The Kashmir Prehistory Project is an ongoing collaboration between the University of Sydney and the University of Kashmir aiming to understand the early development of agriculture in the Kashmir Valley, India. The project has now some of the oldest directly dated West Asian (wheat, barley, lentil, pea) and East Asian (broomcorn millet) crops within the same archaeological context, ranging around 2400-2200 BCE. The presence of these crops raised questions regarding the relationship between the Neolithic farmers of the Kashmir Valley and other agro-pastoralist populations of the "Inner Asian Mountain Corridor". This chain of ranges comprises the Hindu-Kush, Pamirs and Tien Shan, spanning from Afghanistan through Tajikistan, Kyrgyzstan and Kazakhstan and into northwest China.

My doctoral research aimed to investigate the long-term patterns of land-use and ecology at middle and upper elevations of the Kashmir Valley, between 2500-3100 metres above sea level. These areas are composed of extensive conifer forests, middle altitude pastures and sub-alpine meadows. These mountain areas are also a significant economic and cultural landscape, where seasonally mobile present-day pastoralists modify the forest ecotopes, maintain rangelands for grazing, and trade with local farming populations. Remains of Buddhist rock-cut reliefs dating to the Iron Age Kushan Empire, Mughal caravanserais and still used Hindu pilgrimage routes attest to the long-term cultural significance of this landscape.

In collaboration with Prof. Mumtaz Yatoo from the University of Kashmir, the project sampled sediment cores from wetlands, peat bogs and mires at middle and high altitudes on the western flank of the Kashmir Valley. To understand the ways that people have modified and used these landscapes we examined changes in deposited pollen and fungal spores, charcoal influx, and mineral sediment properties. These proxies were able to indicate changes to the local vegetation community, fire history and erosional processes that may be linked to past human activity. To interpret these changes, a robust chronological age-depth model needs to be built, based on absolute dating of deposited materials. Generous support by the NEAF through a grant-in-aid allowed the acquisition of a series of radiocarbon AMS dates for these models.

The results indicated a series of intensified landscape modification and use in the mountain areas, with the earliest evidence at the high-altitude Tosa Maidan site at around 1700 BCE, during the late Neolithic period. Intensified herding and middle-altitude agriculture was indicated by 200 BCE, consistent with archaeological evidence for expanded settlement during the Kushan period. Discontinuity in land-use periods also indicated a flexible and shifting social-ecological system that appears to respond to arid periods throughout the Holocene. We also argue that the long-term evidence for agro-pastoralist ecology in these records challenges notions that these mountain forests and meadows are "natural" landscapes and that grazing systems be incorporated into future conservation plans. Thanks to the support from NEAF we have recently published the project findings in *Quaternary International* and *Scientific Reports*. We hope that the methods developed and used in this research will be applied throughout mountainous Central Asia.

Rock-cut Buddhist niche, water feature and engraved "stupa", located at 2700m ASL, Aru.

Mughal period caravanserai, on the road towards the Punjab.

(left) Prof. Mumtaz Yatoo and UoK students coring near the Kushan period settlement of Ahan.
(right) Prof. Ajmal Shah and master's student logging sediment cores at high altitude Tosa Maidan.

Present-day grazing at Tosa Maidan. Historical accounts describe Mughal way stations as controlling this this pasture as an important entry point to the valley. Our data show the likely anthropogenic clearing of birch forest and bringing in of animals by 3700 years ago.