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# RANGZHIN

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## MESSAGE FROM THE EXECUTIVE DIRECTOR



It is our great pleasure to connect with you once again to remind each other of our inspiration and commitments. As COVID-19 continues to spread, the future has never felt so predictable. These are challenging times for all of us, and we hope that you are in good spirit and good health. As the global response to the Covid-19 pandemic unfolds, RSPN is taking proactive measures to combat the pandemic. At RSPN, projects are either on halt or have been postponed, deliverables delayed, major events cancelled at a significant financial loss. Funds have been redirected from planned activities to Covid-19 responses. However, we are doing everything possible to sustain daily operations and services to uphold our conservation commitments.

Nonetheless, during this time of great uncertainty, we have been comforted, encouraged and humbled by the support from our friends from all over the world for which we are profoundly honored.

Thank you one and all, once again!

With profound respects,

Kinley Tenzin (Ph.D)

## Become a Member of RSPN

Become an RSPN Member and help give nature the home it needs. RSPN membership is a great way to get close to nature and get fantastic membership benefits. Show your support and join us today!

Visit <http://www.rspnbhutan.org/be-a-member-of-rspn/>

Or scan the QR code to apply online



## Recipient of the Energy Globe Award

RSPN is truly honored to be selected as the recipient of this year's Energy Globe National Award 2020. The award is presented for the successful implementation of a project titled "Strengthening of Water, Sanitation and Hygiene (WASH)", supported by the SAARC Development Fund.

With more than 180 participating countries, the ENERGY GLOBE AWARD is today's most prestigious environmental award. It is awarded annually to projects saving our environment by personal action, sustainable projects, or campaigns for raising awareness in sustainability.

We would like to thank our partners and various stakeholders who were instrumental in the success of the project.





# CONSERVATION AND LIVELIHOODS

## Mitigating land degradation

The Royal Government of Bhutan has been implementing various programs and projects to combat land degradation since the advent of the Five-Year Plan in early 1960. Internationally Bhutan is a party to UNCCD's convention of Land Degradation Neutrality (LDN).

Despite several efforts undertaken by the government in terms of addressing land degradation, according to a study conducted by the National Soil Service Center (NSSC), Bhutan loses three to 21 tons of fertile topsoil per hectare annually to soil erosion. Such losses are contributing due to stiff terrain and topography of the country and lack of mitigation measures against land degradation. Today, several

CSOs in the country are actively engaged in implementing land management programs through a project intervention to collectively address the common goal of mitigating land degradation.

RSPN with fund support from the Global Environment Facility-Small Grants Programme, UNDP Bhutan, implemented two years (2018-2019) project on sustainable land management to ensure food security in Digala Chiwog under Bardo Gewog in Zhemgang Dzongkhag. The intervention focused on addressing land degradation through prescribed mitigation tools such as stone terracing and hedgerow plantations. The project also supported solar electric fencing

to address human-wildlife conflict, horticulture support, greenhouse, and associated training programs in the chiwog. Post project follow-up with a beneficiary has shown that project intervention has certainly impacted the livelihoods of farmers and they continue to upscale the land management program with training and education programs received during the project.

Lastly, RSPN extends our deepest gratitude to GEF-Small Grants Programme, UNDP Bhutan for the fund support and also acknowledges our partners and stakeholders for the support rendered during the implementation of the project.



## In conversation with Mr. Indra on White-bellied Heron

*Do you recollect your first sighting of White-bellied Heron?*

I saw the White-bellied Heron (WBH) for the first time in 2014. I still clearly remember, on that particular day I decided not to collect data for my thesis research but to join a team from RSPN and park officials to survey a river where there have been rumors of sighting of the bird recently. I was still doing my graduate study then, and personally had no idea about the purpose of the survey. Despite that, I followed the team anyway.

After walking for about three hours, we saw a large almost a black & White bird flying off from a nearby pond, and the whole

team started celebrating with excitement. I did the same just not to look stupid, but my mind was still grappling to understand why it matters. Because there were plenty of black stocks, peacocks, egrets, hornbills, and hundreds of other birds but they did not bother. They were so focused on the lone bird which disappeared like a flash. That was my first sighting and from there on, I just kept on thinking that how this bird could be so special.

