

Beyond 315

**Building on NGC's
Reforestation
Programme**



Although forests are explicitly tied to one of the UN SDGs, these ecosystems can directly and indirectly support the achievement of other sustainability targets associated with health, food security and economic diversification.

In sustainable development discourse, forests are most often discussed in the context of carbon capture and storage strategies. Photosynthesis converts carbon dioxide into building blocks for plant tissue, actively sequestering carbon into plant biomass. The world's forests, therefore, serve as massive vaults for carbon, and crucial bastions of climate stability.

While indisputably important, the carbon storage potential of forests is but one of the features that make them valuable in the quest for sustainable development. The United Nations Sustainable Development Goals (SDGs) cover a range of environmental, societal, governance and humanitarian concerns, all integral to the future we envision for our planet. Although forests are explicitly tied to one of those goals, these ecosystems can directly, and indirectly, support the achievement of other sustainability targets associated with health, food security and economic diversification.

After managing a 315-hectare reforestation exercise, The National

Gas Company of Trinidad and Tobago Limited (NGC) is today looking to leverage that versatility of forests to support sustainability more holistically, through an extension of its project into a broader programme called 'Beyond 315'.

Leveraging the full potential of forests

In 2005, when NGC first launched its reforestation programme, the ecological benefits of restoring degraded forests were foremost considerations in the design of the project. Also built into the design were provisions for the empowerment of groups in project communities and the creation of longer-term employment opportunities.

This project has since delivered its target outcomes, positively impacting the site communities of Rousillac, Mayaro, Rio Claro, Moruga and Guapo/Parrylands in southern Trinidad. The benefits have also accrued at the national level, as carbon sequestered by the replanted forest is helping the country meet its emissions reduction targets (See Figure 1).

SUMMARY OF NGC REFORESTATION PROGRAMME OUTCOMES (NGC SUSTAINABILITY REPORT 2021)



ESTIMATED CO₂ SEQUESTERED ABOVE GROUND IN 2020

2,290 TONNES

ESTIMATED TOTAL CARBON SEQUESTERED ABOVE GROUND IN 2020

8,404 TONNES

ESTIMATED CO₂ SEQUESTERED BELOW GROUND IN 2020

595 TONNES

ESTIMATED TOTAL CARBON SEQUESTERED BELOW GROUND IN 2020

2,185 TONNES

2020 AREA MAINTAINED

79.25 HECTARES

NO. OF PLANTS RESUPPLIED FROM COMMUNITY NURSERIES

4,000

NO. OF PLANTS FROM NATURAL REGENERATION

3,086

FIRE TRACE CLEARED

4,633m

TOTAL ESTIMATED MANHOURS
7,508



NO. OF PERSONS EMPLOYED FROM COMMUNITY
38



The programme's success notwithstanding, NGC has recognised there are unleveraged opportunities to extract greater value for the country from its replanted forests, particularly through the integration of agroforestry and eco-tourism components. As such, the Company is currently pursuing the expansion of its reforestation exercise into a programme called 'Beyond 315'.

A look at agroforestry

One of the distinguishing features of the expanded reforestation initiative will be the incorporation of an agroforestry component.

The US Department of Agriculture defines agroforestry as "the intentional integration of trees and shrubs into crop and animal farming systems to create environmental, economic, and social benefits".¹ In essence, this is a cultivation practice that intersperses trees among food crops or pasture. It includes farming within forests or along forest boundaries, as well as planting of tree-crops such as bananas, citrus and cocoa.

Agroforestry is a highly effective farming strategy because of the specialist services rendered by trees. Trees help stabilise soil and build its organic matter, improving its overall quality for food production. Their canopies help protect against harsh sunlight and create microclimates that favour growth of certain crops. Forest biomes can support pollination and fertilisation of crops, and resident species can even be harnessed for food production, as with apiculture and the production of honey. Agroforestry also promotes sustainable land use, as trees renew soils and preserve natural habitats, where traditional agricultural practices often compromise both.

¹ <https://www.usda.gov/topics/forestry/agroforestry#:~:text=Agroforestry%20is%20the%20intentional%20integration,around%20the%20world%20for%20centuries.>



AGROFORESTRY IS THE INTENTIONAL INTEGRATION OF TREES AND SHRUBS INTO FARMING SYSTEMS

Importantly, agroforestry helps build the resilience of agricultural production and thereby contributes to food security. This is a major concern in modern society, especially given recent international developments.

On the heels of the COVID-19 pandemic which disrupted supply chains, the ongoing war between Ukraine and Russia is again roiling global markets. Broken supply chains, interrupted agricultural cycles and surging prices could soon precipitate food insecurity in import-dependent countries. Moreover, the convergence of this evolving conflict with rapidly devolving climate stability makes the outlook for food security even more precarious. Agroforestry systems can augment local food production and enhance food security in places like Trinidad and Tobago, where food import bills are chronically high.

The *outcomes* of agroforestry are not the only benefits to society. The process itself creates opportunities to engage and empower site communities, local farmers and co-operative groups, and even young entrepreneurs. The more participatory the process, the greater the socioeconomic value that can be created.

