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Research Paper

Day Driving To Control The Carbon Emissions From Transports: Perspective of Ecotourism

Wildlife

KEYWORDS : carbon cycle, day-driving, ecotravelling, ecotourism, ecomotels, greenhouse gas,

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ABSTRACT

The present paper focuses on the untouched side of environmental conservation techniques by promoting ecotravelling and ecotourism. Day driving is very popular in many countries but it couldn't get recognition throughout the world because it was happening unintentionally more in regards to environment protection. But now its time to generate awareness regarding its scientific benefits for human beings and environment. The paper is based on observation at local level and view expressed by some research scholars of environmental science as well as secondary data collected from some reports online through websites.

INTRODUCTION

Controlling the growth rate of carbon emissions and emissions of other toxic gases in the environment has become a mammoth and challenging task for environmentalists, scientists and other conscious people of this world for whom environmental degradation is suicide and equal to genocide. Globalization and advancement of science and technology has been contributed more negative impacts then positive through production of weapons, missiles, guns, bombs and high speed vehicle with more noise in atmosphere beyond its controls.

Advancement in transport technology has speedup the economic growth due to excess mobility of people and movement of goods from one place to other but at the same time generated excessive pollution in the air. Bus, car, rail, airoplane, and big cruise lines are the best innovative contribution of science and technological development to this world. People can move easily from one destination to other destination in fastest way within an hour or few minutes. At the same time it has provided a huge comfort to travellers, businessmen, professionals and tourists. But the amount of pollution generated by these means of transports is unbearable to nature and its environment . One vehicle(bus,truck, car or bike), vessels(cruise) or air carrier (airoplane) generates almost three types of pollutions i.e. *sound pollution* and *air pollution* directly and *water pollution* directly or indirectly (through toxic rain).

1.1. Key Questions are,
Q. Do we think on this issue seriously ?
Q. What can be one of the solution of this problem ?

The present paper takes on some issues which is directly and indirectly linked with travelling by means of various transports. It focusses on balancing theory of conservation and protection of environment through human efforts. And those efforts would be successful if, we follow some good and effective principles to improve our lifestyles like "day driving".

1.2. DAY DRIVING - It not only saves fuel(energy) but also minimizes chances of loss of life such as human, animals, plants, and other endanger species crossing the road during night and killed due to accident in poor visibility condition. Night has visibility problem always.

Scientifically, during night plants(main producer of oxygen and food) also takes rest, so if, people will drive during night then they will disturb them by light, sound, and carbon emissions. As sun is not present in night so there will be no photosynthesis to evolve fresh oxygen. As living beings plants intakes oxygen in night and releases CO2. So there will be excessive carbon dioxide during night.

Night driving adds more carbon emission to the atmosphere and also it creates disturbance through sound pollution.
Therefore, day driving can be considered as one of the solution of this problem as it would not only decrease the pollution level from the environment but would also boost the tourism business on highway particularly for motels due to more night stay of travellers.
It will also improve the air quality and weather condition in night due to which day will be pleasant.

Country like Ethiopia has day driving system. People says it may be due to some other problem but whatever be the reason, impact of day driving can be seen on environment. Its environment is more clean then any other country where day driving is not popular. However in some areas pollution is growing due to excessive deforestation and burning of forests for agricultural land and habitat. Even for cooking and other business purposes they are burning wood. But if government will focus on day driving intentionally then it will promote ecotourism with huge employment opportunities and also will clean the environment.

1.3. VARIOUS REPORTS ON CARBON EMISSION (some facts)

1.3.1. European Union(EU)--Road transport contributes about one-fifth of the EU's total emissions of carbon dioxide (CO2), the main greenhouse gas.
Light-duty vehicles – cars and vans – produce around 15% of the EU's emissions of CO2.
Heavy-Duty Vehicle (HDV)-Trucks, buses and coaches produce about a quarter of CO2 emissions from road transport in the EU and some 5% of the EU's total greenhouse gas emissions – a greater share than international aviation or shipping.
EU legislation requires the greenhouse gas intensity of vehicle fuels to be cut by up to 10% by 2020.

