

Darwin Initiative 23-025: Reducing environmental degradation through sustainable fuel interventions in Afghanistan 2016-19

INTRODUCTION

The Darwin Initiative is a UK government-funded mechanism to assist countries rich in biodiversity but poor in financial resources to meet their objectives under the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species of Wild Flora and Fauna (CITES), International Treaty on Plant Genetic Resources for Food and Agriculture, and the Nagoya Protocol on Access and Benefit Sharing. The project will support the National Environmental Protection Agency of Afghanistan (NEPA) and the Conservation Organisation for Afghan Mountains (COAM) to engage with the rural, mountainous communities of the Central Highlands Region in Bamyan, to prevent environmental degradation by reducing fuelwood collection through more efficient and sustainable fuel interventions that reduce indoor air pollution in the form of smoke. Reduction in fuel required will contribute to the restoration of the rangelands and lessen the pressure on biodiversity in the area, securing essential ecosystem services for the communities who rely heavily on the natural resource base for their livelihoods. The project will generate key information on the social and environmental benefits of simple, sustainable interventions such as clean cookstoves and solar water heaters and will have the potential to impact a range of areas from sustainable livelihoods, health and environmental conservation to policy-making.

THE SHAH FOLADI PROTECTED AREA

The Shah Foladi Protected Area is located in the Koh-e-Baba mountain range of Bamyan Province in Afghanistan's Central Highlands Region. It is an important area for biodiversity, with a flora comprising roughly 5,000 native taxa around 1,200 of which are endemic. The rural highland communities use shrubs and plants from the rangelands for fuelwood. These plants are collected in vast amounts and are often uprooted, disrupting the structure of the plant community and the biodiversity that depends on it as well as weakening the soil, which can lead to increased risk of natural disasters such as floods and avalanches. Woody taxa at risk are likely to include *Acantholimon*, *Astragalus* and *Artemisia*. 68 of 110 species present in Bamyan are national endemics with 17 endemic to Bamyan province itself. Unsustainable collection increases extinction risk, threatens ecosystem services and diminishes future fuelstocks for communities. It is vital to replace current fuelwood collecting practices with alternative methods that align with traditional practices in order to sustainably manage and protect this important area.



EXPECTED OUTCOMES

- Reduced frequency and time required collecting firewood for basic needs such as cooking & heating and a reduction in fuel expenditure for households.
- Immediate reduction in interior smoke through more efficient and clean fuel usage with particular benefits to women and children.
- Improved health and hygiene after solar water heaters are installed providing up to eighty litres of hot water per day for washing and bathing.
- Support for the green economy and market creation benefits for sustainable technologies through production and installation of alternative energy sources and efficient stoves using local expertise.
- Increased capacity and coordination between local government, university and communities in botanical surveying and rangeland conservation.
- Greater community level awareness of sustainable practices linked to biodiversity conservation and livelihood benefits.

ENVIRONMENT AND HEALTH

- Roughly 3 billion people cook on open fires globally, with 3.6 million people dying annually from indoor air pollution and related health issues. In Afghanistan, roughly 54,000 people die every year from poor indoor air quality.
- Current cooking and heating facilities use fuel inefficiently, negatively impacting labour and household income.
- Women and children are most affected as they spend more time in the home.
- Unsustainable collection contributes to land degradation and increased vulnerability to natural disasters.

METHODOLOGY FOR ACTION RESEARCH IN THE SHAH FOLADI PROTECTED AREA

Alternative and efficient fuel sources will be delivered by two intervention methods by COAM and NEPA:

- Clean cookstoves, made in the COAM Design Lab, with chimneys that reduce the amount of fuel required, and reduce indoor air pollution.
- Solar water heaters to reduce the amount of fuel used during the day for heating water.
- Bio-briquettes to conserve fuel and reduce the amount of wood and shrubs collected from the rangelands.

RESEARCH LOCATIONS

5 VALLEYS IN THE SHAH FOLADI

1. Somara: Sar-e-Somara, Garmbolaq and Aliahmad villages
2. Dukoni: Yatimak, Molgar and Jawzari villages
3. Khushkak: Chapqolak, Qabrizaghak, Sorkhaktangi and Olang-e-Kalan villages
4. Chapdara: Sar-e-Chapdara, Gero and Petap villages
5. Jawkar: Jawkar, Dalak-e-Bala villages

PARTNERS

Centre for Middle Eastern Plants; part of the Royal Botanic Gardens Edinburgh (CMEP)

United Nations Environment Programme (UNEP)

Conservation Organisation for Afghan Mountain Areas (COAM)

National Environmental Protection Agency of Afghanistan (NEPA)

Kulob Botanic Gardens, Tajikistan

Communities of the Shah Foladi Protected Area

Bamyan University