In designing its broadened 'Beyond 315' programme, NGC is taking all these benefits into account. The Company is also exploring the integration of hydroponic systems and digital container farming at its reforestation sites, as well as community-oriented gardens that allow local tourists to plant and pick their own crops. Adjunct programme objectives will include building capacity among community producers and other stakeholders to support or even administer these 'Beyond 315' initiatives.

Eco-tourism benefits

In addition to agroforestry, NGC is considering the integration of eco-tourism components to deepen the impact of its reforestation programme.

Forests and other natural enclaves are destinations of choice for people looking to escape routine, exercise in the outdoors, or simply recharge in nature. Walking and biking tours along nature trails are popular among all ages, billed as both getaways for adventurers and relaxation retreats. Environmental hobbyists such as bird watchers actively seek natural habitats to pursue their pastimes.



There is also a range of new recreational activities that leverage forest canopies, such as ziplining and ‘tree-walk’ canopy tours.

With urban sprawl increasingly encroaching on green spaces, carefully managed nature reserves are today premium real estate for the development of eco-sanctuaries. In light of this, NGC is exploring how it can leverage its reforested acreage to promote sustainable eco-tourism. The possibilities are as wide-ranging as they are exciting, given the gamut of recreational interests that can be accommodated. There are even

opportunities to build craft shops and cafés that market products harvested from the forest farms or created from sustainably sourced forest materials. The knock-on effects for local producers and artisans, their communities and the national economy are appealing benefits.

The impact on sustainability

While it is easy enough to conceptualise a project of this kind, there needs to be sufficient evidence of its value to justify investment in moving it off the page. Accordingly, NGC has sought to demonstrate how

the project can concretely support sustainable development.

At the COP26 climate conference, 141 world leaders made a pledge to halt and reverse forest loss and land degradation by 2030, in recognition of the centrality of forests, biodiversity and sustainable land use to the achievement of the UN SDGs. NGC’s ambitions under the ‘Beyond 315’ project echo this commitment and will support its fulfilment.

Going deeper, NGC has mapped the potential linkages between ‘Beyond 315’ and the SDGs at a more granular level. The tables below and on page 19 outline these linkages.




Zero hunger

Targets Applicable to Beyond 315

TARGET 2.3
By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

Linkage to Beyond 315

Opportunity to promote agroforestry to build resilience of local famers and boost local food production.



Good health and well-being

Targets Applicable to Beyond 315

TARGET 3.9
By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

Linkage to Beyond 315

Expanding reforestation into peri-urban areas can help improve air quality.

Green spaces can help with overall human health and well-being.



Clean water and sanitation

Targets Applicable to Beyond 315

TARGET 6.6
By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

Linkage to Beyond 315

Restoring tree cover can help improve watersheds and reduce soil erosion and sedimentation of surface water sources.



Sustainable cities and communities

Targets Applicable to Beyond 315

TARGET 11.6
By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

Linkage to Beyond 315

Expanding reforestation into peri-urban areas can help improve air quality.

Green spaces can help with overall human health and well-being.



Climate action

Targets Applicable to Beyond 315

TARGET 13.1

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

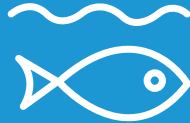
TARGET 13.2

Integrate climate change measures into national policies, strategies and planning.

Linkage to Beyond 315

Incorporating agroforestry can help with climate change adaptation and building resilience of food systems.

Supports achievement of Paris Agreement Nationally Determined Contributions (NDCs) through carbon sequestration.



Life below water

Targets Applicable to Beyond 315

TARGET 14.1

By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

Linkage to Beyond 315

Incorporation of agroforestry techniques in agriculture can help mitigate environmentally detrimental phosphorus and nitrogen flows from use of fertilisers.



Life on land

Targets Applicable to Beyond 315

TARGET 15.1

By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

TARGET 15.2

By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

TARGET 15.3

By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

TARGET 15.4

By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.

Linkage to Beyond 315

All these targets relate directly to potential benefits of reforestation activities.



Project next steps

Planning and development of NGC's expanded reforestation project is well underway. In 2022, the Company intends to complete project scoping; conduct stakeholder outreach to solicit feedback and input; onboard strategic partners and resources; and finalise targets and business plans. NGC will be working very closely with site communities during this planning phase to ensure the final project has the necessary local buy-in and that any potential concerns are identified and addressed prior to implementation in 2023.

Once realised, the evolution of NGC's reforestation exercise into the 'Beyond 315' initiative will represent another leap forward for the Company's green agenda. Apart from the environmental benefits of expanding the reforestation programme, greater public involvement in the programme's activities will have important implications for sustainable development. By creating positive and memorable experiences for people within these spaces, NGC will help build a culture of appreciation that is necessary for sustainability to be achieved - project participants

and visitors will see value in preserving green spaces and will likely be more attentive to how they impact nature.

This critical outcome is one that NGC is intent on achieving. As our windows for meeting time-sensitive sustainability targets become smaller, greater public awareness and participation in the campaign for sustainability give us the best chance for success. ■

