



SGP The GEF  
Small Grants  
Programme



# REVIVAL

LEVERAGING CULTURAL & SCIENTIFIC KNOWLEDGE AND  
PRACTICES FOR ENVIRONMENTAL CONSERVATION IN TALI

སྤྱིན་པའི་ནང་ནས་ཚས་ཀྱི་སྤྱིན་པ་མཚོགས།

The gift of knowledge is the best gift.

- The Buddha in Dharmapada, XXIV.21

All Rights Reserved

No part of this report may be reproduced, stored in a retrieval system, or transmitted in any form by any means - electronics, mechanical, photocopying, microfilming, recording, or otherwise - without the permission of the publisher.

© The Loden Foundation 2022

Printed at Yoebar Prints - yoebarprinters@gmail.com

A Joint initiative of the  
GEF-Small Grants Programme, UNDP  
the Royal Government of Bhutan & Loden Foundation



SGP

The GEF  
Small Grants  
Programme



Little monks of Tali Shedra

---

# CONTENTS

---

## 04 RATIONALE

To Find the core reason to implement the Revival Project

## 15 PROJECT OUTPUT IN NUMBERS

Words would be too lengthy to exhibit the outcomes of the project



## 11 COMMUNITY INVOLVEMENT

"It takes a village to raise a lake"  
Pictures and stories of how a community came together to help its lake

## 27 A MODEL FOR FUTURE EFFORTS

The beauty of Loden's strategic initiative discussed



## MESSAGE FROM THE FOUNDER

"Across Bhutan, you will find many sites where mountains are considered sacred space and thick forests considered as haunted habitat of deities. You also find hidden valleys, blessed water bodies, sacred rocks, holy trees and so forth. The Buli and Tali lakes are an epitome of how nature and culture comes together. They are sacred ecological sites which play a very important role in local life.

People come here with respect for the lake spirit and these kind of spiritual sensitivity is a very powerful force in conserving the lake and in sustaining its ecosystem.

It is a perfect example of how people's cultural belief system can contribute directly to the conservation of a natural environment and how the conservation of the natural environment can enrich the cultural practices and the belief systems. It is a very good example of how culture and nature can harmoniously come together to sustain the environment and the well-being of the people."

Lopen Karma Phuntsho, Buli Lake, 2020

280

POPULATION

148 F 132 M

1

-COMMUNITY SCHOOL  
-MONASTIC INSTITUTE  
-OUT-REACH CLINIC  
-FOREST BEAT OFFICE

1880 MASL  
27°10'22.0"N  
90°45'13.7"E

GEOGRAPHIC COORDINATES



Tali village

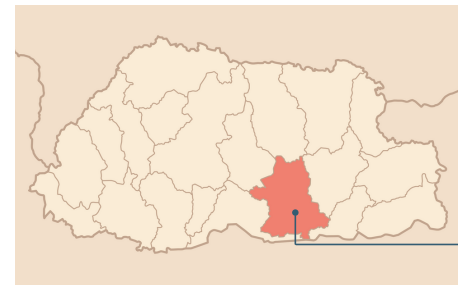
## TALI VILLAGE

Tali village comprises of 25 households and at least 280 residents. The settlement is located on the shoulder of a mountain at an elevation of 1880 Masl, surrounded by evergreen broad-leaved forests.

The settlement has road, electricity, internet connectivity, and social infrastructures such as a community school, a monastic institute, an outreach clinic, and a forest beat office.

The majority of the villagers are farmers who grow rice, wheat, millet, and various vegetables and fruits. As a source of income, some people work in carpentry, business, and logistics.

The village is rich and diversified when it comes to both the landscape and culture.