1.3.2. THE CARBON CYCLE

Almost all motor vehicles today burn some kind of "hydrocarbon" fuel be it gasoline, diesel fuel, propane or alcohol. A hydrocarbon is any substance that contains hydrogen and carbon. This includes crude oil, gasoline, diesel fuel, natural gas, coal, wood and even you and me. In other words, hydrocarbons are the chemical building blocks of all living matter past and present. The crude oil we pump from underground today came from ancient peat bogs and forests from millions of years ago -- or so the theory goes.
When anything that contains hydrocarbons is burned, the bonds that bind the hydrogen and carbon atoms together are broken. This releases heat energy, which can then be put to use to power a motor, heat a boiler, cook a meal or whatever. Burning also causes the hydrogen and carbon atoms to combine with oxygen in the air forming water vapour (H20) and carbon dioxide (CO2). That's the basic chemistry of all combustion.
Water vapour is no problem because two-thirds of the Earth's surface is covered with it. So what's a little more? The problem is carbon dioxide. CO2 is a colorless, odorless, nontoxic, harm-

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less gas. Human beings and animals exhale carbon dioxide with every breath they take. Add to this all the CO2 that's being produced by every motor vehicle that's being driven, by every furnace that's burning some type of fuel, by every flame that's burning anywhere in the entire world and it adds up to zillions of tons of CO2.

Were it not for plants, we all would have suffocated in our own CO2 a long time ago. Fortunately, plants have the ability to absorb CO2 from the atmosphere and convert it back into organic carbon compounds (hydrocarbons) that become part of the plant. The process requires sunlight and is called "photosynthesis." At the same time, plants release oxygen back into the atmosphere, which we can then use to breathe and burn up more hydrocarbons.

Back to CO2. Historically, the amount of naturally occurring CO2 in the atmosphere has been 290 parts per million (only 0.0003%). Air is mostly nitrogen (78%) and oxygen (21%). CO2 is not a pollutant in the traditional sense, but it does retain heat in the Earth's atmosphere. That's why scientists refer to CO2 as a "greenhouse gas." It traps and holds heat just like the glass in a greenhouse.

Based on analysis of air bubbles trapped in ice cores taken at the north and south poles, scientists say the level of CO2 has been gradually rising since the dawn of the Industrial Revolution in the 1700s. When people started burning wood and coal to fuel industrial steam engines and heat their homes, CO2 levels started to rise and have been going up ever since. And since World War II, the rate of increase has been accelerating at an ever quickening pace. The latest count puts CO2 at over 360 parts per million (about a 25% increase).

As CO2 levels continue to rise, scientists fear it will cause a gradual warming of the Earth's average temperature -- which they say has already gone up almost a couple of degrees based on historical data. This, they say, has the potential to upset ocean currents, global weather patterns and rainfall -- which may have far reaching and negative consequences for agriculture, fishing and life in general. Some fear it may even lead to a melting of the polar ice caps causing the oceans to rise and flood coastal areas.

1.3.2.1. KYOTO PROTOCOL

Concerns over such dire predictions lead to a world summit meeting in Kyoto, Japan in December, 1997. The outcome of this meeting was a proclamation calling for significant reductions in CO2 emissions by industrialized nations as well as developing nations. The Kyoto Protocol, as it was called, has yet to be finalized.

To reduce CO2 emissions from cars, we would have to **drive smaller**, more fuel efficient cars, raise the fuel economy requirements for trucks, and adopt a variety of conservation measures to reduce energy consumption.

1.3.2.2. SUVS VERSUS TREES

If cars and trucks put carbon dioxide into the atmosphere and trees remove it, how many trees does it take to offset the carbon released by one sport utility vehicle?

One gallon of gasoline weighs about 6.2 lbs. Of that, over 5 lbs. is carbon (the rest is hydrogen). According to the EPA, burning one gallon of gasoline produces about 19.4 pounds of carbon dioxide (CO2).

If a SUV that gets 15 mpg is driven 15,000 miles a year, it will burn 1,000 gallons of gas. That puts about 19,400 lbs. of carbon into the atmosphere (combined with oxygen as CO2).

A mature tree 40 to 50 feet high weighs around 10,000 lbs. Of that, at least 7,000 lbs. is organic carbon compounds (the exact amount will vary depending on the species and the density of the wood). To reach this size, most trees need 30 to 40 years of growing time. This too will vary depending on the species of tree, its geographical location, soil conditions and weather. Trees in hot, wet tropical climates grow a lot faster than trees in northern climates.

