

**BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, NEW DELHI**

Original Application No. 60 of 2015

IN THE MATTER OF :

**Suo Moto
(Reg. 450 trees to be shifted for Qutab Golf Course facelift)**

**CORAM : HON'BLE MR. JUSTICE SWATANTER KUMAR, CHAIRPERSON
HON'BLE MR. JUSTICE M.S. NAMBIAR, JUDICIAL MEMBER
HON'BLE MR. DR. D.K. AGRAWAL, EXPERT MEMBER
HON'BLE MR. RANJAN CHATTERJEE, EXPERT MEMBER**

	Date and Remarks	Orders of the Tribunal
	February 27, 2015	<p>A news report in the Times of India with the caption “450 trees to be shifted for Qutab Golf Course facelift” has been brought to our notice. It reveals that the Qutab Golf Course to give Campus a facelift will transplant as many as 450 trees. The trees proposed to be transplanted appear to be more than 10 years old. It is further stated that the forest department has already granted permission to retransplant the trees however, the forest officials are certain that many trees would not survive and the cost element also being a relevant consideration, and hence there is every possibility that all these trees will be cut. Obviously, if 450 trees are uprooted, destroyed or fell, it will have a serious impact on environment and ecology of the area.</p> <p>Trees are a source of great benefit to the society at large. <i>Inter alia</i> we may notice the following:-</p> <p style="text-align: center;">“IMACT OF TREE FELLING ON ENVIRONMENT</p> <p><i>Trees play a very important role in maintaining the ecological balance in the biosphere. <u>SINCE THE BEGINNING, TREES HAVE FURNISHED US WITH TWO OF LIFE'S ESSENTIALS, FOOD AND OXYGEN.</u> On an average, one tree produces nearly 260 pounds of oxygen and absorbs up to 48 lbs of carbon dioxide a year. <u>WITH THE EVOLUTION OF HUMAN CIVILIZATION CONTRIBUTION</u></i></p>

OF TREES IN MAKING OUR LIFE COMFORTABLE INCREASED SEVERAL FOLD, I.E., THEY PROVIDE US NECESSITIES SUCH AS CLOTHING, SHELTER, MEDICINE, AND TOOLS. TODAY, THEIR VALUE CONTINUES TO INCREASE AND MORE BENEFITS OF TREES ARE BEING DISCOVERED AS THEIR ROLE EXPANDS TO SATISFY THE NEEDS CREATED BY OUR MODERN LIFESTYLES.

TREES CONTRIBUTE TO OUR ENVIRONMENT BY PROVIDING OXYGEN, IMPROVING AIR QUALITY, CLIMATE AMELIORATION, CONSERVING WATER, PRESERVING SOIL, AND SUPPORTING WILDLIFE. DURING THE PROCESS OF PHOTOSYNTHESIS, TREES TAKE IN CARBON DIOXIDE AND PRODUCE OXYGEN WE BREATHE. They provide us with fresh air to breathe, shade in summers, food, and other benefits without which we cannot even think of living. TREES CONTROL CLIMATE BY MODERATING THE EFFECTS OF THE SUN, RAIN AND WIND. LEAVES ABSORB AND FILTER THE SUN'S RADIANT ENERGY, KEEPING THINGS COOL IN SUMMER. TREES ALSO PRESERVE WARMTH BY PROVIDING A SCREEN FROM HARSH WIND. IN ADDITION TO INFLUENCING WIND SPEED AND DIRECTION, THEY SHIELD US FROM THE DOWNFALL OF RAIN, SLEET AND HAIL.

TREES LOWER THE AIR TEMPERATURE AND REDUCE THE HEAT INTENSITY OF THE GREENHOUSE EFFECT BY MAINTAINING LOW LEVELS OF CARBON DIOXIDE. Both above and below ground, trees are essential to the eco-systems in which they occur. Far reaching roots hold soil in place and fight erosion. Trees absorb and store rainwater which reduce runoff and sediment deposit after storms. This helps the ground water supply recharge, prevents the transport of chemicals into streams and prevents flooding. Fallen leaves make excellent compost that enriches soil. In the present day scenario trees in Urban Environments help in muffling the urban noise. In Suburban Environments they help in providing shade canopy and noise buffers and also congenial habitat for suburban wildlife, while in the rural environment they protect the crops from wind, control erosion and create diverse plant and animal habitats.