Tali  
Nangkor, Zhemgang



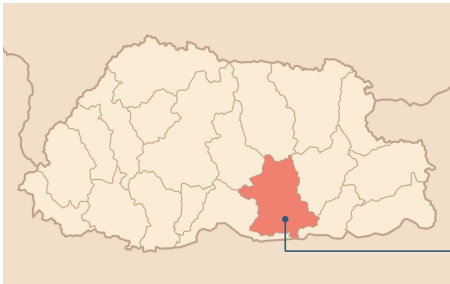
Tali Heritage village

## RATIONALE

According to local mythology, Tangsibi tsho in Tali is the jewellery basket of the famed Buli tsho. It was left behind when Buli tsho moved from Tali to Buli—covering an area of one acre. However, grasses and water weeds covered 90% of the lake's surface. The lake was contaminated with invasive waterweed, and the lake's water level was declining year after year.

Considering how important the lake is to human and wildlife in Tali, culturally and physically, the lake's drying could have dire consequences.

The Loden Foundation saw an urgent need to remove the weed, revitalise the lake, and sustain the ecosystem through an integrated and holistic management project by combining scientific, social and spiritual approaches.



Tangsibi Tsho  
Tali, Zhemgang



Tali Lake infested with water-weeds



A traditional house in Buli, Zhemgang



Tali Community with Loden Foundation &amp; Zhemgang Forest Officer

## LEVERAGING CULTURAL AND SCIENTIFIC KNOWLEDGE AND PRACTICES FOR ENVIRONMENTAL CONSERVATION IN TALİ

### WHAT IS IT?

The Tali lake has significant cultural importance, water for paddy field irrigation for 25 households, and a water source for wildlife and domestic animals. The lake conservation project was conceived with this understanding and with a vision to conserve the lake and transform the lake site and surrounding area into a community eco-tourism hub.

The initiative is a testament to how science and spirituality, culture and the environment can coexist and benefit from one another. The UNDP GEF Small Grants Programme funded the initiative.

### PROJECT VALUE

Total: [US \$ 46,200]

From SGP: [US \$ 33,550]

Loden Foundation & Community [US \$12,650]

## PROPOSED ACTIVITIES/INTERVENTIONS

### PREPARATORY PHASE:

1. Project inception, meetings with the institutions and conservation groups, and development of by-laws
2. Extensive mapping and demarcation of the area around the lake

### SITE DEVELOPMENT PHASE:


1. Tali lake area management
2. Development of foot path and eco-cultural trail
3. Identifying plants and trees and putting name tag
4. Installation of waste bins and procurement of materials
5. Installing signboards at the site and access roads

### RESEARCH AND DOCUMENTATION PHASE

1. Writing account on the lake and village
2. Audio-video recording and interviewing

### AWARENESS AND DISSEMINATION OF OUTPUTS PHASE

1. Production of one documentary on spiritual or cultural ecology and environment conservation
2. Screening documentary on television, social media and gatherings.
3. TV and Radio programs on nature and cultural linkages and its positive impact on conservation
4. Conducting awareness sessions and disseminating the results
5. Biodiversity Assessment (Plants, Mammals, Bird, Orchid and Butterflies)



The GEF-Small Grants Programme which is implemented by UNDP in partnership with the Royal Government of Bhutan strives to promote and support innovative and scalable initiatives, and foster multi-stakeholder partnerships at the local level to tackle global environmental issues. In this first collaborative project between SGP-UNDP and Loden Foundation, it showcases the benefits of leveraging cultural practices and scientific knowledge in conserving the local environment. It generates environmental benefits for the local and global community.

**TSSHERING PHUNTSHO, NATIONAL COORDINATOR,  
GEF-SMALL GRANTS PROGRAMME, UNDP**



## NATIONAL BIODIVERSITY CENTRE

After consulting with the National Biodiversity Centre and seeking advice from concerned authorities and other local experts, as well as taking into account the recommendations contained in the most recent biodiversity assessment report from the Zhemgang forest division, the lake was cleared through community engagement with religious ceremonies in November and December 2020.



## DEPARTMENT OF FOREST AND PARK SERVICES

The Zhemgang Forest Division was instrumental in assisting the Loden Team to complete the project.

