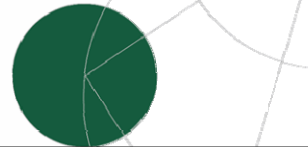




Linking climate factors and adaptation strategies in the rural Sahel-Sudan zone of West Africa

Presented by Ole Mertz



Co-authors and partners in AMMA WP 3.2

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Complete AMMA consortium has 59 partner institutions in Europe and Africa



Adaptation to climate change and variability in the Sahel

- Challenges for Africa and the Sahelian countries in particular: The combination of high climatic variability, poor infrastructure, economic poverty and low productivity
- Climate change will most likely make adaptation actions in the Sahel necessary (though climate change trajectories for the region are uncertain)
- This reiterates the need to **understand how farmers and pastoralists in the Sahel have coped with climate variability in the past** in order to **guide the strategies for adaptation in the future**
- Climate 'forcing' of livelihood and land use strategies are not well understood



Adaptation to the variable Sahelian climate

- Farmers and herders have always adapted their activities
 - 'seasonal forecasts' – signs from nature
 - flexible use of time and labour - migration
 - use of forest resources
 - wide choice of soil types and micro-environments
 - flexible use of animals and plants – crop-livestock integration
 - transhuman life style – mobility of livestock
- Droughts in the 1970s and 1980s created problems
- ... but farmers are still in business and agricultural production generally keeps up with population growth



Adapting to what? Specific research question(s) for AMMA WP 3.2

Based on empirical studies at multiple levels, how will development trends in the Sahel such as

- urbanization – migration, off-farm activities
- land tenure changes and capital investment
- trade – diversification of production and new technologies
- government policies and macroeconomic trends/changes
- land and resource degradation/restoration

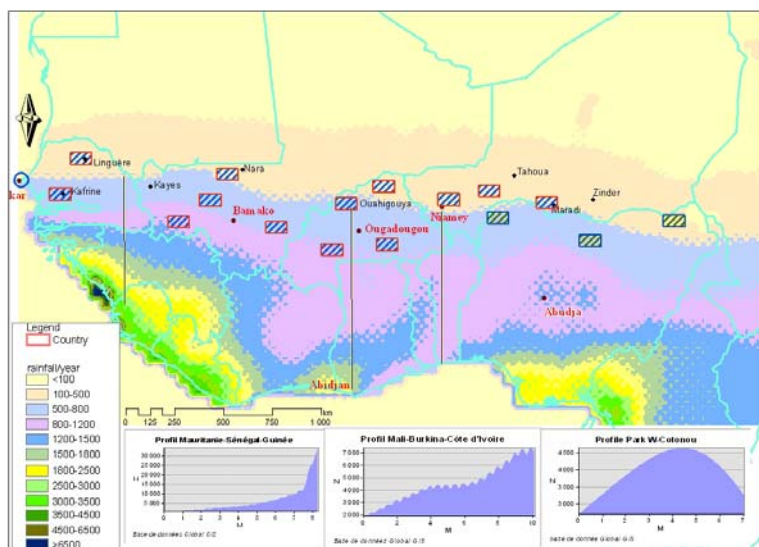
affect, positively or negatively, the **vulnerability** of households, communities and Sahelian countries?

How is their **relative weight** compared to impacts of climate change and variability (CCV)?

Which coping and adaptation **strategies** are **adopted** in the face of these changes or trends, and to what extent are these strategies **specifically a response** to CCV?



AMMA WP3.2 field sites



Methodology



> 40 group interviews

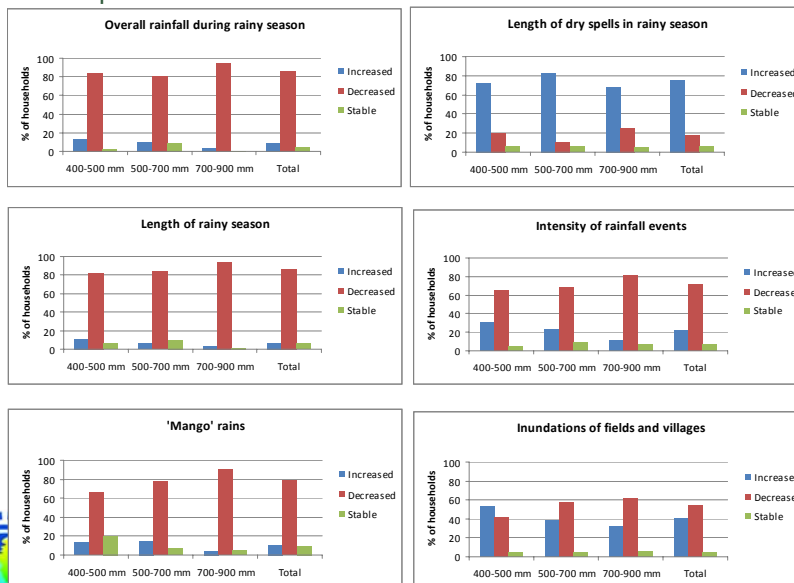
1354 household questionnaires - database completed March 2009