Despite knowing the importance of trees, human beings are still cutting down the trees and forests have started depleting from this beautiful earth. Deforestation has the following dangers:

➤ **Destruction of carbon sinks:**

Carbon sinks are huge stores of carbon. Large quantities of carbon are trapped by plants in general and trees in particular in the body biomass thereby helping in balancing the carbon dioxide content in the biosphere. Mature trees hold large quantities of carbon. Each acre of the forest has been taking roughly 0.75 metric ton of carbon out of the atmosphere annually, doing its humble part to counteract greenhouse warming **[The Case of Missing Carbon: National Geographic]**. A mature tree can absorb up to 48 lbs of carbon dioxide a year (McAliney 1993). In fact, large trees at maturity can store approximately 1000 times more carbon dioxide than saplings (Nowak 2001). This difference highlights the importance of maintaining large tracts of healthy, mature forest, which will be much more useful in establishing carbon sinks than planting saplings **[Ravin, A & Ranie, T: Best Practices for Including Carbon Sinks in Greenhouse Gas Inventories]**.

When a tree is felled and burnt the carbon present in its body gets converted back into

carbon dioxide and is released into the atmosphere. Timber extraction may only represent a comparatively small return of carbon to the atmosphere: wood does not release CO₂ until it decomposes or is burnt. The oxidation of leaf litter and surface soil biomass in felled areas will add to net emissions in the short term. Where re-growth or restocking does not take place, there is a potential net loss of 50 t C/ha [Environmental impacts of land management; Natural England Research Report NERR030; pp 131 – 142].

➤ **Soil Erosion:**

Deforestation makes soil prone to erosion by agents such as wind and water. The roots of trees hold the particles of soil together, thus preventing the fertile top soil from being carried away. Soil erosion leads to loss of productivity of the land due to loss of mineral nutrients and soil microorganisms

➤ **Destruction of animal habitats:**

Apart from domesticated animals and marine and fresh water animals, all other animals need forests as their habitats. These forests do not only provide a place for the animals to roam around but also provide their food and act as a source of protection from predators through camouflage. Actually each plant/tree provides a unique microhabitat of a great array of macro and microscopic animals and when it is felled these organisms are significantly affected. Destruction of the animals' habitats literally kills the animals.

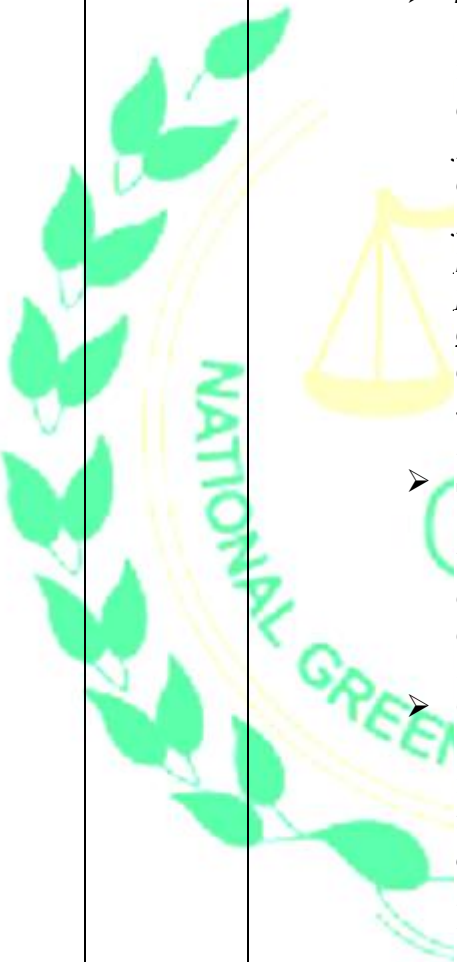
➤ **Source for medicine:**

Many plants/trees are a source of important medicines used for the treatment of diseases in case of human beings as well as domesticated animals. Destruction of such trees leads to destruction of such medicines.

