

हरित राजमार्ग HARIT RAJMAARG

A Commitment to Promote Environment Protection
and Sustainability



1. BACKDROP

Highways are acknowledged as the growth engine of economic development. National Highways account for only 2% of the Indian road network but carries 40% of the automobile traffic which signifies its importance in the economy of the country. Highways are not merely means of transportation but an integral part of the physical environment and socio-economic milieu.

Considering the importance of the road network in our lives and at the same time damage caused to the environment and nearby surroundings due to overuse of the road network, it becomes responsibility of the Governments, corporates and civil society to join hands to keep the highways green and beautiful negating the ill effects of vehicular pollution and felling of trees to build new highways which are carbon neutral.



2. GREEN HIGHWAYS POLICY

Ministry of Road Transport and Highways (MoRTH), Government of India realized the need and importance of developing green corridor along NHs and, in September 2015, promulgated **Green Highways(Plantations, Transplantations, Beautification and Maintenance) Policy-2015** to develop green corridors along NHs for sustainable environment and inclusive growth. The policy envisions participatory approach for development of green corridors along highways, which will help in sequestering GHG emissions and create millions of man-days' of employment.





VISION

To develop eco friendly National Highways with participation of community, farmers, NGOs, private sector, institutions, government agencies and Forest Department for economic growth and development in a sustainable manner.

OBJECTIVES

- ① To evolve a policy framework for plantation along National Highways;
- ② To reduce the impact of air pollution and dust as trees and shrubs are known to be natural sink for air pollutants;
- ③ To provide much needed shade on glaring hot roads during summer;
- ④ To reduce the impact of ever increasing noise pollution caused due to increase in number of vehicles;
- ⑤ To arrest soil erosion at the embankment slopes;
- ⑥ To prevent glare from the headlight of incoming vehicles;
- ⑦ To moderate the effect of wind and incoming radiation;
- ⑧ To create employment opportunities for local people;



3. GREEN HIGHWAYS DIVISION

National Highways Authority of India (NHAI) has created Green Highways Division (GHD) with a team of environment and forestry experts for planning, implementation and monitoring plantations programmes with the involvement of all stakeholders - concessionaires, private plantation agencies, NGOs and State Government agencies. In this regard, Project based collaboration is also envisioned with Corporates, PSUs and other plantation agencies willing to adopt/fund roadside plantations under their Corporate Social Responsibility Program.

4. PROJECT IMPLEMENTATION

NHAI has been undertaking plantation drives from time to time to develop eco-friendly National Highways and has constantly addressed ecological concerns by adopting environmental-friendly methods. In post policy years from 2016-17 to 2020-21, more than 2 crore plants have been planted. In the year 2021-22, NHAI plans to undertake a sustained plantation drive. The aim is to saturate all National Highway stretches with plantations, collectively by Concessionaire, State Government Departments and Private Plantation Agencies. Apart from plantation, NHAI is also emphasizing on transplantation of trees which are required to be axed for development of highways projects. NHAI is engaging experts from the plantation, forestry, agriculture, horticulture field with vast experience for guiding and overseeing these activities.



LONG TERM BENEFITS OF GREEN HIGHWAYS INITIATIVES:

- » Addresses all the three pillars of sustainability: Environment, Economy and Society.
 - » Build resilient ecosystem in the form of "Green Corridors" along NHs which helps in absorption of GHG gases and collection of dust particles.
 - » Improvement in micro-climatic conditions along National Highways: such as air quality, soil quality, temperature, biodiversity richness etc.
 - » Contribute to general health, and well-being of citizens living along the highways by arresting pollution, purifying the air and reducing dust and noise pollution.
 - » Contribute in creating an additional Carbon Sink through roadside plantations for fulfilling the commitment under Nationally Determined Contributions (NDCs) at CoP 21.
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- » Take up integrated green corridor development and management for upcoming highways projects
 - » Make green highways self-sustainable
Create sustained employment and livelihood
 - » Create platform for research and innovation in green pathways sector

ROADMAP FOR GREENING OF NATIONAL HIGHWAYS

5. MONITORING OF PLANTATIONS

5.1 Drone Videography

NHAI has adopted the latest technology of Drone Videography for regular monitoring of National Highways along with Plantation Stretches. It will bring transparency and uniformity while covering the entire National Highway stretches of Avenue and Median Plantations with minimal human intervention. Moreover, the Contractors/Concessionaires are bound to carry out mandatory monthly Drone Video Recording and upload the same in the Data Lake for capturing various project development phases.