The project included thorough GPS-based mapping and demarcation of the lake and other elements along the eco-cultural trail.

Some 68 labels of 19 plant and tree species and 60 labels of 23 orchid species were also identified and tagged along the Changlochen eco-cultural route for documentation with common, local, and scientific names, which is now open to all visitors.



## Identified Waterweeds

Common Name: Sedge  
Scientific Name: *Scirpus cyperinus*

Common Name: Sweet flag  
Scientific Name: *Acorus calamus*

Common Name: Duckweed  
Scientific Name: *Lemna perpusilla*



Paddy transplantation

## RELIGIOUS PROCEEDINGS

A Khenpo (religious master) was on pilgrimage in Tali and had a dream of mermaid emerging from a lake. He questioned the residents, unaware of the presence of the lake in the village as he was taken aback by the dream. He only learned of the Tangsibi Lake afterwards and went to see it, which was in poor condition. The Khenpo then encouraged people to restore and care for the lake, implying that the lake spirit would be happy and beneficial to the village.

This encouragement from a religious master provided a much-needed nudge for community members, who were eager to cooperate in conservation efforts where their spiritual and cultural beliefs serve as the mechanism for effective conservation of the ecological site.

The spiritual and cultural beliefs had immediately impacted the community, which had soon decided to take ownership of the lake. As the first step, the community invited Padtsheling Trulku, began religious rituals, and consecrated the lake. As a result, it was a timely intervention to implement a proper and sustainable conservation mechanism to capitalise on existing resources and people's will.



The residents of Tali and Buli believe that Buli Menmo, the lake's spirit, stopped at Dharpatang in Tali on her way from Tibet to find her brothers via Kurtoe and Bumthang.

The vast water basin can still be seen today. At the time, the residents of Tali, fearful that the lake might harm them, defiled the lake by dumping animal carcasses and defecating around it to drive away the lake spirit.

Tali lake was formed later after the jewellery basket was left by Buli menmo at a place called Tangsibi,

Some people also believe that the lake was the source of drinking water for Thuksey Dawa Gyeltshen, the son of Pema Lingpa, who lived nearby.

Statue of Lake spirit installed inside the newly built Lukhang temple next to the Tali Lake

# "IT TAKES A VILLAGE TO RAISE A LAKE"

The lake was cleared through community involvement and religious ceremonies in November and December 2020.

The village's men and women joined together to construct a bamboo raft to transport the weeds across the lake. In the endeavour to revitalise the lake, all people contributed significantly to the removal of weeds.

Over 'three truckloads' of weeds and tree stumps were cleared, and during these days, members of the community brought lunch and refreshments. The locals demonstrated remarkable community vitality and passion for the project because they understood the importance of their lake.



The team after the Lake cleanup



Clearing of Lake by the community



BEFORE



AFTER

# DEVELOPMENT OF FOOTPATH AND ECO-CULTURAL TRAIL

As part of the site enhancement works, the community built a concrete footpath extending within the village to connect the lake and other features with the nature trail.

In addition, two monumental stupas located along the hiking route were restored and beautified, and were integrated into the attraction features along the eco-cultural trail.

To benefit the people, a map of the entire project, waste bins, project and information signboards at the site, and paths were installed.