*Why should we care about any species?*

This question is applicable to all species. Why is it important to save tigers, elephants, birds, insects, or any

other species including Homo sapiens? I think we should care because none of the species are independent. They are interdependent and each acts as the building block of a food chain. Food chains build-up to the food web and then eventually form the ecosystem.

And the simple answer is species are the functional unit of the ecosystem. We have a working environment because we have each species working for it. Every species, big or small, has a role in keeping the interconnected earth alive. The smallest bees have the biggest impact on agriculture. I think it is not right for



humans to remove those species from the system because they are not directly benefiting us. The day, the ecosystem stops, so shall be the final day.

#### *Why White-bellied Heron?*

White-bellied Heron is the rarest and second largest heron species, it is critically endangered with less than 60 confirmed individuals left in the world today. And more than 45% of them are in Bhutan.

However, despite our efforts, we still do not know how the population is declining although the habitats in Bhutan were intact during the 1900s and early 2000. Now the situation is getting worse.

WBH is not hunted, is not a common pet, it does not have value in illegal wildlife trade like hornbills, parrots, or many other songbirds, it is not a pest, or predator, at least to human or the crops, it is barely known to many people, you hardly get to see them, neither it lives in cities or towns or villages, nor it lives in farmlands, yet it is going extinct. So, something is going wrong with this bird or the environment.

#### *What does the extinction of such species mean to the health of the environment or health of ecosystems?*

I think the message is simple and clear. Even the indirect forces, which in-fact are repelled effects of our actions to our environment are enough to drive a species to extinction. This means our environment is sick, certain food chains are breaking apart, some species already went extinct and it is now driving immediate species like WBH to extinction. While extinction is a natural process and no force on earth could possibly stop that, but the rate at which it is happening is alarming, and we are responsible for that. We, humans, are accelerating the extinction 100 times the natural rate and we are already feeling the consequences. Outbreaks of pests, locust, army-worms, the proliferation of invasive species, human-wildlife conflicts, loss of food production, food sources, food nutrition value, diseases, pandemics and these are going to only intensify if we

don't take care now.

For WBH in particular, although we don't know how the white-bellied Heron has arrived at the current status, we know where it is heading and what is driving the way. And we should remember that it is not just the WBH, the food chains will be broken, food-webs will get disoriented, creating holes in the ecosystem, into which many more species will continue to fall and disappear widening the gaps and splits.

#### *What are the biggest threats to White-bellied Heron?*

It is not only the WBH but most of the species today, particularly the threatened species are facing three major pressures today: habitat loss, habitat pressure, and population pressure. Firstly, globally, habitat loss is the single biggest driver of extinction. On average, 160,000 sq km, or 1% of the global forest is lost every year. This means, at this rate the entire forest on this earth will be completely wiped off within one century. Deforestation is the biggest problem globally, but fortunately, not in Bhutan. However, fragmentation, infrastructure development, hydropower dams, extractive industries, and climate change are major drivers wrecking wildlife habitats. Unorganized road development, mining, dams, and permanent alteration of habitat due to climate change effect. Over the last century, the WBH distribution range has shrunk by 90%, from most of South Asia during the early 1900s to less than 165,000 sq km, now. This also means 90% of WBH habitat has been lost. It has been declared extinct from some of its historical range countries like Nepal and there are also no sightings for decades from Bangladesh and southern regions. Secondly, a few remaining habitats are increasingly under anthropogenic pressure. Incautious eco-tourism and recreation, diminishing food resources, pollution, fragmentation, forest fires, man-made or natural calamities are increasingly making the last remaining homes unlivable. We are observing a decrease in feeding success rate, fish populations in key habitats are dwindling,

and disturbances are increasing which directly affects the WBH. And thirdly, the small remaining population is losing the battle for life. The mortality rate has increased, the breeding success rate is declining, the gene pool is becoming smaller, there is gender imbalance & lack of choice for compatible breeding partners within the micro population and it is losing genetic vigor for survival.