Land cover change analysis using Landsat images – to be ready by May 2009

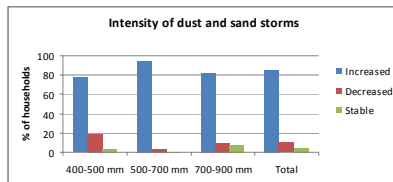
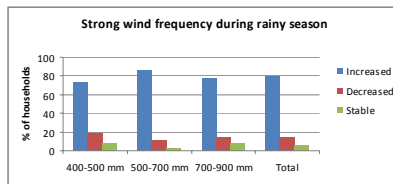
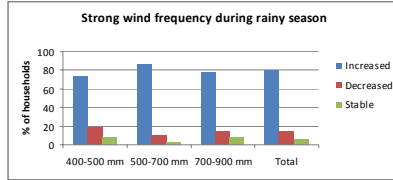
Analysis of National Adaptation Programmes of Action (NAPA)



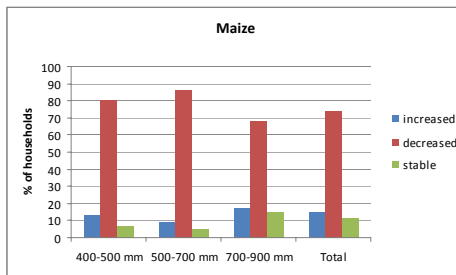
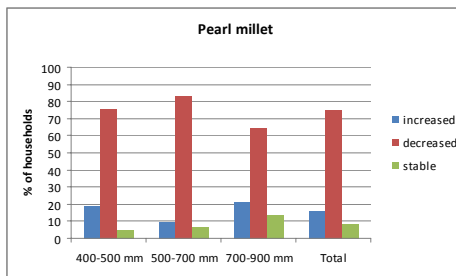
Perceptions of climate – rainfall



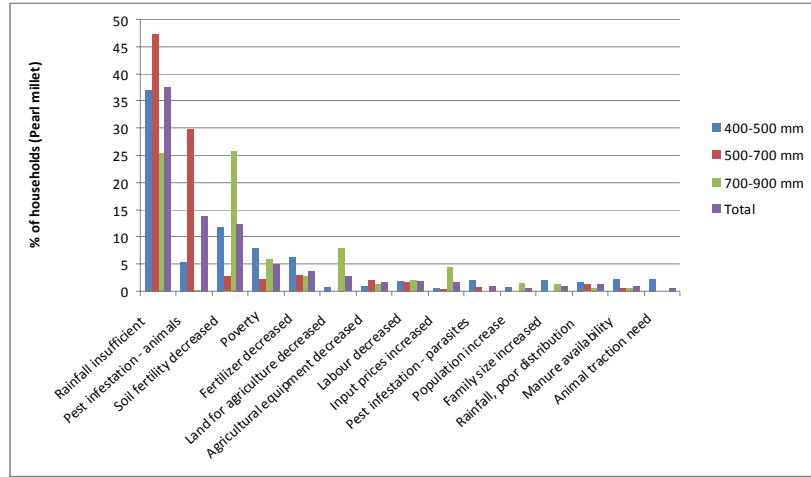
Perceptions of climate - wind



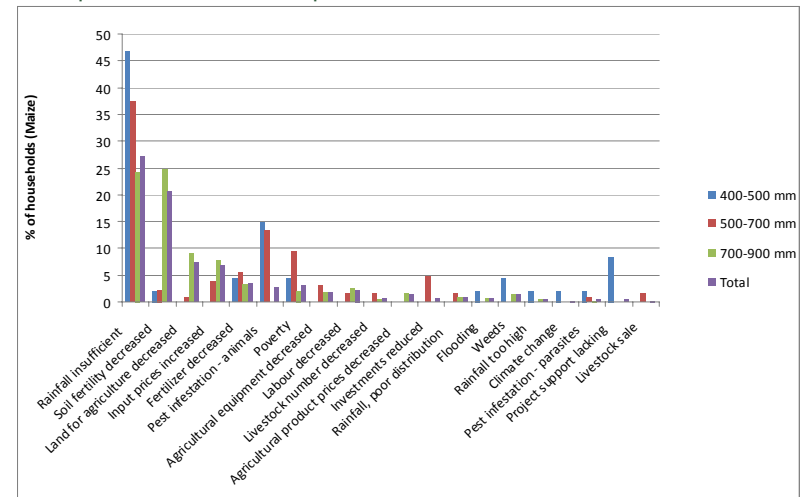
Perceptions of change in crop production



