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Recent changes in land use and natural resources use in the Kyrgyz Pamir

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The Kyrgyz Republic became independent from the former Soviet Union in 1991. The country has become suffered from severe poverty since the independence. The southernmost area of the Kyrgyz Republic is one of the least developed areas in the country. The largest issue in the area, therefore, is to bring economic development to mitigate poverty. The area consists of the Alai valley and two mountain ranges, i.e., the Alai Range to the north and the Za-Alai Range to the south. The valley floor starts at the altitude of 2,240 m in the western Alai area (Karamyk), and goes up the altitude of 3,160 m in the eastern Alai area (Sary Tash), which exceeds the cultivation limit. Transhumance is the primary industry of the entire Alai area. Sustainable use of land and natural resources is a key to mitigate poverty. This study first examined the characteristics of the current land use, and identified changes of land use before and after the independence focusing on pastureland. Then, this study examined the status of nature resources consumption, and discussed sustainability in the area.

The current land use map was prepared by re-digitizing the land use/land cover map of Baird (2008) for the purpose of re-categorization: 15 categories were re-classified into 6 categories of agricultural land, high mountain pastures, mountain pastures, forest, bare ground, and nival zone (snow and ice). The re-classified map shows that high mountain pastures dominate the majority of the land cover in the entire Alai area (88.3% in the western Alai, 48.1% in the central Alai, and 52.2% in the eastern Alai). Agricultural land ranges from 0.3% (western Alai) to 3.3% (central Alai). Non-usable land (bare ground and nival zone) occupies more than 40% in the central and eastern Alai, but it can serve as a good ecotourism resource.

Agriculture production is observed mainly in western and central Alai, and none in the eastern Alai. Hence, the eastern Alai needs more dependence on livestock and alternative income generation. The area of pasturelands (high mountain pastures and mountain pastures) in the eastern Alai, however, was smaller than other areas, especially western Alai. The number of grazing animals is also small in the eastern Alai.

The valley is suitable for grazing of sheep, goats, cows, yaks, and horses, which has been the largest industry in the area. Spatial patterns of grazing have changed after the independence in 1991. Local residents witnessed that more grazing is presently practiced near the villages. This could be a major factor causing soil erosion on the slopes near villages and roads. However, the interview surveys suggested that such soil erosion had occurred before the independence. This contradicts the general view by international donor agencies, which promote land degradation mitigation projects.

The interview survey conducted in 2008 and 2009 suggests that several wildlife species inhabit the Alai valley area such as ibex, lynx, bear, marmot and fox, although argali (Marco Polo sheep) is threatened by extinction. Ibex and marmots have been consumed in the valley. Local residents should realize that such wildlife could be ecotourism resources: it is, therefore, suggested to conserve the wildlife. On the other hand, more wolves have become attacking domestic animals since the independence.

The questionnaire survey in 2008 suggests that many residents favor development of ecotourism because of the far behind economy. Ecotourism to be developed in this area should be connected to agriculture, grazing, and artifact. Not only establishing ecotourism in the eastern and central Alai areas but also developing markets of agricultural products within the valley (supplying agricultural products from the western Alai area to the eastern and central Alai areas) would help augment sustainability in the entire Alai area.

Keywords: The Pamir, land use, poverty, natural resources consumption, pastureland, sustainable development