#### *What is RSPN doing to save the species?*

Since 2003, RSPN has been leading the conservation of the WBH in collaboration with the conservation partners, donors, and local communities in Bhutan. We aim not only to protect the current population but also to protect key habitats and increase the wild population. We have been focusing on; habitat inventories and mapping, population surveys and monitoring, habitat protection and restoration, research and information development, preliminary genetic assessment, community mobilization and engagement, education and advocacy programs and livelihoods, and community support. In 2011, we also piloted a captive rearing program and initiated a permanent WBH conservation and breeding center.

#### *Moving ahead, What would be RSPN's plan?*

Our priority is to continue with in-situ conservation activities, because that is where the bird belongs to and where change is required. However, with the extremely low and declining population, we are embarking on securing an ex-situ population. So, moving ahead, we will be further working on, establishment and operation of the WBH conservation and breeding center and upscaling on-ground conservation activities and community engagement.



**Indra Prasad Acharja**  
*Chief*  
**Species and Habitat  
Conservation Division**





## REDD+ capacity building project

The Royal Government of Bhutan (RGoB) is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) and is a REDD+ partner country. The objective of REDD+ is to reduce emissions from deforestation, forest degradation, and the conservation, sustainable management of forests, and enhancement of forest carbon stocks.

Since 2010, Bhutan has initiated the REDD+ readiness program in the country. The main goal and objectives of the Bhutan REDD+ Readiness Program are to prepare the country to engage in, and benefit from result-based payments; strengthen existing forest policy and management systems, information, data, participation, methods, and other human and institutional capacities for management and development of forests in Bhutan.

In light of this, RSPN is a recipient of the Forest Carbon Partnership Facility (FCPF) grant in Bhutan for implementing

the Community Capacity Building Program (CCBP) project on REDD+ since 2017. Since then, RSPN executed several REDD+ education, sensitization, advocacy, and training programs with technical support from Watershed Management Division (WMD) who represents Bhutan REDD+ secretariat under the Department of Forests and Park Services (DoFPS) and implementing partners in the field, particularly in Zhemgang Dzongkhag.

Some of the notable outcomes under the project include:

- REDD+ sensitization program for community forest (CF) in six districts
- 14 middle secondary and higher secondary schools and one university under the Royal University of Bhutan
- Carbon accounting training and carbon stock assessments in CF
- Trained forestry officials on carbon accounting from six territorial forest division offices and subsequently supported grants for training and awareness in their respective

jurisdiction

- Supported training on sustainable natural resource management for executive members of community forest under Zhemgang Dzongkhag
- Knowledge generation and documentation on climate change and REDD+.

Agriculture is one of the most susceptible and vulnerable sectors to increasing climate change threats in the country. In keeping with this, the project, during its final phase that ends by August 2020 supported and trained selected farmers groups from five chiwogs under Nangkhor and Trong Gewog with climate-smart practices. Similar programs for farmers were also supported in Chhukha District. The vulnerable Chiwogs and farmers group were selected through consultation with the District and Gewog agriculture sector. RSPN extends our deepest appreciation and gratitude to the stakeholders and project technical partners for support and guidance in successfully implementing the project.