PROJECT REPORT 2022



BEFORE

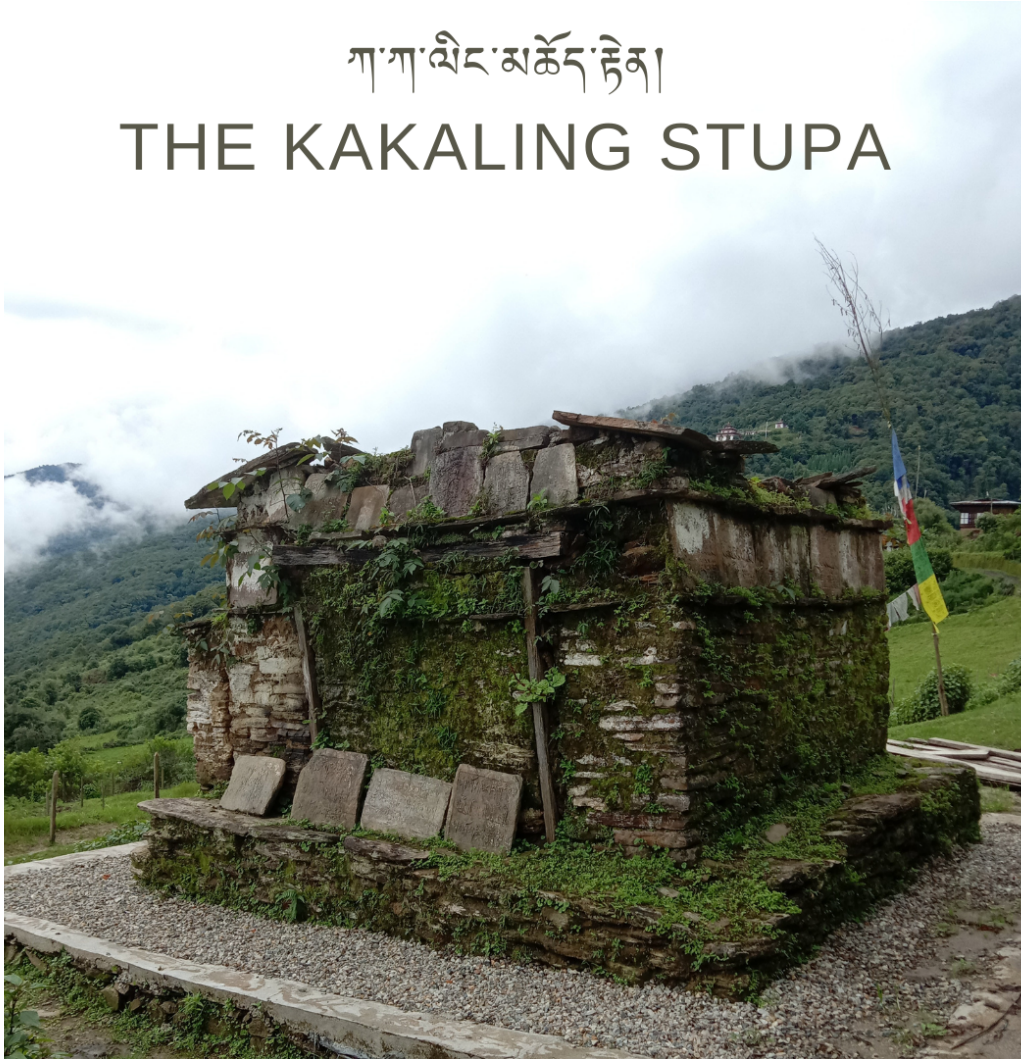


AFTER

REVIV

ཀ་ཀ་ལིང་མཚོད་རྟེན།

## THE KAKALING STUPA



This monument is the remains of a Kakaling stupa. In the local Kheng dialect, such structure is called Kakaling, which is sometimes also known as Tabab Choten because anyone approaching on a horse shall get off and walk from this point. Such Kakaling stupa structures are cubical gate with a passage through them and often has a mandala of a deity painted on the ceiling overhead.

Sometimes paintings of deities, Buddhas and Bodhisattvas, are found on the walls of the passage in the stupa. Where the travellers pass to and fro on their journeys, it is mainly located at the point of entry and exit of a community.

What remains of this Kakaling is a valuable historical monument with both architectural and local history embedded into the structure. It reveals the change and tells us the story of the past and present of the Tali community.

