Green Intelligence

REGENERATING PRODUCTIVE FOREST CHITWAN

Chitwan Nepal - bordering India, located 160km south from Kathmandu, the capital of Nepal. The Chitwan district is mostly known due the Chitwan National Park, one of the largest national parks in Nepal, home of a large number of wildlife, like the Indian Rhino, Leopard and the Bengal Tiger. Green Intelligence (GI) in collaboration with the Community Forest User Group (CFUG) and the Nepal Forest Department aims to restore Community Forests in Chitwan. This restoration is required due to the presence of toxic invasive species (up to 3m high) and degraded land in these community forest, and to aid new trees to grow (natural regeneration) and existing trees to survive.

Goal : Increase soil quality and biodiversity, store carbon, promote sustainable harvesting and generate income for local communities.

The Project

This project is a continuation of the plantation efforts initiated by Green Intelligence (GI) in 2022 and 2023. In 2024, GI has successfully planted >8,000 trees and aiming >1,000 trees via natural regeneration across >11 hectares of land. The project is implemented in collaboration with community forest user groups and Nepal forest department. The plantation occurs in three community forests: Kankali community forest, Thangkhola community forest, Shree Bandevi Barandabar buffer zone community forest, with a focus on enhancing local biodiversity, improving ecosystem health, and providing long-term benefits to the community. The project involves a diverse mix of native tree species carefully selected based on the specific needs of the local environment and ability to thrive in local condition. These species were chosen for their ecological value and potential to provide resources such as food, medicine, and additional income to local residents. The initiative aims to restore degraded lands, increase forest cover, and create productive forests that can support both nature and the local economy.

Prior to the plantation, the GI team conducted training sessions for over 60 community members. These sessions covered essential topics such as pit sizing, proper fertilization, tree spacing and species-specific planting techniques. This training ensured that community members were well-equipped to participate in the plantation activities and manage the trees effectively in the long term. All activities were carried out in close collaboration with the community forest user groups which played a crucial role in mobilizing participants, co-managing the plantation events, and providing ongoing support and communication. GI plays a vital role for the project's success, as it ensures continuous monitoring and guidance for the community, fostering a sustainable and resilient forest ecosystem.

Projects Interventions

This project aims to restore degraded land, control invasive species and create productive forests. Key interventions include planting diverse tree species, training > 60 community members on planting techniques, supporting natural regeneration, managing invasive species, and collaborating closely with Community forest groups and forest department. These efforts are designed to enhance ecosystem health and provide resources for the local community

Invasive bushes removal:
In the three community forests, the project addressed the challenge of invasive species that had overrun large areas, preventing natural regeneration and creating toxic conditions for local wildlife. The initial phase involved clearing these invasive species from the >11 hectare project area to prepare the land for planting.

Mixed Species Plantation :
The project carefully selected a mix of tree species, with the aim to provide food, fodder and income to the community and increasing local biodiversity. More than 8000 trees were planted, which includes: Amala, Tejpat, Neem, Morings, Bel, Harro, Barro and Imili. These species all have a specific value to both the community as nature, see tree selection in table below. Prior to the plantation, the GI team provided training related to pit sizing, mixing fertilizer, spacing in between the trees, and how and where to plant the different tree species.

SPECIES	User	
	People	Nature
Amala, Neem, Moringa, Imili, Harro, Barro, Bel	Medicinal and Aromatic Plants	Biodiversity
Tejpat	Spices, Masala tea	Biodiversity

Additionally, a contract between GI and the CFUG is signed in which the different project roles and responsibilities are described and sustainable forest management practices is agreed upon.

Natural Regeneration:
This project emphasizes the importance of protecting natural regeneration, which is the process where native plants and trees naturally reseed and grow without direct human intervention. By creating favorable conditions, such as through site clearing and removing invasive species, the project supports the natural regrowth of vegetation. This approach, combined with active planting, helps restore the ecosystem more sustainably. By allowing well-adapted native species to re-establish themselves, the project enhances the health and resilience of the forest, ensuring long-term environmental stability.

Green Net fencing:
To protect the young trees from the wild animals in the forest, fencing is required for the trees survival in the first 2-3 years. A green net supported by bamboo poles was setup around the projects sites to protect against wild animals attacks.   We aim the fences to provide protection for the first 3 years after plantation, enough for the tree to overgrow the critical size where it can no longer die due to the impact of wild animals. See picture of the fence.

