

# Farmers' Perception and Adaptation to Climate Change in the Central Dry Zone of Myanmar

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## BACKGROUND

- In Myanmar and in the Central Dry Zone (CDZ), climate change is observable: annual rainfall is decreasing, maximum temperatures are increasing, and monsoon seasons are shifting.
- Climate change related risks, e.g. water scarcity or rainfall variability are contributing to poverty and food insecurity in Myanmar, especially in the (CDZ).
- CDZ farmers are more vulnerable to climate change due to their limited adaptive capacity, poor access to knowledge and technology and low mechanization in agriculture.



Picture 1: Carrying drinking water for both human and cattle in summer drought condition (Source: Drought in the dry zone, Frontier Myanmar).

## QUESTIONS

- How do the farmers perceive climate hazards? What needs for adaptation do they derive from that?
- What kind of agricultural changes (crop varieties, practices, timing, etc.) do they apply to adapt to climate change impacts? How successful are these adaptation measures?
- What is the role of traditional knowledge and expert knowledge for adaptation?

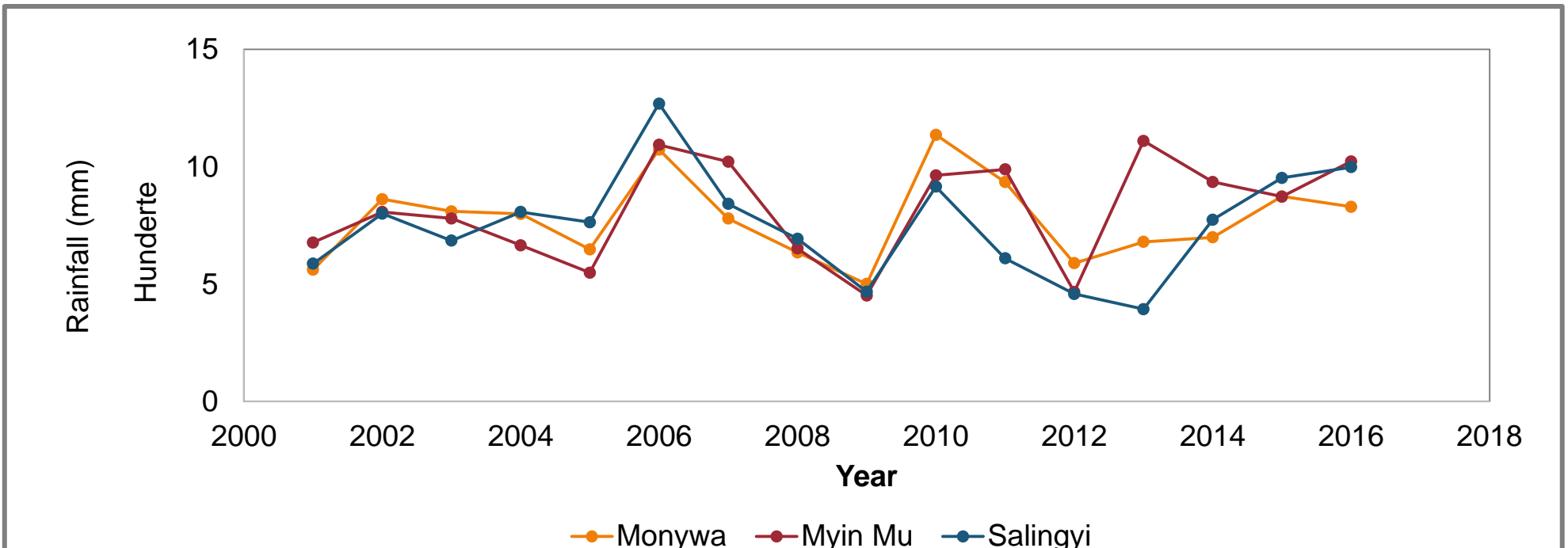


Figure 1. Trends of precipitation in the study area within past 15 years (Source: Department of Meteorology and Hydrology (DMH) and Department of Agriculture, DOA)



Picture 2: Conducting Participatory Rural Appraisal (Village hazard maps) with the farmers including the elders, the middle-aged and the youths (picture: A. Min)

## Key Findings

- Most farmers perceive climate change as a key constraint: they experience agricultural production being severely impacted, particularly by pests, water scarcity, extreme temperatures and erratic rainfall.
- Traditional knowledge and expert knowledge are both important for farmers' adaptation activities.
- The most successful adaptation strategies are changes in water management, farming practices, crop changes and crop variety changes.