# FIVE

INFORMATION, PROJECT MAP AND SUMMARY BOARDS INSTALLED IN TRI-JUNCTIONS AND MONUMENT AREAS FOR EDUCATION & AWARENESS

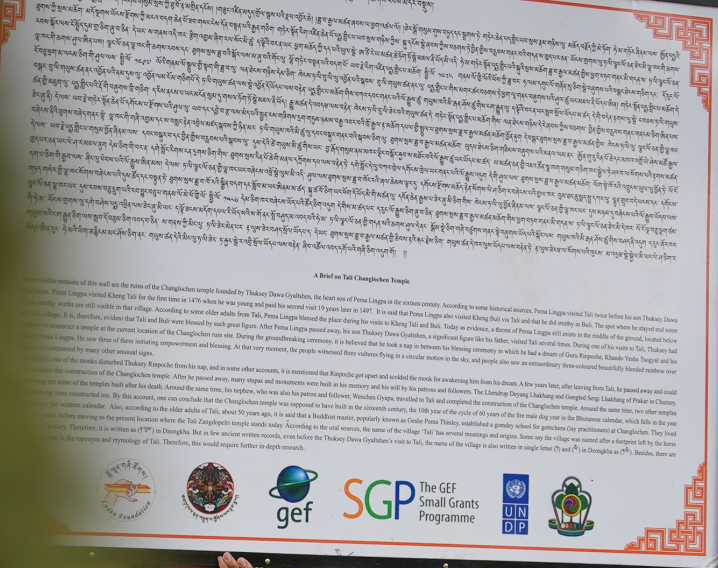
# THREE

LARGE IRON-MESH WASTE BINS INSTALLED FOR WASTE MANAGEMENT\*

# 503

METRES OF ECO-TRAIL PAVED ALONG THE HERITAGE VILLAGE TOWARDS THE LAKE

\*The community collects and recycles the waste twice a month from the waste bins.



Installation of information board at Changochen

TALI LAKE CONSERVATION  
AWARENESS PROGRAMME

REVIVAL PROJECT REPORT 2022



24 - 29 JUNE, 2021

706

PARTICIPANTS  
ATTENDED THE  
AWARENESS  
PROGRAMMES

29.3K

OUTREACH IN  
SOCIAL MEDIA  
ABOUT THE  
PROJECT

Viewers from Australia, United States, India, Switzerland, Japan, United Kingdom, France, Thailand, Cambodia







## IN COLLABORATION WITH THE NATIONAL ENVIRONMENT COMMISSION

### TESTING OF WATER PARAMETERS FOR TALI LAKE, ZHEMGANG

The water monitoring was primarily conducted for physical parameters, COD, Total Nitrogen and Total Phosphorous after the request to the National Environment Commission Secretariat.

#### METHODOLOGY

The HACH Multi-parameter kit was used for physical parameters, spectrophotometer for reading the Total Nitrogen and Total Phosphorous and  $\text{KMnO}_4$  titration method.

#### RESULT

The pH was found slightly acidic with a reading of 6.49 and the Dissolved Oxygen level of 0.95mg/L below the national standard. The rest of the physical parameters were found within the permissible limit. The chemical parameter Total Nitrogen was found within the Environmental Standards, 2020. The Total Phosphorous standard was not given in Environmental Standard but the result was found minimal at 0.50 mg/L. The Chemical Oxygen Demand (COD) exceeded the permissible limit.

The NEC team conducting water test at Tali Lake



## PHYSICAL AND CHEMICAL PARAMETERS RESULTS

PARAMETERS	VALUES
Water Temp °C	24.7 °C
pH Value	6.49
Conductivity $\mu\text{S}/\text{cm}$	21.6
DO mg/L	0.95
TDS mg/L	10.05
Salinity %	0.01
Resistivity Kohm.cm	46.4
Chemical Oxygen Demand mg/L O <sub>2</sub>	10.4
Total Nitrogen mg/L	3.87
Total Phosphorous mg/L	0.50

