



# Conserving Threatened Fruit and Nut Trees, Tajikistan



Dashitum Nursey | Credit: FFI

## A progress report for the Stanley Smith (UK) Horticultural Trust

**MAY 2021**





## BACKGROUND

Tajikistan's fruit and nut forests are home to snow leopards, bears and jungle cats as well as the wild ancestors of commonly known almonds, apples, pomegranates, walnuts and Critically Endangered pear species. Being highly diverse and harbouring a series of endemic species, these forests are of global conservation importance.

As well as providing a significant reserve of genetic diversity, the forests also provide important ecological services, and play a crucial role in the livelihoods of local people, especially for 700 households living within the reserves, many of whom live off less than \$2.5 a day. As a result, the fruit and nut forests are under severe pressure from firewood collection, hay-making, livestock grazing and over-harvesting. The harvest and sale of fruits and nuts is their main source of day to day income. However, if managed correctly, these forests can also help to protect people from soil erosion and landslides (both of which are exacerbated by climate change) by stabilising soils. Tajikistan is the country most vulnerable to climate change in Europe and Central Asia (World Bank, 2011) and the survival of these forests is critical to help people and wildlife adapt to climate change's worst impacts.

Establishing nurseries and horticulture are considered the main solutions for increasing the population of rare threatened fruit and nut trees and diversity in the forests. However, there is currently little policy focus or awareness on planting a large variety of tree species (or consideration of the right species for the right place). We know that planting a larger range of species is better for wildlife and biodiversity, as it provides people with a wide range of products, ensures people do not become too dependent on the use of one tree species for their livelihoods and generally helps to create more climate resilient forests.

With the support of the Stanley Smith (UK) Horticultural Trust, Fauna & Flora International (FFI) and our partners planted 14 threatened species of fruit and nut trees, as well as fast growing non-fruiting species. We have also expanded two nurseries to grow the population of rare and threatened species. We are incredibly grateful for your support. This report outline the activities that were over the past six months with your support.

# PROGRESS UPDATE

## Dashtijum Reserve

With the support of the Stanley Smith (UK) Horticultural Trust, FFI and our partner, the Forestry Service Units of Dashtijum reserve, have been working to propagate threatened fruit and nuts species and increase the spread and population of these species. In the last year, we purchased 220 metres of net and other fencing materials to extend the existing nursery in the Dashtijum Reserve. As a result the size of the nursery increased by 0.22 hectares.

Nine fruit tree species were planted in the nursery, including: walnut, apple, pistachio, apricot, cherry plum, hawthorn, mulberry, pear and pomegranate. See table below for the survival rate and species:

#	List of saplings/seeds	Total survival rate in Dashtijum, 2021
1	Walnut	4500
2	Pistachio	20000
3	Apricot	1000
4	Cherry plum	5000
5	Apple	250
6	Briar	4350
7	Mulberry	300
8	Pear	300
9	Pomegranate	800
	Total	36500

We also supported the District Forest Service team to carry out stratification and grafting of a number of rare species in Dashtijum Reserve.

This included the stratification of more than 20kg pistachio, 20kg cherry plum, 30kg of apricot and 150kg walnut. A further 250 walnut trees, 150 apricot trees and 800 apple trees were grafted.

## Muminabad district - Childukhtaron reserve

Similar activities were carried out at the Muminabad nursery in Childukhtaron reserve to create the space needed to grow the various local varieties of fruit and nut trees demanded by the communities. With the support of the Stanley Smith (UK) Horticultural Trust, FFI and our partner in Childukhtaron reserve, the Forestry Service Unit of Muminabad district, purchased 200 metres of netting and other fencing materials to extend the existing nursery.

As a result the nursery has extended by 0.35 hectares, providing the additional space for the nursery to increase its capacity from about 200,000 seedlings to 225,250 seedlings.

11 species of both fruit and non-fruit trees were propagated and planted in the nursery, including: apple, cherry, hawthorn, walnut, cherry plum, apricot, almond, briar, pear, barberry and poplar. See table below for the survival rate and species:

#	List of saplings/seeds	Total survival rate in Muminbad district, 2021
1	Apple	12500
2	Cherry	2100
3	Hawthorn	200
4	Walnut	2000
5	Cherry plum	1000
6	Apricot	300
7	Almond	550
8	Briar	1000
9	Pear	350
10	Barberry	150
11	Poplar (populus alba)	5100
	Total	25250

We also supported the District Forest Service team to carry out stratification and grafting of a number of rare species in Childukhtaron Reserve.

This included the stratification of more than 10kg of apricot, 5kg of apple, 100kg of walnut and 10kg of almond. A further 200 apricot trees and 1500 apple trees were grafted.

Data collected by the local forest units indicate that survival rates vary between 60% and 90%, and that these rates vary by species, location and site.

The tree-planting carried out in Dashtijum and Childukhtaron will complement other work FFI is delivering to support local development and environmental education, benefiting >500 people across five villages.

Further, the large variety of species that have been planted ensure carbon sequestration in the short and long-term. Fast growing poplars, for example, will sequester more in the short term, whereas slower growing apples and pears will take several years to start sequestering significant carbon but, when mature, will eventually represent significant carbon sinks.



# PHOTOS FROM DASHTIJUM RESERVE





# MUMINABAD DISTRICT - CHILDUKHTARON RESERVE







## UPCOMING ACTIVITIES

Looking forward this project will continue focusing on the Childukhtaron and Dashitijum Nature Reserves in Tajikistan. As only 3% of the country is forested, both Childukhtaron and Dashitijum reserves are identified in Tajikistan's National Biodiversity Strategy and Action Plan as two of the country's three most valuable walnut-maple forest sites, with a rich variety of wild fruit and nut trees, including critically endangered pears, *Pyrus tadshikistanica* and *Pyrus korshinskyi*, as well as the vulnerable almond *Amygdalus bucharica* and apple *Malus sieversii*. These globally significant forests and unique agro-biodiversity are increasingly important as genetic reservoirs, as climate-related impacts threaten domesticated varieties grown worldwide.

With this in mind, FFI will build on our successes to date by supporting the advancing programme at the nurseries. Activities in the coming year will include:

- Provide support to the Forestry Service Units and communities in both Childukhtaron and Dashitijum to ensure quality aftercare for the young plants (e.g. watering and grass weeding) to maximise survival rates of the planted trees.

- Additional extensions of the existing community nurseries in both Childukhtaron and Dashitijum to allow us to continue to propagate threatened species and increase the population size of these species.
- Once grown to suitable size, propagated saplings will be planted into gardens of local communities (helping to increase spread of these species, but also providing a source of income for local people who harvest fruits and nuts).
- Ongoing support to the District Forest Service teams to continue grafting and stratification of rare and threatened seeds and seedlings.

All of these activities will ensure the Forestry Service has the capacity to grow and plant threatened fruit and nuts trees, and by doing so, ensure the future of the species, but also contribute to the wellbeing of local communities by increasing availability of seedlings from culturally and economically important species. Consequently, this project will help to restore two ancient fruit and nut forest reserves in south Tajikistan, through the planting of different native species, helping to create diverse and climate resilient forests over the long term.



# THANK YOU

FFI would like to extend our sincere thanks to the Stanley Smith (UK) Horticultural Trust for the critical financial support that has enabled us to conduct this work.

If you have any questions about this report, please get in touch:

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