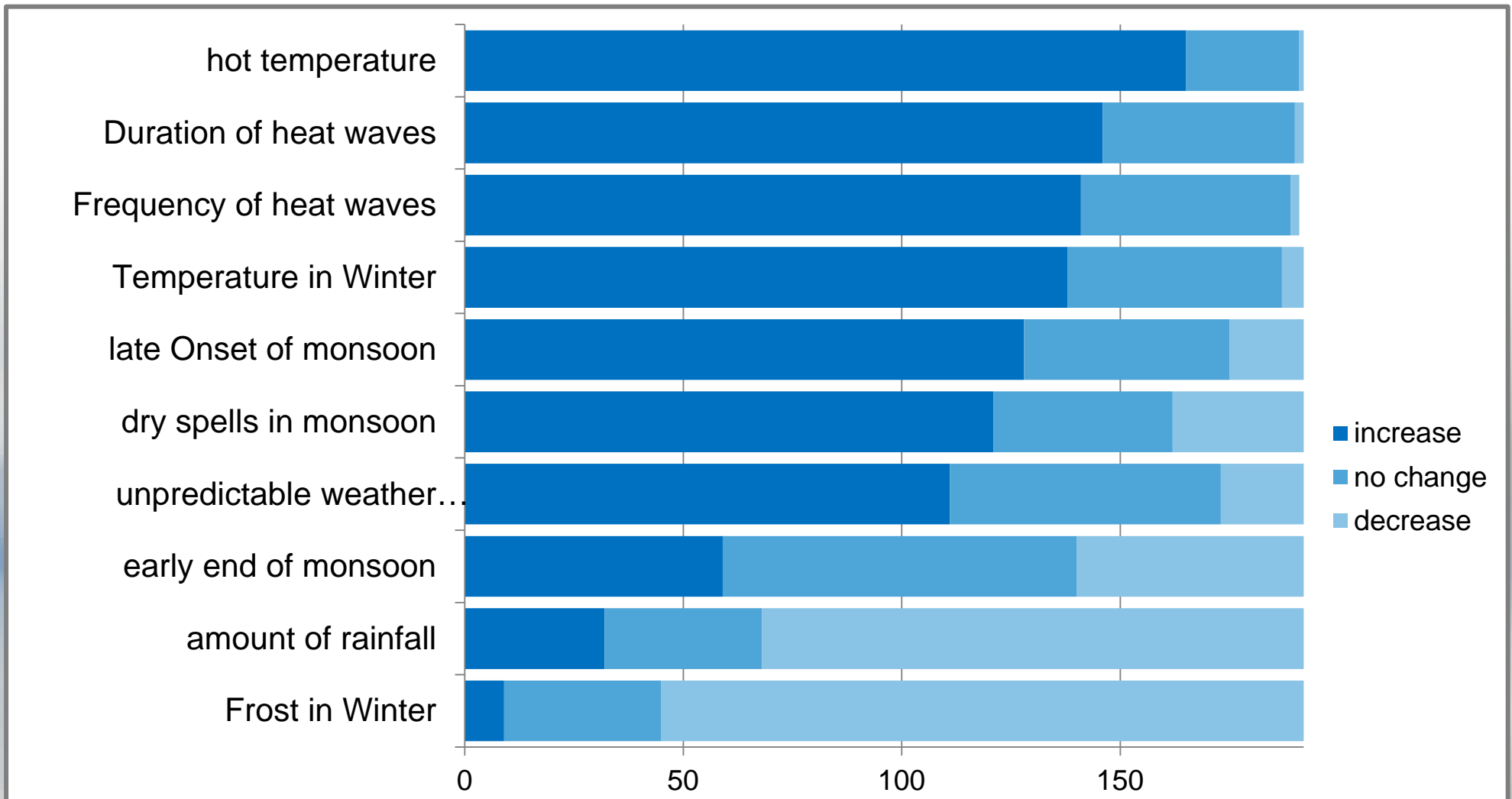


Figure 2. Perception of climate hazard trends (Source: own survey, n=192)

## METHODOLOGY

- Household survey with 192 farmers from three townships in the Central Dry Zone
- Participatory Rural Appraisal (PRA) of mixed farmer