➤ **Greenhouse effect and global warming:**

Nature balances the flow of energy and nutrients. Trees and forests play a very vital role in the flow of energy and cycling of nutrients like carbon, nitrogen, phosphorus, etc., in the biosphere. Destruction of trees/forests results in the disturbance in the natural balance in the cycling process of various nutrients. For example, recent calculations suggest that carbon dioxide emissions from deforestation and forest degradation (excluding peat land emissions) contribute about 12% of total anthropogenic carbon dioxide emissions with a range from 6 to 17% [van der Werf, et al. (2009). "CO₂ emissions from forest loss". *Nature Geoscience* 2 (11): 737–738]. Deforestation causes carbon dioxide to linger in the atmosphere. As carbon dioxide accrues, it produces a layer in the atmosphere that traps radiation from the sun. The radiation converts to heat which causes global warming, which is better known as the greenhouse effect.

Destruction of forests also causes



modification of climate of an area mostly leading to desertification and aridity.

➤ **Trees, and plants in general, affect the water cycle significantly in a number of ways**

- The tree canopy intercepts precipitation, and a part of it is in the process evaporated back to the atmosphere;
- Tree litter, stems and trunks slow down surface runoff;
- their roots create macropores – large conduits – in the soil that increase infiltration of water;
- they contribute to terrestrial evaporation and reduce soil moisture via transpiration;
- their litter and other organic residue change soil properties that affect the capacity of soil to store water.
- their leaves control the humidity of the atmosphere through the process of transpiration [Scherer et al (2013)

Soil, Water and Plant

Characteristics Important to Irrigation, North Dakota State

University, Fargo, North Dakota].

Chopping down vast swathes of forest is known to have an effect on climate, but what is the impact of cutting down a handful of trees? A recent study by Zhang et al. (2014) shows that even small-scale land clearance – a few hectares or less – causes a noticeable change in local temperature. According to climate models, tropical deforestation causes warming, while loss of forest at high latitudes brings about cooling. The transition from warming to cooling occurs at latitude of around 35°. But most land-use change occurs at far smaller scales: To see whether the loss of only a few trees has any impact on the climate of an area Zhang et al (2014) studied 40 locations across North and South America and 12 locations in Eastern Asia [Zhang et al. (2014). **Response of surface air temperature to small-scale land clearing across latitudes. Environ. Res. Lett. 9 (3): 7pp].** They observed that at tropical and subtropical latitudes (15°S to 20°N) local deforestation caused a warming effect of more than 0.5 °C on daily maximum temperature. In boreal latitudes (over 45°N and S) a cooling effect of nearly 1 °C on daily minimum temperature was reported. The team found that small-scale deforestation has the greatest localized warming effect in the tropics – between 10°N and

10°S. After that the impact decreases, switching to a cooling effect at latitude of around 35°.

Research also suggests probable increases in understorey native plant cover and richness after tree overstoreys are mostly or completely removed. As the pattern of the plant cover changes, it affects the composition of the faunal assemblages in the area as well [Abella, S. R. & Springer, J. D. (2014), **Effects of tree cutting and fire on understory vegetation in mixed conifer Forests; Forest Ecology and Management (2014)19pp**]. Generally, species favoring closed-canopy conditions with larger diameter trees are negatively affected when cutting results in grasslands or oak woodlands with small diameter trees and open canopies. Conversely, species favoring grasslands or very open woodland are positively affected.

Felling of individual trees tends to be most significant outside woodland because the individual trees themselves, particularly veteran trees, are critical to the interest, for example in orchards, hedges and parkland [Read, H. (2000), **The veteran tree management handbook (Peterborough, English Nature, 2000)**”

In view of the above and invoking the precautionary principle, we direct issuance of notice to NCT of Delhi, through the Chief Secretary, DDA through its Vice Chairman and Forest Department, NCT of Delhi through its Secretary Forest.

Notice returnable on 13th March, 2015.

Notice shall be issued without process fee by the Registry today itself.

.....,CP
(Swatanter Kumar)

.....,EM
(M.S. Nambiar)

.....,EM
(Dr. D.K. Agrawal)

.....,EM
(Ranjan Chatterjee)