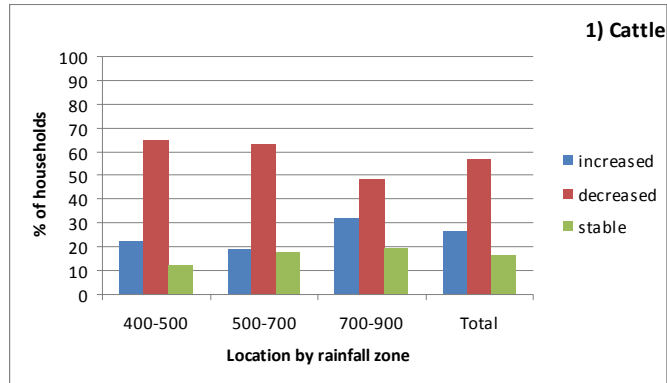
Perceptions of causes of production decline - millet



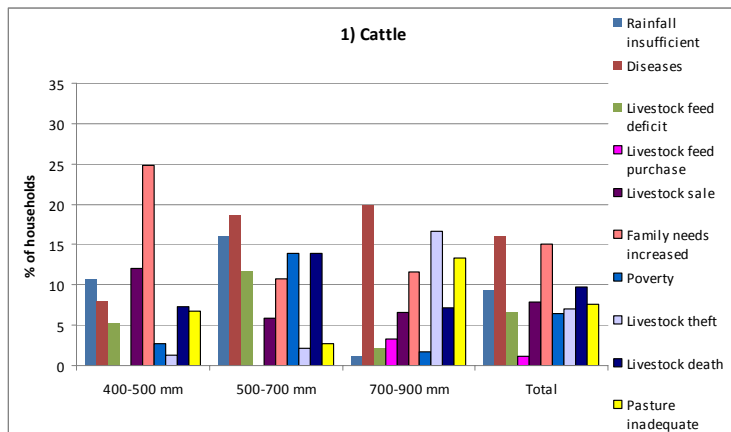
Perceptions of causes of production decline - maize



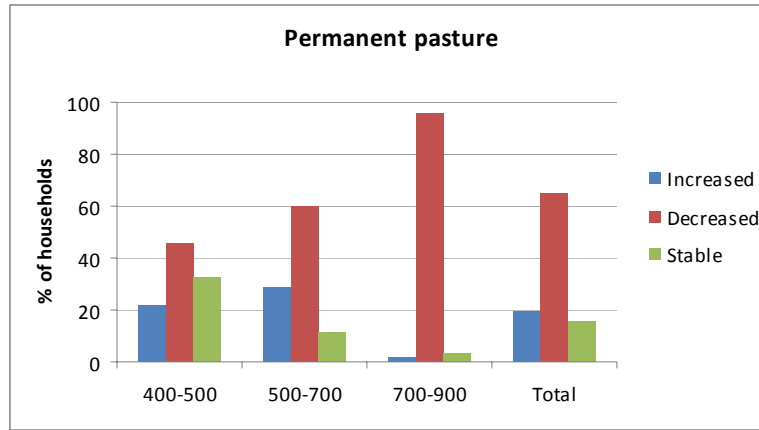
Perceptions of change in livestock holdings



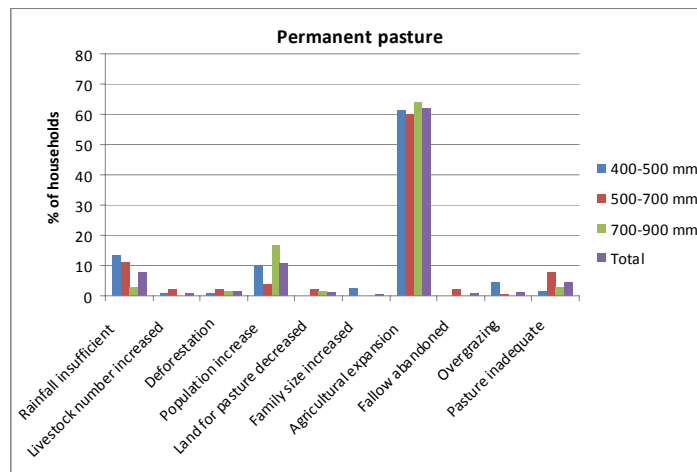
Perceptions of causes of decline in cattle holdings