groups, including elders, middle-aged and the youth
- Key informant interviews with local farmers' leaders and experts from Department of Agriculture

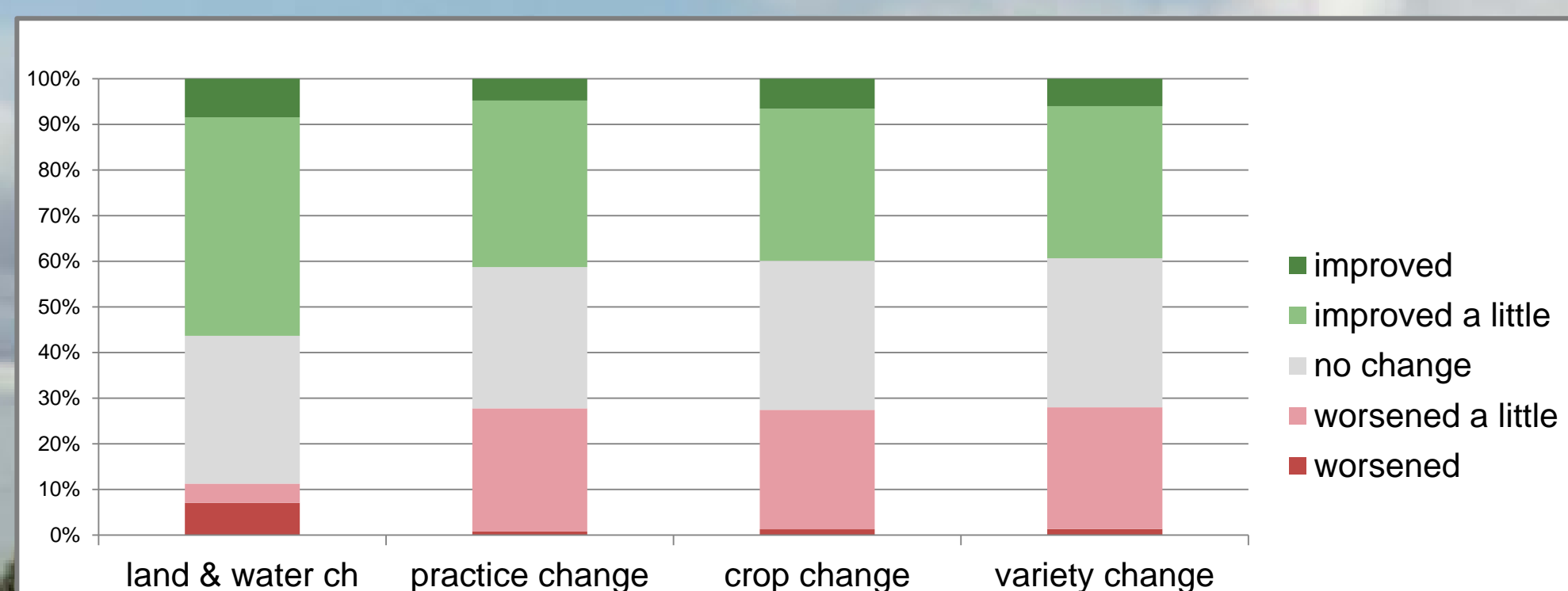


Figure 5: Success of adaptation activities (Source: own survey, n=192)

