

Unsustainable rural energy use is an important factor of ecosystem degradation. Harvested trees, shrubs and subshrubs include forage plants for livestock and wildlife. Burning of manure reduces the fertility of agricultural lands. Absence of renewable and sustainable electricity access is one of the main development barriers in rural areas. While electricity from small renewable sources is still insufficient to replace biomass as energy source for heating and cooking, it improves the rural standard of living, allows for social and educational activities and is a prerequisite for non-agricultural income generation and value chains.

The upper watersheds of the Panj-Amu River Basin due to climate position and naturally scarce vegetation cover are prone to natural disasters like flash floods and landslides. Degradation of rangelands and woodlands and their transformation into arable fields have accelerated these risks and climate change contributes to more frequent disastrous events.

These combined issues negatively impact agricultural production, food security, economic activity, health, and infrastructure while increasing migration. Destructive impacts on livelihoods particularly affect the vulnerable rural population, especially women and youth. Under conditions of food shortage women and children are most prone to malnutrition. They bear most of the burden of collecting fuel and have to walk longer and longer distances for this necessity. In cold winters acute shortage of heating energy forces poor people to cut fruit and nut trees from orchards, thus causing further shortage of valuable food. Lack of electricity seriously hampers education opportunities and access to information, which are key for the development of perspectives for the younger generation, especially for girls, for empowerment of women, for health care and finally for a balanced demographic trend.

Despite recognition by the Government, climate change adaptation tools such as climate data at various spatial and temporal scales, climatic data inventories and climate adaptive management plans remain at an infancy state and their implementation is very limited. The present program will therefore apply an integrated approach including i) climate change vulnerability assessment and climate change monitoring, planning, capacity development and knowledge management; ii) enhanced management of agriculture, ecosystems and associated biodiversity for conservation and use of their adaptation capacity to climate change, including the balancing of landscape water household and disaster prevention; iii) improved supply and increased efficiency of rural energy in form of renewable and sustainable electricity (hydropower, solar and wind); altogether contributing to income generation, sustainable improved livelihoods and reduced migration pressure from rural areas. This program intervention focus on the Panj-Amu River Basin based on environmental and socio-economic analysis of this area.

## 2 RISKS AND ASSUMPTIONS

Risk	Risk Level H/M/L	Mitigating Measure
Low institutional capacity at national and local level hampering project progress.	M	Capacity building activities will support the gradual strengthening of technical and management skills of key institutional stakeholders.
Reluctance of land-users to accept and adopt new approaches and technologies for more sustainable use of ecosystems and conservation of biodiversity.	M	Communities will be involved in the development and implementation of interventions ensuring interest through practical demonstrations, thus ensuring the sustainable satisfaction of their livelihood interests in the frame of the capacity of the landscape; awareness on sustainability and limits of nature resource use as