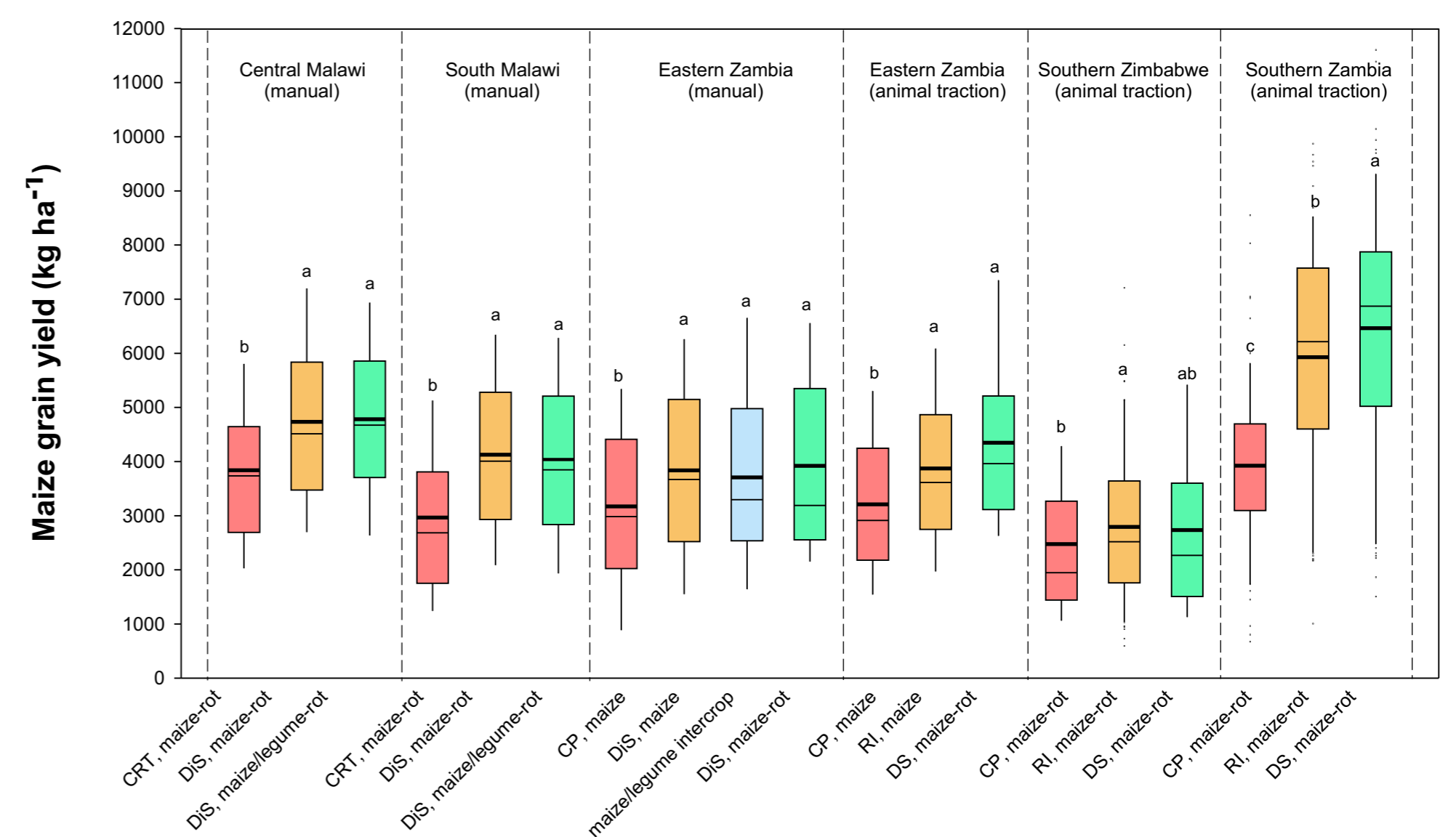


Figure 1: Maize productivity increases (in kg/ha) of different climate-smart agriculture technologies (shown as yellow, green or blue boxplots) as compared to the conventional agriculture practices (in red)