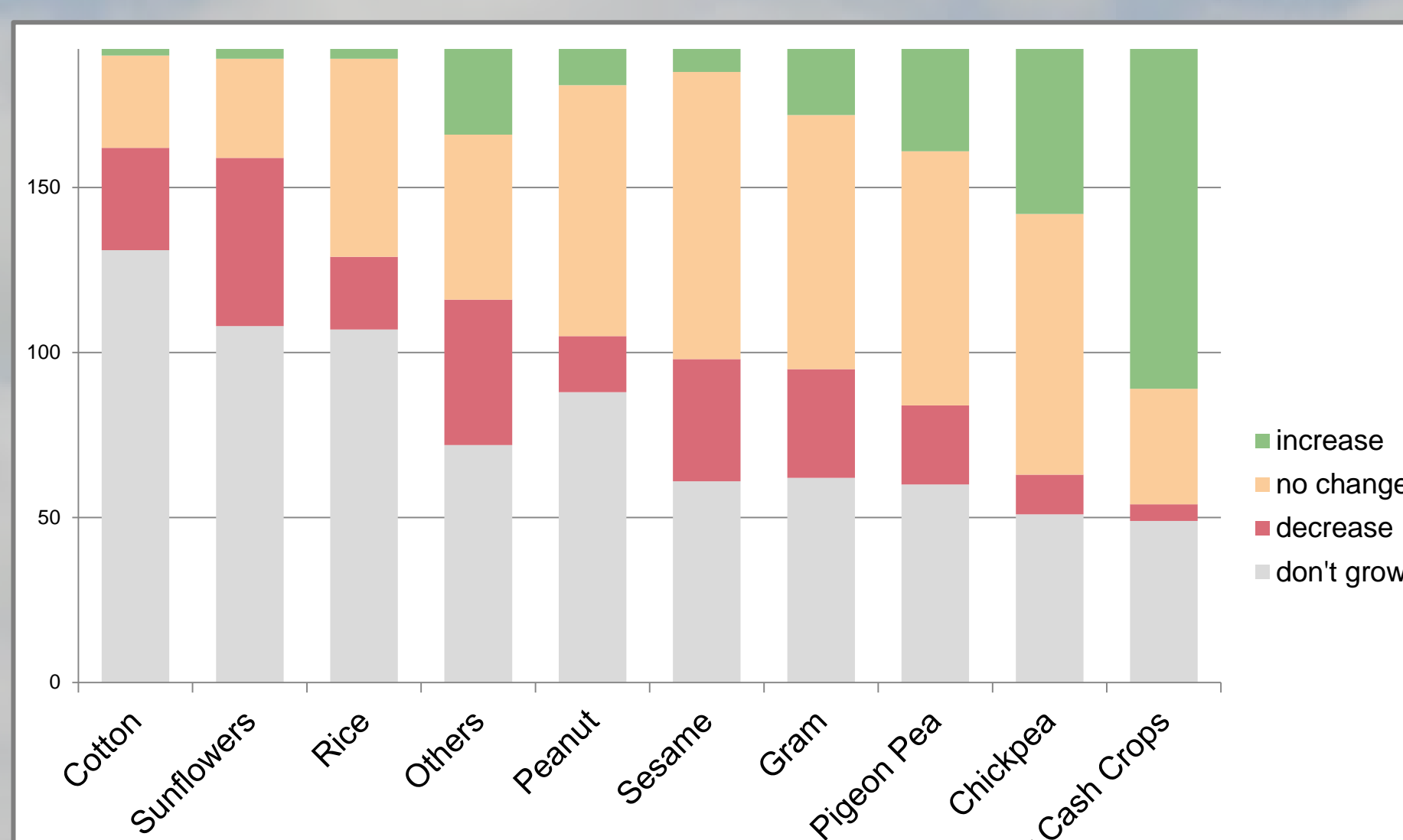


Figure 4: Crop changes between 2007 and 2017 (Source: own survey, n=192)