SAMPLING SITE: TALI LAKE

TEST CONDUCTED BY  
JANGCHU DEMA & DECHEN LHAM

**BIODIVERSITY ASSESSMENT  
OF TALI**



*Golden Langur (Trachypithecus geei) on the way to Tali*

# 70

**BIRD SPECIES OBSERVED  
AROUND TALI LAKE**

# 23

**ORCHID SPECIES FOUND  
AROUND THE LAKE**

# 19

**PLANT SPECIES FOUND  
AROUND THE LAKE**

# 21

**TREE SPECIES FOUND  
AROUND THE LAKE**

# 12

**MAMMAL SPECIES FOUND  
AROUND THE LAKE**

# 6

**MAMMAL SPECIES ARE  
ENDANGERED & VULNERABLE**

"The overall vegetation of the forest around the lake is" dominated by oak species and the forest stand is at very young with very less regeneration. Forest around the lake harbors very rich mammal species which are ecologically important and they are visiting Tali Lake for water and prey hunting. The site also holds very rich diversity of orchids, birds and butterflies.

The revival and conservation of Tali lake is very much paramount for the local community and wildlife around the lake. Biodiversity assessment was carried out in December and many species of birds, mammals and butterflies of other season could have missed.

The diverse composition of flora and fauna can be valued for creation of nature based ecotourism product in the locality so as to improve the livelihood of the local communities and enhance natural environment conservation awareness.

The forest floor is empty with few or no regeneration due to extensive ploughing by wild boars and heavy canopy. It is important for some thinning operation to improve the stand and improve the regeneration.

The lake is fully covered with weeds and grasses and it was observed that their invasion is increasing year by year and thus, water losses through transpiration will impact the water reservation. Therefore, it is pivotal to remove these grasses and weeds to revive and increase water storage level of the lake."

Recommendations from the Zhemgang Forest Division



“Our tourism policy of High value, Low volume means that we want to offer an unforgettable experience to the tourists, but don't want to be overrun by them. We have regulations in place and plan to manage tourist numbers to protect our natural heritage. We are a carbon-negative country due to our environmental policies, which have been in place since the 1970s. Our policies are guided by our constitution and the principles of Gross National Happiness”

**DORJI DHRADHUL, TOURISM COUNCIL OF BHUTAN**

Buli Lake, Zhemgang

## ENVIRONMENTAL CONSERVATION THROUGH CULTURAL PRESERVATION

Despite the hurdles presented by the pandemic, our lake revitalisation project in Zhemgang has been completed successfully. The project, financed by UNDP's Small Grants Program (SGP), integrates cultural and scientific knowledge to promote environmental conservation. Tangsibi Lake was discovered to be in poor condition, with weeds growing in the lake and unsustainable farming techniques being practised in the surrounding areas. The community sought Loden's assistance in documenting the lake's historical value and recommendations on how to assure the lake's rebirth and sustainability.

The Tangsibi Lake Revival Project was established with the goal of preserving Tangsibi Lake and its ecology via spiritual, cultural, and scientific interventions and activities. Tangsibi Lake is supposed to be the jewel basket of the famed Buli Lake, located in the neighbouring village of Buli. Aside from its cultural significance, Tali Lake serves as a source of irrigation water for 25 of the community's households. The lake also provides water for wildlife and domestic animals.





“We are happy as the lake looks very clean. Now we will be blessed after clearing the lake and hosting several religious prayers to the lake spirit. We hope and believe that the lake spirit will also take full charge to protect the lake so that water body at the lake will retain forever”

**SHERAB  
VILLAGE ELDER**



"I am very impressed with the conceptualisation and implementation of the project.

It was appreciated at the Cambridge show as an exemplar for local initiatives supported by the local and national government and international agencies **all working together to a common goal.**

The interaction of scientific and local knowledge was also seen as indicating that, with the right approach, you can successfully combine these two elements."

BRUCE HUETT



UNIVERSITY OF  
CAMBRIDGE



The project is beautiful in its simplicity and contains many “**hidden gems**” for SGP to reflect upon at the global level.

