

## 4. Landscape assessment and planning - LAP

### 4.4. Social-ecological system dynamics: challenges and opportunities to strengthen the science-policy interface for a sustainable land management

#### **Towards a regionally specific landscape planning models of multi-functional low-conflict land-use (case study of Charvak area, Uzbekistan)**

Natalia Ilinova\*, Merekalova K., Kharitonova T., Petrushina M., Andreev R., Andreeva A., Batalova V., Gasanov R., Kuzmichev I., Makarova E., Moiseev A., Murman A., Nechaev N., Podgorny O., Rostovtseva A., Safronova A., Shadchinov S., Solodyannikova V., Tikhonov A., Titov G., Ushakov N., Yalbatcheva M.

*Lomonosov Moscow State University, Russia*

*\* ilinova\_nv@mail.ru*

The landscape is a multi-component system that performs various functions. Functionality is an important concept of landscape ecology because it is capable of maintaining the landscape in a given state for a long time. The landscapes are determined by the interaction of natural and anthropogenic systems. This feature requires more careful public management and landscape planning work. Thus, the main idea of the theory of multifunctional landscapes is the possibility of combining different types of land use. The studied Chimgan-Charvak area of Uzbekistan is characterized by a fairly high proportion of the population employed in the agricultural sector and large areas of protected areas with a limited land use regime. These territories also provide important recreational facilities due to their landscape characteristics. Based on these inputs we conducted a study aimed at minimizing environmental conflicts with the maximum multifunctional land use. The objectives of the research were to detect conflicts in nature management, identify the opinions of local residents and officials and create landscape-planning solutions that could contribute to the rational use of natural resources in the region. As a result of field work 98 landscape descriptions were obtained and 296 questionnaires were collected from 17 settlements during a survey of the population (about land use dynamics and recreational preferences of local residents and tourists). The results allowed us to propose landscape-planning solutions that promote multifunctional and low-conflict land use in the region. The research revealed the possibility of organizing new recreation areas near the Pskem hydroelectric power plant under construction improving the safety of road transport infrastructure at key observation sites. It was identified the need to relocate solid waste landfills situated near agricultural lands to the less valuable and less vulnerable in landscape terms territories. The survey revealed large differences in the cost and quality of services of existing resorts. Planning solutions offer the organization of more budget-friendly recreation sites by creating a network of protected areas and ecological trails, as well as the development of ecological tourism. Almost all of the respondents have a positive attitude to the placement of renewable energy sources near their houses that makes it possible to allocate territories suitable for the construction of renewable energy stations.