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# Socio-economic and land productivity analysis in Central Asia: CACILM SLM IS Inception phase results

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Sustainable land and water management is essential in the five Central Asia States (CAS), Kazakhstan (KAZ), Uzbekistan (UZB), Turkmenistan (TKM), Kyrgyzstan (KYR), and Tajikistan. The rural economies of CAC suffered catastrophic falls over the 1990-2000 period as these countries went from a centralized command system to a free-market system. These changes dwarf any long-term changes due to land degradation or restoration trends. To evaluate these changes in dynamics, three baseline years were chosen: (1) end of Soviet period (1990); (2)end of readjustment period (2000); and (3)the most recent typical year (2007 or 2006). Primary statistical data on demography and landuse, crop and livestock production at the administrative regions (oblast and their sub-divisions, or rayons) levels for KAZ (4 southern oblasts only), KYR, TKM and UZB were collected by National Support Implementation Units of SLM IS teams. Thereafter, within the Central Asian Countries Initiative for Land Management (CACILM) Program, the Inception Phase was implemented. The received data were processed and analyzed to reveal the dynamics of the following socio-economic characteristics: (a) Demographic indicators that include population change, annual population growth, population distribution by area of residence, vital statistics; (b) Agro-ecological potential and food resources that include area of arable lands and pastures, arable land per capita, total yield, crop yield, livestock production and increase and decrease of livestock; (c) Food security characteristics that include wheat and rice production per capita, actual production of wheat and needs per capita, livestock products production; and (d) Anthropogenic pressure on agro-ecological resources (population density per 1sq km of total area, population density per 1sq km of arable area, livestock density per 100 ha of pasture). According to our estimates, in **Kyrgyzstan** during 1991-2007, the arable land area was reduced in the range from 0.5% (Batken oblast) to 33.4% (Osh oblast). About 24.9% reduction of the pasture land was observed in the Osh oblast, while in the rest of the KYR rayons the pasture land was increased from 0.6% (Naryn oblast) to 12% (Chui oblast) and the cattle population density per 100 ha of pastures decreased in Talas and Chui oblasts. In **Uzbekistan**, during 1990?2007: a considerable reduction of pastures in Andijan, Fergana, Bukhara, Syrdarya, Namangan, Samarkand and Khorezm oblasts is observed. In Bukhara, Syr-Darya, and Samarkand oblasts the arable lands were considerably reduced (by 24.9%, 13%, and 11.1%, respectively). In other oblasts the reduction was less prominent. Only in two oblasts, Djizak and Kashka-Darya, increases in arable lands were registered by 6.5% and 1.2%, respectively. The analysis of dynamics of livestock and poultry population during 1990-2007 shows a significant increase of the cattle number (including cows), sheep and goats across all oblasts of the country. In **Turkmenistan**, during the 1991-2007 period, the cattle population has significantly increased nationwide (by 140% from 899 to 2,157.7 thousands). Comparing 2007 versus 1991 and the oblast level, the cattle population has increased in the range from 59.2% (Lebap velayat) to 289% (Dashoguz velayat). The sheep and goat population at the end of the analyzed period (at 2007) has increased by 226.4%. In **Kazakhstan** we present (as an example) the findings for the Kyzyl-Orda oblast (in Southern Kazakhstan). Here, during the 1991-2007 period, the crop land area has reduced by 3.1%. The changes were spatially inhomogeneous. For example, reduction of arable lands is observed in Aral (84.7%), Syr-Darya (16.4%), Kazalin (15.7%), and Karmakshi (12.3%) rayons, but it is increased in Zhalagash rayon by 25.8%. Detailed socio-demographic and land productivity analysis will be given in full paper. The studies in the framework of the CACILM project were supported by GEF Secretariat/Asian Development Bank.

Keywords: CACILM, land use, land degradation, food security, socio-economic analysis