

Table S3. Links between ecosystem services class (C) (or group (G) when class contribution to the axes is not sufficient) and landscape units, according to the respective contributions of each variable to dimensions (axes) and their relative position on the contributed axes of the performed correspondence analysis. Table S3 summarizes the results of 6 correspondence analysis (Group of provisioning ecosystem services and landscape units; group of regulation & maintenance ecosystem services and landscape units; group of cultural ecosystem services and landscape units; class of provisioning ecosystem services and landscape units; class of regulation & maintenance ecosystem services and landscape units; class of cultural ecosystem services and landscape units)

Landscape unit	Ecosystem service
Provisioning	
Mountains	Wild plants for nutrition (C) Wild plants grazed by reared animals (C) Surface water for drinking (C) Surface water for irrigation (C)
Foothills	Cultivated plants (G)
Steppe	Cultivated plants for nutrition (C) Cultivated plants for fodder (C) Material from wild plants (medicinal use) (C)
Lakes	Wild plants grazed by reared animals (C) Surface water as a material (for health) (C)
Sand	Wild plants grazed by reared animals (C) Groundwater for drinking (C) Mineral substance for energy (uranium) (C)
River	Wild plants grazed by reared animals (C) Surface water as a material (for health) (C)
Betpak-Dala	Wild plants grazed by reared animals (C) Groundwater for drinking (C) Mineral substance for energy (uranium) (C)
Village	Reared animals for nutrition (C) Reared animals for energy (manure) (C) Groundwater for irrigation (C)
No landscape frontier	None
None	Wild plants for energy Wild animals for nutrition Surface water for watering animals Groundwater for watering animals
Regulation & maintenance	
Mountains	Maintenance and regulation of temperature and humidity (abiotic) (C)
Foothills	None
Steppe	Control of erosion rate (C)

Landscape unit	Ecosystem service
Lakes	Maintenance of physical, chemical, abiotic conditions (G)
Sand	Control of erosion rate (C)
River	None
Betpak-Dala	None
Village	Decomposition and fixing processes and their effect on soil quality (C)
No Landscape frontier	Maintaining nursery population and habitat (C) Seed dispersal (C)
None	Wind protection Pollination Regulation of temperature and humidity (biotic) Filtration/sequestration/storage/accumulation by plants
Cultural	
Mountains	Characteristics of living systems that enable aesthetic experiences (C) Natural, abiotic characteristics of nature that enable intellectual and representative interaction: aesthetic experience (C)
Foothills	Characteristics of living systems that that enable activities promoting health, recuperation or enjoyment through active or immersive interactions (C)
Steppe	Physical and experiential interactions with natural environment (G) Intellectual and representative interactions with natural environment (G)
Lakes	Natural, abiotic characteristics of nature that enable spiritual, symbolic and other interaction (C)
Sand	Characteristics of living systems that that enable activities promoting health, recuperation or enjoyment through active or immersive interactions (C)
River	Natural, abiotic characteristics of nature that enable active or passive physical and experiential interactions promoting health, recuperation or enjoyment (C)
Betpak-Dala	None
Village	Natural, abiotic characteristics of nature that enable intellectual and representative interaction: aesthetic experience (C)
No Landscape frontier	Characteristics or features of living systems that have an existence value (C) Characteristics or features of living systems that have an option or bequest value (C)
None	None