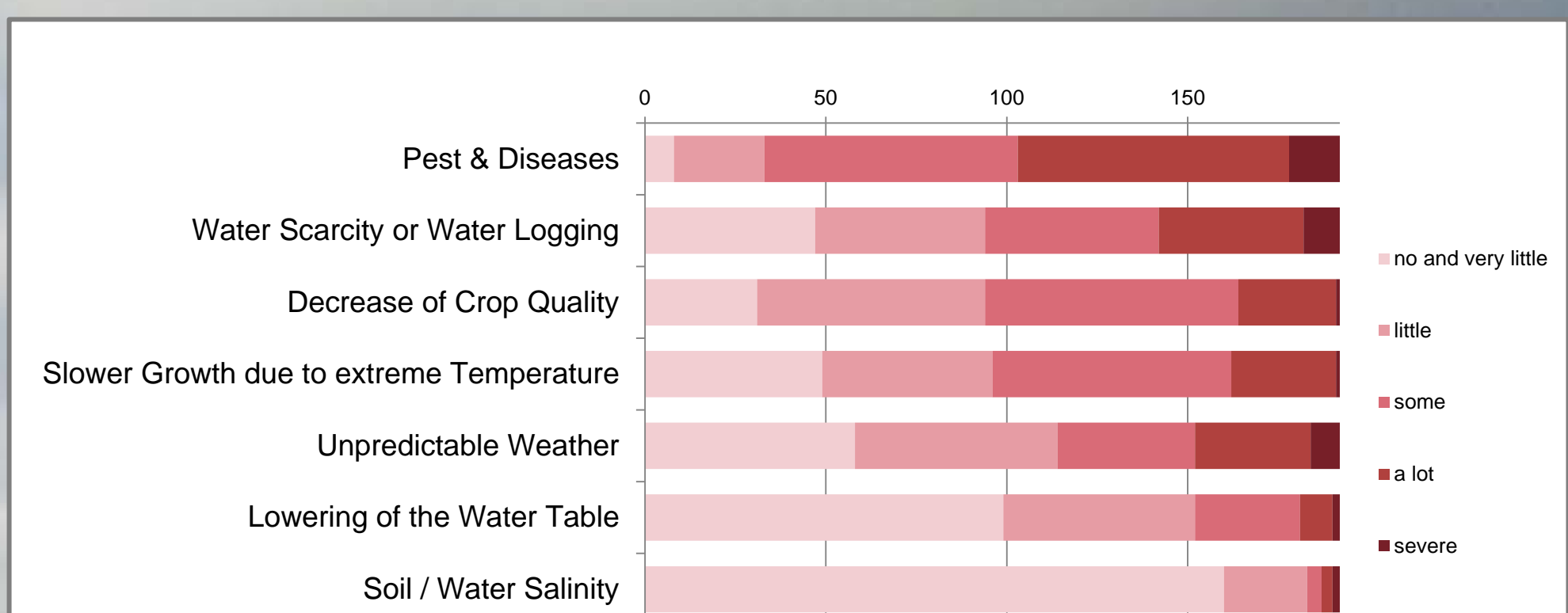


Figure 3: Perception of the respondents on climate change impacts in agricultural production and livelihood (Source: own survey, n=192)

## CONCLUSIONS

- Farmers' adaptation activities are strongly linked to their perceptions of climate risks and climate change,
- Farmers rely on both traditional as well as expert knowledge for adaptation, however there is also a lack of trust in expert knowledge.
- Thus there is a need for including traditional and local knowledge in agricultural innovation.