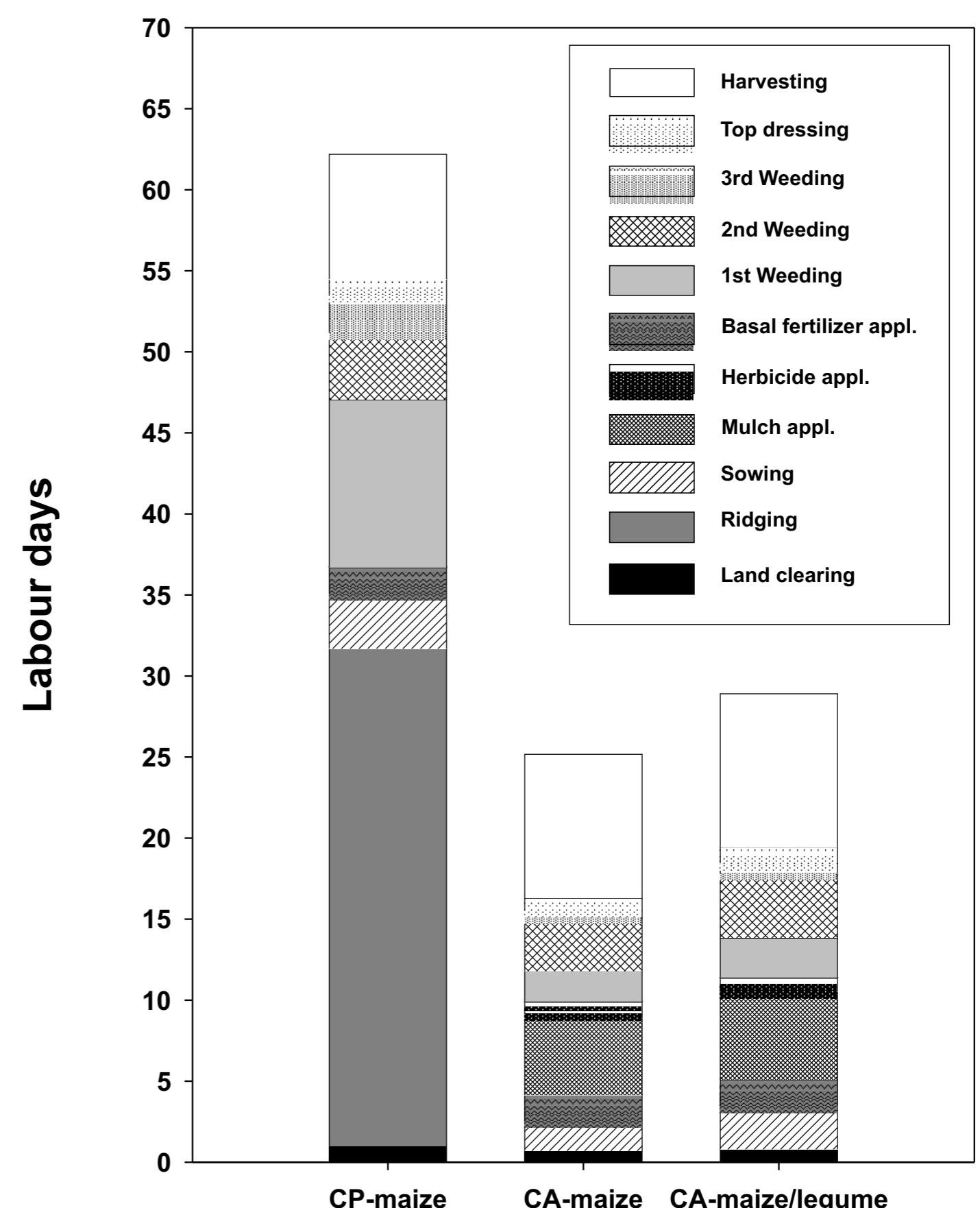


Figure 2: Labour savings when practicing climate-smart agriculture in Malawi. Total labour saved on land preparation is 25 labour days/ha and another 15 labour days/ha on weed control



Figure 3: Traditional farming based on manual tillage is labour intensive and labour reducing technologies using animal traction seeders benefits women. Crops grown under CSA increase productivity and profitability while reducing the impact on the environment