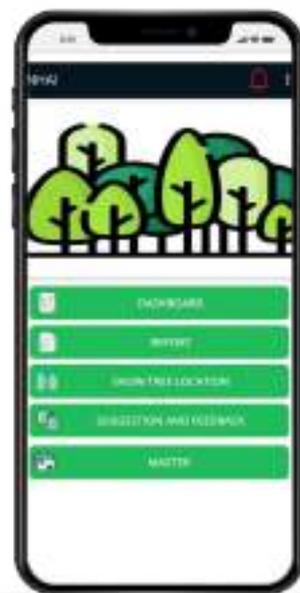


5.2 Data Lake

Data Lake is a Big Data Analytics Platform of NHAI wherein the Plantation data is also being uploaded every month for analysis and monitoring of all the projects. The data is carefully entered at each Program Implementation Unit (PIU) every month which is then verified at Regional Office level in order to ensure correctness and reliability of the data uploaded. It provides all the relevant information about the project e.g. chainage wise plantation details, species planted, IRC target, plantation done etc. This data is further utilized by Joint Advisors (Plantation) and Young Professionals (Plantation Manager) to bring out necessary analytics for improving the overall plantation works along the National Highways.

5.3 Geo-Tagging

NHAI has launched 'Harit-Path' mobile app which provides digital address to every plant planted along the National Highways. The GPS based app was developed by NHAI to monitor location, growth, species details, targets and achievements etc. under all plantation projects. In order to track the growth and health of the plants, data of the plants captured using Haritpath is uploaded on NHAI's Big Data Analytics Platform- Data Lake. Till now approx. 1.60 Cr plants have been geo-tagged within the Right of Way (ROW) of National Highways.



5.4 Field Inspections by Joint Advisors (Plantation) and Young Professionals (Plantation Managers)

NHAI has engaged Joint Advisors (Plantation) and Young Professionals (Plantation Manager) in all the Regional Offices whose primary task is to regularly monitor the plantation activities under their jurisdiction. They visit the plantations on the National Highways regularly and provide necessary guidance to the front-liners. Due to the regular inspections, the actual condition of the plantations in the field done by the Concessionaires/Plantation Agencies is checked and necessary corrections are made to improve them.

GREEN HIGHWAYS PLANTATION PROGRESS



Fresh Plantation on National Highways, 2021-22				
Sl.No.	Regional Offices	Progress of Plantation upto December, 2021 (No of plants in lakhs)		
		Avenue	Median	Total
1	RO-Bengaluru	1.30	2.16	3.46
2	RO-Bhopal	1.92	2.56	4.48
3	RO-Bhubaneswar	2.43	1.30	3.73
4	RO-Chandigarh (HR)	1.00	0.59	1.59
5	RO-Chandigarh (PB)	1.68	0.81	2.49
6	RO-Chennai	0.32	0.27	0.59
7	RO-Dehradun	1.40	0.73	2.12
8	RO-Delhi	2.09	5.49	7.59
9	RO-Gandhinagar	0.57	1.63	2.20
10	RO-Guwahati	1.01	0.72	1.73
11	RO-Hyderabad	0.47	1.40	1.86
12	RO-Jaipur	3.17	4.18	7.35
13	RO-Jammu	0.11	0.28	0.39
14	RO-Kolkata	1.64	0.74	2.38
15	RO-Madurai	0.46	1.21	1.67
16	RO-Mumbai	1.03	2.47	3.50
17	RO-Nagpur	2.13	2.18	4.31
18	RO-Patna	1.07	0.96	2.03
19	RO-Raipur	0.66	0.28	0.94
20	RO-Ranchi	1.32	1.21	2.53
21	RO-Shimla	0.47	0.25	0.71
22	RO-Thiruvananthapuram	0.04	0.19	0.24
23	RO-UP East	1.07	2.12	3.18
24	RO-UP West	0.54	1.61	2.16
25	RO-Vijayawada	0.42	1.13	1.55
	Total	28.30	36.47	64.77



PLANTATION ACTIVITIES UNDERTAKEN BY NHAİ'S REGIONAL OFFICES (RO)



















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