"Adaptation is an adjustment.....to alleviate adverse impacts of change or take advantage of new opportunities." (Adger et al. 2005)

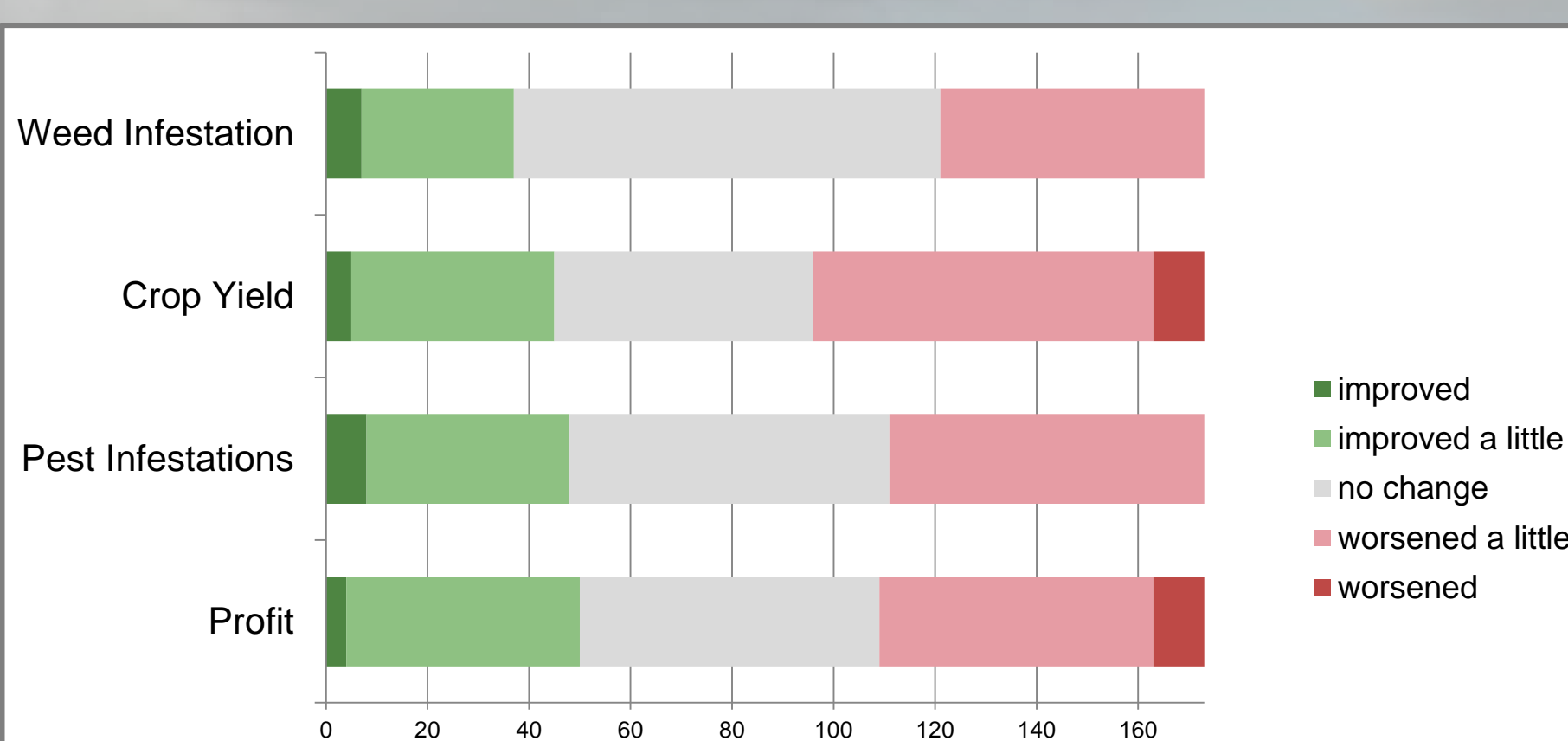
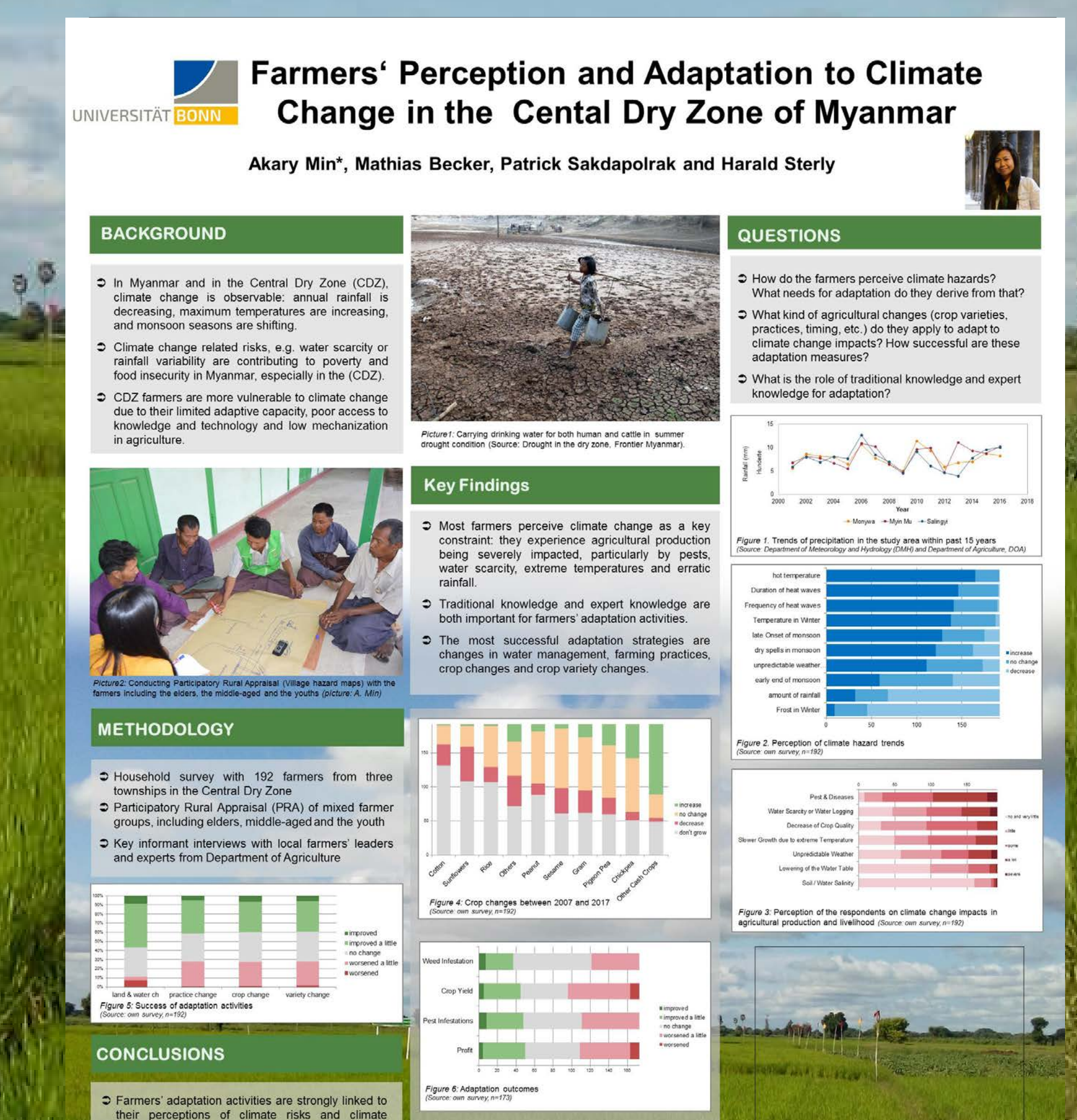


Figure 6: Adaptation outcomes (Source: own survey, n=173)

*"Our livelihood is absolutely relying on agriculture. But the weather conditions are no more suitable for crop production, and we are getting more indebted year by year.*

*When climate conditions are changing, we think that we must change as much as we can."*

(Tak Shan, 72 years old farmer, MyinMu)



**Help Yourself.**