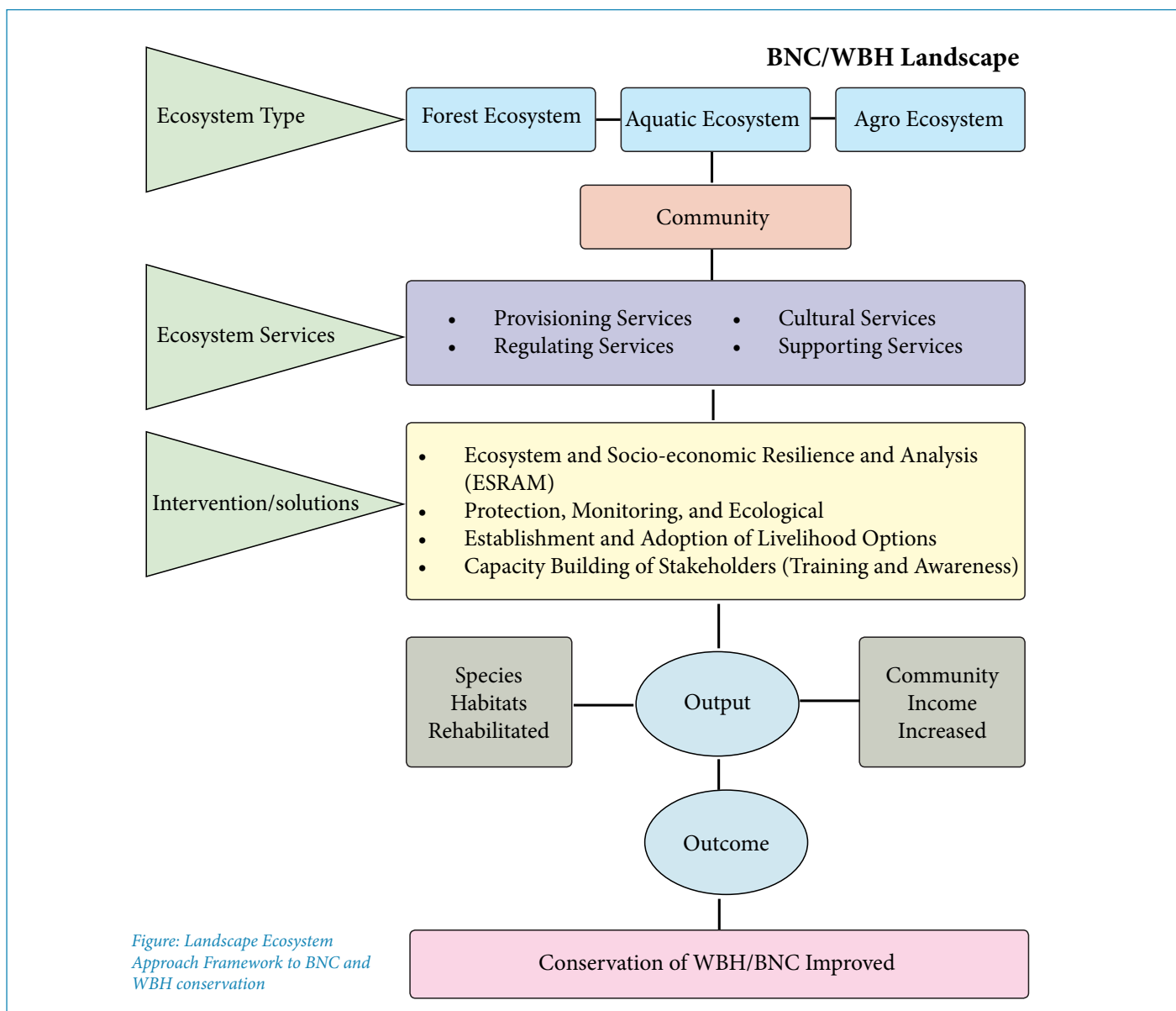




## Landscape Ecosystem Approach to Black-necked Crane and White-bellied Heron Conservation

Black-necked Crane (BNC) and White-bellied Heron (WBH) conservation face a lot of pressures from development and human interventions, resulting in degradation and fragmentation of the birds' habitat. Despite undertaking several interventions to address these challenges, habitat degradation is still going on. The communities living in and around BNC and WBH areas, who depend largely on natural resources for living, become more vulnerable to any change in the natural resource base. Attempts have been made to increase community engagement and participation in conservation activities through the adoption of ecosystem-based solutions that combine poverty reduction, biodiversity conservation, and livelihood enhancement. This integrated approach to conserve and manage the natural ecosystems needs the involvement of stakeholders from different sectors including communities. RSPN recommends a Landscape Ecosystem approach to coordinate and integrate actions to bring about holistic and concerted efforts to conserve BNC and WBH.