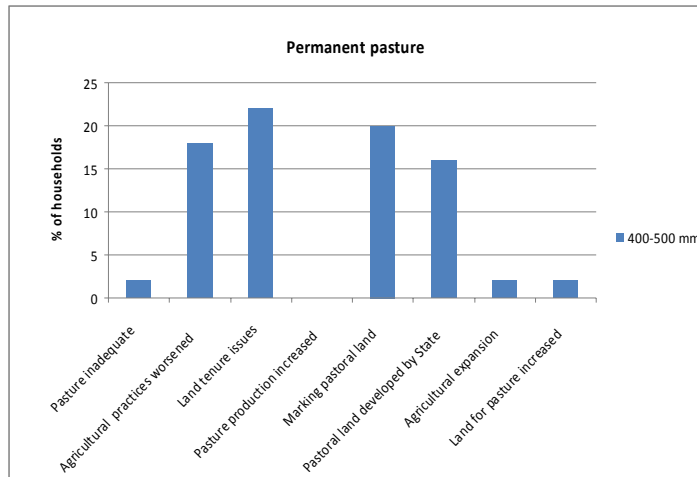
Perceptions of change in permanent pasture



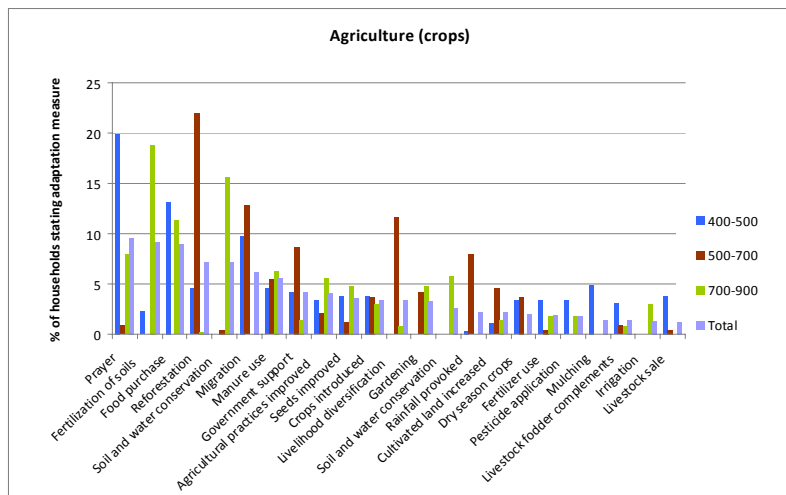
Perceptions of causes of decline in permanent pasture



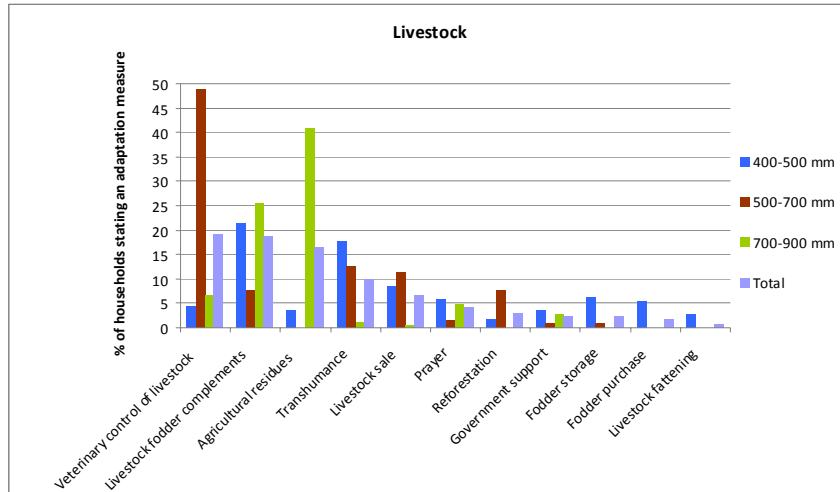
Perceptions of causes of increase in permanent pasture



Adaptation measures in response to negative impacts on agriculture



Adaptation measures in response to negative impacts on livestock



Preliminary conclusions

- The rainfed agricultural sector is perceived to be under significant stress with climate (rainfall and wind) as a main driver
- Few solutions are seen to this problem in the dry zone
- The livestock sector is less affected by climate parameters
- It (still) seems to be the most promising pathway for developing agriculture in the Sahel
- Adaptation projects proposed in the NAPAs focus on improved irrigation, new crop species and better agro-meteorological information
- These are not reflected in the adaptation options chosen by local people – perhaps due to ignorance or lack of access to such possibilities



Thank you for
your attention!