Assuming these estimates are reasonably accurate, one to two mature trees contains about as much carbon as the gasoline burned by a typical SUV in a year.

But remember it takes 30 to 40 years for the tree to absorb all that carbon from the atmosphere. The process of "photosynthesis" takes time. Leaves use sunlight and water to convert CO2 from the atmosphere into sugar that the tree uses to grow and build more wood fibre. The tree's average carbon uptake, therefore, may only be about 200 lbs. of carbon a year.

To offset the carbon released by driving a SUV 15,000 miles a year, therefore, it takes at least 35 medium-sized healthy trees to convert CO2 into wood.

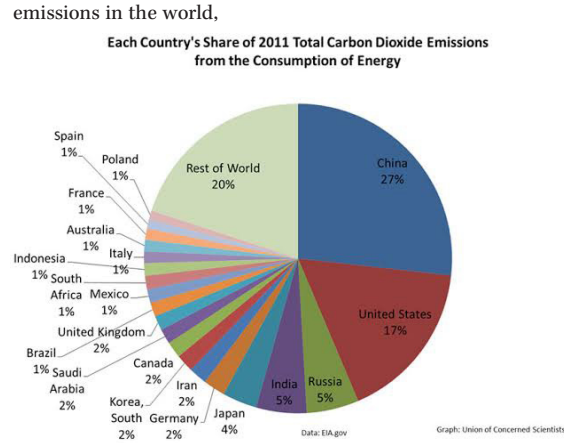
What happens to the carbon once it's been taken out of the atmosphere by the trees and bound up in the wood? It stays there until something happens to the tree.

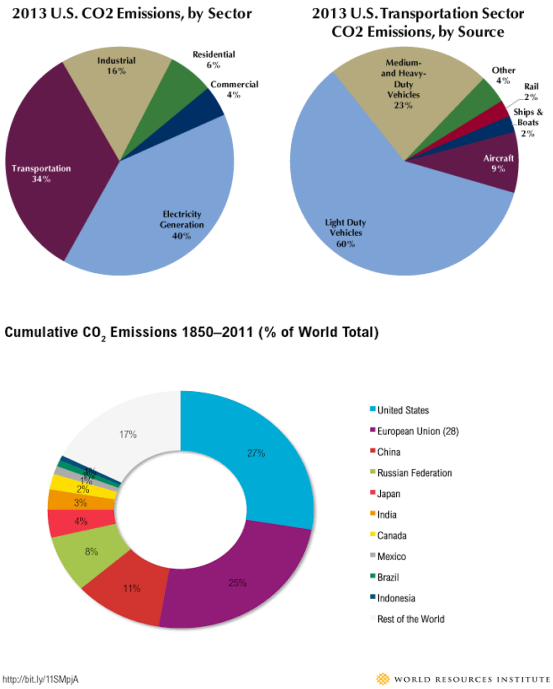
But if the tree is destroyed in a forest fire, is burned to clear land or is cut for firewood, all of the carbon that's been stored in the tree since it was a sapling is immediately released back into the atmosphere as CO2. Consequently, burning a tree is the carbon equivalent of driving a gas-guzzling SUV for a year

1.4. UPGRADATION OF GREEN TECHNOLOGY IN VEHICLES

Clean and green technological upgradation in vehicles, air carriers and cruise liners would ofcourse improve the air quality of atmosphere but following eco-friendly principles like Ecotravelling, eco-business and ecotourism will not only decreases the percentage of hazard gases but would also be able to sustain in long term as such principles generate more awareness among people and follows the sustainable development concept. We should never forget here that " prevention is better than cure". Therefore instead of focussing on new type of vehicle like electric, solar, battery or something else, its better to look into the "Day Driving" concept and its implementation as policy to improve our environment.