More details on the article *“Leveraging Conservation Benefits through Ecosystem-based Services Approach and Community Engagement in Wetland and Riparian Ecosystems –the case of conserving Black-Necked Crane and White-Bellied Heron in Bhutan”* by Dr. K.Tenzin and Dr. L.Norbu, RSPN, is available with International Union for Conservation of Nature (IUCN)





# OUR NEWEST MEMBER SPEAKS

## Minimizing climate change through individual effort

### Summary

Human activities have led to change in climatic conditions. Climate change has now become a global threat to humankind and wildlife alike<sup>1</sup>, posing greater threat to the economy of developing countries like Bhutan<sup>2</sup>. Our existence in the future is at stake if effort is not put to combat climate change.

### Background

The Green Kitchen Project at Gedu College of Business Studies (GCBS) was aimed at adopting a domestically holistic approach towards creating an energy-efficient, eco-friendly and sustainable kitchen. The project transformed the conventional fuel-efficient stoves on-campus male students' kitchen into a green kitchen. The use of firewood is substituted by electric energy. The kitchen consumed 80 truckloads (1280 cubic meters) of firewood annually costing the college nearly Nu 1.12 million a year. The firewood supplied by the contractors from Government Reserved Forest in Gedu around Darla, Bongo, Dungna, Metabkha, and Getana Gewogs (county), falls in state reserve forest with rich flora and fauna. Conventional Kitchen was a direct threat to these natural reserves.

With the green kitchen, these trees and resources are saved. GCBS can thus contribute towards the vision of Gross National Happiness by conserving the environment.

The trees saved continue to remain as carbon sink<sup>3</sup> and help mitigate global warming<sup>4</sup> through carbon sequestration<sup>5</sup>; a process where emission of CO<sub>2</sub> into the atmosphere is reduced by storing the excess carbon or carbon dioxide in other media like the forests/trees, earth, and ocean. This enables GCBS to act locally to contribute globally by doing its small share in reducing its carbon footprint.

### Carbon sink and carbon sequestration

Forest acts as a sink by capturing carbon dioxide from the atmosphere and transforming it into biomass through photosynthesis, a process called carbon sequestration. Captured/sequestered carbon is then accumulated in the form of biomass, deadwood, litter and in forest soils.

The carbon is released from forest ecosystems through natural processes (respiration and oxidation) as well as deliberate or unintended results of human activities (burning wood, harvesting, fires,

and deforestation).

### The ill-effects of woodsmoke

The woodsmoke (indoor pollution) released from burning firewood is detrimental to the health of the cooks, the students, and the community. Many studies indicate that using wood as fuel releases harmful substances to the atmosphere. It is proven that wood smoke causes damage to the respiratory system and is also a cause of other related diseases of the lungs and heart<sup>6</sup>. Woodsmoke, like smoking, causes cancer.

Table 1 Cost comparison for one year

Conventional Kitchen	Cost (Nu) per month	Total Cost (Nu) per year	Green Kitchen	Cost (Nu) per month	Total Cost (Nu) per year
Electricity Bill	1665	19980	Electricity Bill	12110	145,320
Firewood	93,333	1,119,996	Heating coil for TBC*	24000	288,000
			Heating coil for TBP**	24000	288,000
			Regulator for both	16000	192,000
			TBC & TBP		
			Digital timer for both	20000	240,000
			TBC & TBP		
<b>Total</b>	<b>Nu 94,998</b>	<b>Nu 1,139,976</b>	<b>Total</b>	<b>Nu 96110</b>	<b>Nu. 1,153,320</b>

\*Tilting brat cooker for cooking rice

\*\*Tilting brat pan for cooking curry



The old cooking stoves





### Results and recommendation

From Table 1, it can be inferred that there is almost similar operational cost between conventional and green kitchen. However, indirect benefits such as energy efficient cooking leading to reduction in GHG emissions and thus contributing to environmental conservation, enhancement of health and well-being of the college community, pavement of environment-education by taking individual responsibility to reduce carbon footprint which are beneficial in the long run are achieved. The result could be used to inform stakeholders especially institutional kitchens to opt for green kitchen over conventional kitchen.



*The new conventional fuel-efficient stoves*

The year-long Green Kitchen Project was supported by the Royal Government of Bhutan and GEF- Small Grants Programme, UNDP.

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**Disclaimer:** *The views expressed in this article are those of the author/editors and do not necessarily reflect the official policy or position of any agency.*

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