



université PARIS-SACLAY

# GRAIN PRODUCTION TRENDS, OPPORTUNITIES, VULNERABILITIES, AND ADAPTATIONS IN THE CONTEXT OF AGRO- ECOLOGICAL AND CLIMATE CHANGE SCENARIOS FOR CENTRAL EURASIA

**Elena Lioubimtseva, Ph.D. en géographie environnementale, tiendra la prochaine conférence des vendredis de l'OVSQ, le 7 octobre à 12h15 dans l'amphithéâtre G. Mégie.**

Grain production trends, opportunities, vulnerabilities, and adaptations in the context of agro-ecological and climate change scenarios for Central Eurasia.

Elena Lioubimtseva, Department of Geography and Sustainable Planning, Grand Valley State University, USA

Russia, Ukraine, and Kazakhstan together are projected to surpass the European Union and the United States within the next few years in terms of their total grain exports and

wheat exports. High grain exports from Russia, Ukraine and Kazakhstan have been driven by low domestic demand more than an increase in productivity, which does not exceed the historical trend and is still much lower than the projected potential. Future of recultivation of the abandoned arable lands remains uncertain, given that most of marginal lands abandoned in the 1990s had low agro-ecological potential. Agro-ecological projections driven by climate change scenarios suggest that the grain production potential in Russia, Ukraine and Kazakhstan may significantly increase due to a combination of winter temperature increase, extension of the growing season, and CO<sub>2</sub> fertilization effect on agricultural crops, however the most productive semi-arid zone are vulnerable to precipitation decline and dramatic increase in drought frequency. The following sources of uncertainty need to be further examined in order to produce more reliable grain production outlooks: climate change scenarios and yield impact models, land-use and land-cover trends and their future impacts of the GHG emissions, CO<sub>2</sub> fertilization scenarios, future political, social and economic changes, and future development pathways of infrastructure, financial systems, land market development, and agricultural policies.