Case Study

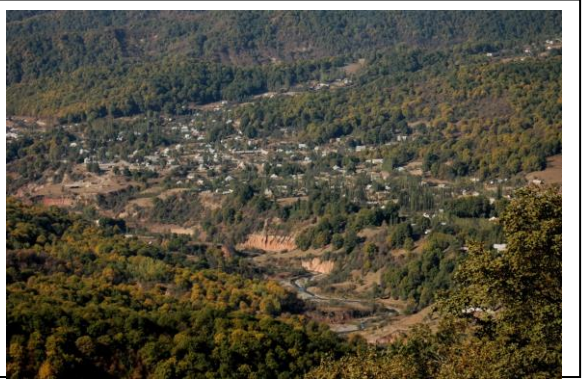
Building resilience in the fruit and nut forests of Central Asia to adapt to a changing climate

Developing a climate change adaptation plan at the site level in Kyrgyzstan

Key words: climate change adaptation, forest, local community, Kyrgyzstan

Synopsis

FFI and partners conducted a series of workshops and consultations to consider the impact of climate change at our project site within the globally important fruit and nut forests of Kyrgyzstan. With input from specialists and the local community, the likely impacts and potential responses were identified and prioritized in the resulting climate adaptation plan.



Location

The project site of Kyzyl Unkur is located on the foothills of the Ferghana ridge in Jalal Abad region of Kyrgyzstan. Kyzyl Unkur leskhoz (forestry unit) is 57,915 ha, of which about 29,000 ha (50%) is forest, mainly of natural origin, with the majority of the remaining land being pasture (c. 19,800 ha) and over 8,000 ha being rocks, stones and landslides. There are about 5,000 people living in the villages within Kyzyl Unkur, whose livelihoods depend on forest and other natural resources. People keep livestock and collect walnuts and other forest products.

Threats to the forest include livestock grazing, firewood collection and forests pests, with inadequate protection and management by the forest service, insufficient collaboration with other local authorities, and few alternative opportunities for local communities. FFI's overall programme vision for the area is that '*the globally important fruit and nut forests of Kyzyl Unkur and Kara Alma, and associated biodiversity and ecosystem services, are effectively conserved through collaborative management and sustainable use, whilst local women and men are empowered to diversify and develop sustainable livelihoods, thus reducing their vulnerability to the impacts of climate change and contributing to poverty reduction*.' Project strategies include capacity building of the leskhoz with training and resource provision; promoting sustainable livelihoods through empowerment, community organisation, skills training and support to local enterprise initiatives; directly addressing threats to the forest and promoting forest regeneration.

Background to FFI's climate adaptation planning approach

There is now strong evidence for the reality of climate change as both a current phenomenon and as a future threat, and it is clear that many natural systems will be seriously affected. Although significant impacts from climate change may be some decades away in many areas, climate change adaptation planning is being seen as increasingly important, to enable local stakeholders to formulate practical 'no regrets' measures that reduce potential risks to natural landscapes and the goods and services they provide. The aim of climate change adaptation planning is to build and enhance resilience to change, through a process that teases out key impacts that are likely to be experienced and deducing which of these can be actively managed, and how.

Fauna & Flora International (FFI) has put together a package of resources to specifically assist site-level climate adaptation planning. We are convinced that while high-level predictive modelling and policy change is essential to tackling the global issue of climate change, so too are small-scale, local level initiatives, to help people make informed decisions in their immediate environments.

Feedback from participants on the FFI climate adaptation planning approach:

"I liked the workshop's methodology."

"I liked that we looked at all details concerning climate change."

"The workshop is multifaceted and brings many ideas, which overall are implementable."

This work has been moving forward as part of FFI's work within the British American Tobacco Biodiversity Partnership (BATBP). Over the five years 2011-2015 FFI is piloting the climate adaptation planning tool at site level, and refining the approach specifically in the context of complex agricultural landscapes. This is with the aim of building stakeholder capacity at the local level to increase landscape resilience and maintain biodiversity and natural systems.

