



Regional climate change impact and adaptation assessment on agriculture in Austria.

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Global climate change will lead to shifts in climate behaviour and cause manifold impacts on ecosystems in the next decades. Through a change in climatic conditions and variability, for example, extreme weather events (heat waves, droughts, etc.) are likely to occur more frequently in different spatial and time scales in future. Since agriculture is one the man' activities more dependant on weather behaviour, the impact on risks of agricultural production is indeed one of the most important issues in climate change assessments. On the other hand potential adaptation measures can provide a big potential to reduce risk and potential losses. Compared to the manifold potential impacts of climate change on agroecosystems, potential adaptation measures are even more complex because of the high number of options available through the human factor. Results of climate change impact and adaptation studies often show considerable different results, depending on the spatial scale of regionalisation. However, for a decision maker only a high spatial resolution of related study results are useful as it can represent local conditions and its spatial variability much better.

A regional study of high spatial resolution (up to field level) was carried out for north-eastern part of Austria, focused on regional variabilities and trends and based on local production conditions for several important cropping systems. The results presented show for example an increase of water-limited production areas, and for many locations a decreasing potential production for high biomass yield (e.g for biomass

production) and grassland. Whereas other regions with ample water (and partly temperature limited conditions) will allow shifts to higher yielding crop production (e.g. corn instead of silo maize). Further there is an increasing impact of soil conditions (soil water holding capacity) for determining spatial variabilities. Several adaptation measures, depending on these local peculiarities are recommended.