Thagkhola CF

The Thangkhola Community Forest (CF), located in Kalika Municipality, Ward no. 2, Chitwan district, Bagmati Province, Nepal, lies on the southern border of India. Green Intelligence (GI) has been actively involved in a restoration project within a 10-hectare area of this community forest. The project, initiated in 2022 and continued through 2023 and 2024, focuses on sustainable plantation practices. The efforts include site clearing, pit digging, and the planting of native tree species, with particular attention given to removing invasive species to ensure the health and growth of the newly planted trees.

Kankali CF

Kankali Community Forest, Located in Khairahani Municipality, Ward no.4, Chitwan district, Bagmati Province, Nepal, lies on the southern border of India. This community forest user group was chosen by Green Intelligence (GI) for a 4-hectare plantation project in 2024 due to its severely degraded land. Understanding the urgent need for restoration, GI initiated a project to revive the area. The work involved careful site clearing, pit digging, and planting native tree species. By focusing on removing invasive species, GI helped the newly planted trees establish themselves, supporting the recovery of the ecosystem and improving the forest's overall health and resilience.

Shree Bandevi Barandabhar Buffer Zone CF

Shree Bandevi Barandabhar Buffer Zone Community Forest, located in Bharatpur Metropolitan city, Ward no.9, chitwan District, Bagmati province, Nepal, lies on the southern border of india. In 2024, Green Intelligence (GI) Planted 8 native tree species at 2.5-hectare area of this community forest. On this site we focus on the natural regeneration of the Sal tree, by removing the invasive species to give space for regeneration (allow the natural sprouts to grow to an adult tree). Additionally we planted productive tree species on the site in between the natural regeneration.

Project Impact

The Green Intelligence, in collaboration with Community Forest User Group (CFUG) and the forest department, restores 11.5 hectare forest land in 3 community forest in 2024. In the project invasive species are removed and the plantation of more than 8000 seedlings of various productive species is conducted, additonally natural regeneration is stimulated. During the plantation phase of the project over 60 community members were hired (over 600 working days in total for each CF), they received a training how to plant and maintain trees. After completion of the plantation phase a forest guards /caretakers are hired for the caretaking of the trees for the initial years (2 years).

The project impacts the community by local job creation, directly benefitting its community members. After 3-6 years the different species start generating harvest, which will provide the community with a sustainable source of income. The income is equally divided amongst the >6000 community forest members, active in 3 community forest. The local ecosystem will be benefitting as well, the land is restored providing increased habitat to the various animal living in and around the Chitwan National Park.

In the current condition the invasive species don't allow natural regeneration of trees and other species. In the initial years of the plantation grasses, clover and other eatable species naturally return to the forest (already observed in the 2022 project within several months). These increases the grazing area for species like spotted deer and the Asian Rhino, footprints of both animals have already been spotted in previous plantation sites. The intervention also allows for the existing trees to further grow and natural regeneration of trees to happen. In the 2022 and 2023 Chitwan project more than 7 tree species naturally sprouted within a year, same impact is expected in this 2024 project. Additionally, after several years the project will generate fruits and nuts, which will provide food to various animal species within the forest. Due to the mix of species planted, soil quality is expected to increase allowing soil life to thrive and water absorption to increase, making the land more resilient to the changing climate and weather patterns.

>8000	12 ha	60	>6000	>1000
Trees	**Landscape restored**	**People trained**	**Households impacted**	**Natural Regeneration**

What is next

In June/July 2024, we initiated the removal of invasive species and planted new seedlings, marking the beginning of our restoration project. The first two years are crucial for the survival of newly planted trees, so we have hired full-time GI team members as a forest guard/caretaker to oversee weeding (removing invasive species) and watering the trees during the dry season (October - June), among others. Temporary watering infrastructure will be installed before the dry season starts. Selected trees will be labelled and geotagged (photographed with GPS coordinates) using the GI mobile app to monitor their growth and survival rates. Additionally, GI plans to expand its projects to Chitwan next year. New locations have already been scouted, and meetings with other Community Forest User Groups are currently underway.

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