The climate adaptation plan process

A series of workshops and other meetings were conducted based on the FFI planning process and tools:

- An initial workshop was led by FFI UK staff with FFI's Kyrgyz team, partners, specialists and other stakeholders in Bishkek to introduce the FFI Climate Adaptation Planning Toolkit (which had been translated into Russian), gather preliminary information, agree likely climate scenarios and consequences and identify potential impacts of climate change for the fruit and nut forest and communities.
- Community meetings were held at the project site (Kyzyl Unkur leskhoz), using various participatory tools to explore the livelihoods, assets and resources, and vulnerabilities of different groups within the community.
- A general Situation Analysis exercise for the project site was conducted with project partners in Bishkek.
- A second climate adaptation planning workshop was held with FFI staff and partners, based on the revised FFI toolkit. The adaptation measures identified were grouped into strategies, with consideration of their feasibility and effectiveness, the relevant stakeholders and their capacity to deliver, and whether they were long or short-term.
- A Tree Vulnerabilities Analysis was conducted with partners and specialists to assess the degree of exposure, sensitivity and adaptive capacity of a range of important tree species to identified climate factors such as increased minimum temperature, increased winter precipitation and increased pests and disease.
- A dissemination meeting was held with a variety of stakeholders in Bishkek to share preliminary findings and learn about others' work.
- A community meeting was organized to share information about predicted climate change with local people and to jointly explore and validate likely impacts and potential adaptation responses, using group activities to stimulate discussion.

In between the various workshops, FFI staff collected and collated information, contacted specialists, wrote-up outputs and drafted the site climate adaptation plan.

Results

In general, the impacts of predicted climate appear negative. For example, increase in summer temperatures and decrease in precipitation will be bad for the health of people and livestock, and for the productivity of the forest, pastures and some crops (some crop harvest may improve due to the longer growing season). Incidences of intensive rainfall and heavy snow will cause floods, debris flow, landslides and erosion, damaging infrastructure and the forest ecosystem. For trees, the overall warming will result in earlier blossoming, with consequent potential damage by frost and/or intense rain. Walnut appears particularly vulnerable, which is of serious concern given its status as a key species in the forest and the importance of the walnut harvest to local people's income.

Both the forest and pasture habitats are currently under significant pressure and are degrading, making them less resilient to climate change. Institutions are not working together on the issue of grazing, and in general authorities need to collaborate more on land-use and forestry planning, including for climate change impacts. Another key threat, likely to be exacerbated by climate change, is pests and diseases, and there are considerable knowledge gaps in this area.

The climate adaptation plan proposes response measures grouped under the following strategies:

Increase awareness among local inhabitants about climate change	Improvement of a) management and b) infrastructure of pastures
Climate change-adapted planting in the forest	Improved collaboration between relevant local and national government agencies
Sustainable livelihoods	Bio-control of pests and diseases
Capacity building of forest residents	Promote favorable conditions for pollinators
Eco-monitoring and research	Alternative sources of energy
	Infrastructure

These strategies now need to be refined into practical actions that can be taken forward, both by FFI's continuing programme and by local stakeholders (forest service, local authorities and the community). Whilst some of the strategies are already being implemented, further awareness raising, capacity building and support will be needed to ensure climate adaptation is adequately integrated into future plans and practices.

Lessons learnt

This was a new topic for FFI's Eurasia team which, together with the fact that the site was a pilot for FFI to trial and refine its approach and resources for climate adaptation planning, meant that the methods and expected outcomes were not totally clear at the start. The process became rather drawn-out, with intermittent activity, due to the other work commitments of the staff involved. It is recommended that the climate adaptation planning process should be conducted over a much shorter time period of a few months, to maintain focus and momentum, with an identified coordinator in the local team to drive the process forward. Adequate staff time needs to be allocated to collecting preliminary information, meeting with specialists, exploring issues with the local community, following up between workshops, including on identified knowledge gaps, and drafting clear and accessible outputs and reports.

The actual adaptation planning workshops are most effective with a fairly small group of FFI staff, partners and local stakeholders (as appropriate) who know the site well, informed by separate consultations with specialists and the community. In order to meaningfully engage local stakeholders, the climate change and adaptation concepts need to be clearly explained in simple and practical terms, although awareness and understanding of climate change is fairly widespread. The diagrams produced through the process, for example when mapping climate impacts onto the current situation analysis, become rather complicated and unwieldy, although this is perhaps inevitable given the complexity of the issues.

The purpose of the climate adaptation planning exercise, which is likely to be different for different site contexts, needs to be agreed as part of the process. Climate adaptation planning is useful as a way for FFI and partners to 'climate proof' projects, enabling due consideration of climate change issues and impacts and ensuring plans and activities increase resilience to change, incorporate 'no regrets' adaptation measures and do not inadvertently promote maladaptation. In other cases, there may be a wider application for the process, with the adaptation plan being used to directly inform and influence the plans and practices of other stakeholders and decision-makers at some sites.

Want to find out more?

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