This may be a technique that many more SGP projects could “**routinely**” adopt to demonstrate results.

The walking trail in the forest will ensure embodied **transmission of traditional ecological** in situ beyond the abstract teaching in the classroom.

It **encapsulates** and **communicates** what SGP can contribute at a global scale concerning the ecological restoration

Expressing ecological restoration in terms of cultural identity sometimes involves the **revival** of ancient or **dying traditions**

A very good example of science and culture **coming together** to enhance the probability of success of an **ecological restoration** project with **livelihood components**. The world needs many more examples.

TERENCE HAY-EDIE & GILES ROMULUS | GEF SGP

**SGP** The GEF  
Small Grants  
Programme

# TALI LAKE PRESERVATION: A MODEL FOR FUTURE EFFORTS FOR ENVIRONMENTAL CONSERVATION

The ideology of heritage conservation in Bhutan is not a recent phenomenon. The local belief systems and the traditional customs have always integrated heritage conservation ideology within their ways. However, the modern ideology of heritage and its conservation is quite a recent phenomenon in Bhutan. According to recognition of the traditional systems of integrated conservation practices in local culture and tradition, it is a very recent proposal.

The Loden's cultural initiative that undertook the project to preserve Tali Tangsibi Lake in Kheng, I believe, is the first project of its kind. The project was proposed and implemented for the first time in Bhutan, bringing together scientific and cultural knowledge in the efforts to preserve and improve the ecology around the localities for environmental conservation.

The beauty of Loden's strategic initiative titled "Leveraging Scientific and Cultural Knowledge and Practices for Environmental Conservation" is its consideration of habitats and their behaviour as the vital subject of focus, which is the most important factor impacting the surrounding and atmosphere around their settlements impacting the nature and the environment in whole. The Tali Lake preservation project builds its activities around the Lake not only resulting in tangible improvements in the cultural and natural surroundings but also assimilating an important effort to permit a strong impact of change in the attitude of the local people, the humans whose cultural practices, customs and knowledge are of immense value to improve the environment and natural habitat around them.

Samten Yeshi  
Former Loden Culture Programme Manager



We are grateful to the Small Grants Programme of UNDP's Global Environment Facility, UNDP Bhutan, the Royal Government of Bhutan, Zhemgang Forest Division, the Department of Forest & Park Services, MoAF, Zhemgang Dzongkhag Administration, the Local Government, the community for their support and to the Guardian Deities of Tali


CORE PARTNERS



TECHNICAL SUPPORT

MEDIA PARTNERS



A photograph of two young children in traditional Tibetan clothing standing on a wet, stone-paved street. They are facing each other and appear to be in conversation. The child on the left is wearing a colorful, patterned jacket and a matching skirt, with blue sandals. The child on the right is wearing a similar outfit and is holding a small white object, possibly a cup or a piece of food. In the background, there are stone buildings, a black dog, and another person walking away. The overall atmosphere is quiet and traditional.

With Metta

*Tashi Delek*

To help support the Community become Guardians of Tali Lake and their surrounding

**Donate directly to the Community!**

**101023104801**

Tali Yoesel Pelri Community Forest

SWIFT Code: BHDEBTBT  
Bhutan Development Bank Limited  
Or Contact +975 17873992



**HELP  
SUPPORT  
OUR  
COMMUNITY**

"Never doubt that a small group of thoughtful  
committed citizens can change the world:  
indeed, it's the only thing that ever has."

**Margaret Mead**

## Acknowledging Communal Harmony

Loden Foundation would like to extend our heartfelt gratitude to everyone whose hard work made the revival of Tali lake possible. We are inspired by the project's exhibition of exemplary communal harmony in achieving enriched stewardship of the precious gifts from nature.

Photo and Edited by

**KARMA JAMTSHO**

[www.loden.org](http://www.loden.org)

[www.culture.bt](http://www.culture.bt)

**LODEN FOUNDATION**