The following charts tells about the increasing rate of carbon emissions in the world,





1.5. SUGGESTIVE FRAMEWORK -

(i) Day Driving Only: Driving during day time only and taking rest in night at some roadside/highway motels.
(ii) No Night Driving (except in some emergency cases or urgent need).
(iii) Minimum Use of Horn- plants and some species are very sensitive to sound. It may kill them also or it may even result in fall of big trees. Various research in science has already proved it.
(iv)No Overloading- overloading from carrying capacity is hazardous for both soil and atmosphere. Over Loaded vehicles produce more sound, more carbons and consumes more fuels at the same time it exerts more pressure on earth's upper surface and breaks the structure.
(v) Planting at least 10 trees after every 2000 kilometres of driving. And getting certificate of plantation from certified authority (town/vilkage municipal commission) or block/district agricultural /horticulture department.
(vi) Insisting others also to follow the same principle(day driving) or else keeping distant from such people.
(v) First priority is to establish "Day Driving & Ecotravelling Cell" or in every village/town/ district /country for the verification, vigilance of driving and also issuing of "Ecotraveller Certificate" to the people follow the principle. This cell will give reward to ecotraveller and punishment(to plant 30 trees or contribute to natures conservation activities) to law breaker(regular travellers).
(vi) Membership scheme for all travel and tour operators. And benefits in tax holiday involving them through various environmental conservation activities .
(vii) Separate schemes and benefits for industrial logistic and supply chain department for following the day driving and no- overloading principles. Schemes may be tax subsidy or other way incentives.
(vii) Involving different NGOs at local level to monitor and facilitate the smooth day driving process.
(ix) Deputing Highway Patrolling Police, Airlines Traffic Controllers or Airport Managers, Cruise Line Operators or Harbour Masters for such type of monitoring and evaluation jobs.
(X) Cruise liners may go for night fleet also as it has to travel through dense water most of the time and sometime due to uncontrollable circumstances such as tides, storm etc. it becomes difficult to reach to nearest mainland area. And anchoring in dense see during night is dangerous.
(xi) Airlines may be allowed to fly in night hours as it fly at very high altitude but again generates more pollution in the air so to compensate it they have to plant more tree on ground and has to take care for zero pollution on ground handling system.
(xii) Individual and Independent Membership schemes for the people driving their own vehicles personally. They may be rewarded or promoted as an ambassador of "Day Driving Eco-travellers" . Here we need to redesign the concept of ecotourism and ecotravelling.
(xiii) Eco-motel concept need to be developed and motels following the norms of ecotels and sustainable development should be given the status of "eco-motels" and incentives or tax benefits must be given to them with award.
(xiv) Best Day Driving Destination trophy - need to be given to the local authority and local people together for their rigorous efforts and contribution to clean and green environment through day driving.
Note: With fewer trees left to absorb carbon and more vehicles producing carbon, don't expect the atmosphere's carbon balance to improve any time soon.

1.7.SOME IMPORTANT TERMS

1.7.1. **Ecotourism** : "Responsible travel to natural areas that conserves the environment and improves the well-being of local people." The International Ecotourism Society(TIES, 1990) Principles of Ecotourism: Ecotourism is about uniting conservation, communities, and sustainable travel. This means that those who implement and participate in ecotourism activities should follow the following Eco-tourism principles: Minimize impact. •Build environmental and cultural awareness and respect. •Provide positive experiences for both visitors and hosts. •Provide direct financial benefits for conservation. •Provide financial benefits and empowerment for local people. •Raise sensitivity to host countries' political, environmental, and social climate

1.7.2. **Ecotraveller/ Ecotourist**-more educated than other tourists, with an interest in learning about the environment. Eco-tourists tend to travel all year round and are not as seasonally biased. Preferred ecofriendly vehicles most of the time and more likely to be involved in pro-environmental behavior at home such as recycling household waste; purchasing green products;many of them belong to conservation organizations; but are not necessarily active in them- having a more intellectual interest in the environment rather than hands-on experience . AccommoDation Preferences–More interested in specialist accommodation in a natural and ecofriendly setting than traditional star rated hotels.

1.8. CONCLUSION

Day driving can be considered as an important principles through which carbon emissions and emission of other gases minimized. Many country have been following day driving system since a long time intentionally or unintentionally. But its time now to think it intentionally and innovatively. Global warming is growing challenge for every one. It may help upto certain extent. It may not be acceptable for many countries particularly for developing countries as it will decrease the level of mobility of people, goods and services which will give impact on economic growth. But still we need to think on the line of sustainability and sustainable development . And it demands little sacrifice to conserve scarce resources. Initially it may not give very good result but in long term it would be excellent.

1.9. Scope of research- further study may be taken on this issue as a comparative study of two different destination and analysing its impact through day driving on ecology and environment. New models of ecotourism in scientific way can be developed which will generate a huge employment opportunities and rev-

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enue through such type of ecotravelling activities directly and indirectly by "clean and green ecosystem".

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