



**MOBIUS
FOUNDATION**

**A
B
C** **ACTION
BRINGS
CHANGE**



TO

SUSTAINABILITY

About Mobius Foundation

Mobius Foundation is a non-profit organization **working towards environmental** sustainability. In a world struggling with scarcity, the foundation believes that environmental conservation is the key to a better future and a greener planet.

It spearheads various educational programs in India, which include setting up a residential green school in Karnataka and a day school in Uttar Pradesh. It also promotes population stabilization and ecological conservation through 'Project Aakar' and 'Project Sanjeevani'.

Mobius Foundation is also organising an '**International Conference on Sustainability Education' (ICSE 2019) in the month of September, 2019.**

This conference **aims to bring experts in the field of Education for Sustainable Development, Climate Change Education and Environment Education from all around the globe on one platform** to discuss about the best practices in this field so that we can develop recommendations **for incorporation of Sustainability Education in the current school curriculum** to make the current generations aware about the existing environmental issues and in the process making sure this subject doesn't act as additional pressure on children. This conference is being organised jointly by Mobius foundation and The Climate Reality Project, India with the support of UNESCO, New Delhi office.

The Mobius Foundation has other projects, such as health camps, school support programs, solar street lights installation, toilet construction, and training & awareness programs on food safety and natural farming practices.

Committed To Build a Sustainable Future

Message from the Chairman



An ecosystem, a lifestyle, or a community that is sustainable is one which supports itself and its surroundings. Sustainability itself can be defined by three core elements, each of which must be considered in relation to others: **Environmental Protection, Social Development and Economic Development.**

The Mobius Foundation is focused on sustainability. **We must renew, re-use and replace the finite treasures of the only planet we have.** Schools should include environmental education, since the next generation will bear the brunt of the rape of our beautiful Earth.

For thousands of years, there were no air-conditioners, no cars, no planes. Humans survived. There were no power-stations and factories spewing smoke into the air, just so we can use electric fans, lights and synthetic fabrics. Our grandparents did not have refrigerators or air-conditions. They survived quite comfortably. People travelled, slowly, but what was the rush? Fields around the cities sent wheat, rice, pulses and vegetables on bullock carts. Earthen pots kept drinking water cool. **Our life styles today are not sustainable. Pollution leading to climate change has to have immediate attention.**

“SUSTAINABILITY” today is the need of the hour and not just a foundation, but every individual should work towards sustainable living. Our planet is at breaking point. But it's not too late to save it. I'm happy to present to you A-B-C (Action Brings Change) to sustainability. This book not only highlights the problem we are facing but presents a set of solutions which we can adapt to achieve a sustainable planet.

“Don't underestimate the power of your vision to change the world. Whether that world is your office, your community, an industry or a global movement, you need to have a core belief that what you do can fundamentally change the paradigm or way of thinking about problems.”

Sustain – Ability Sutra

People around the world depend greatly on the natural environment for their health and livelihoods— especially people in developing countries. A healthy environment supplies the necessities of life like water, food and air. It also provides resources for economic growth and the means to fight natural hazards. The well-being of developing countries is often linked to the state of the natural environment and the opportunities it offers.

Recently, many inter-connected environmental issues have been worsening globally.

Natural climate change existed since eternity but this change has been exaggerated since industrial revolution due to increase in anthropogenic greenhouse gas emissions. Impact of human induced climate change is wide and evident. Former UN Secretary-General Ban Ki-moon has rightly put that, **“We Are the First Generation that Can End Poverty, the Last that Can End Climate Change.”**

It's not just climate change but there is rise in environmental pollution, wildlife and biodiversity degradation, increasing problems of waste management, poverty, population explosion and many issues that we can name. All of these **problems are directly related to each other and so is there solution**. As urgently as we require stronger policies to be in place there are various small steps we as an individual can take leading towards sustainability of our planet.

ABC of sustainability is a concoction of problems of environmental and social degradation and solutions for environmental, social and economic sustainability. With this handbook we **encourage everyone to consider more seriously how they could contribute to bringing about the positive change needed in this new “Age of Climate Migration”** by engaging in one or more of these worthy, sustainable consumption choices, also by bringing others to conduct themselves responsibly for the environment.

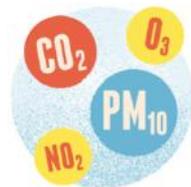
In this book we highlighted everything from basic lifestyle changes to small amendable actions which are contributing towards these problems. We have identified multiple causes and effects under each alphabet, but picked 3 most relevant and direct issue faced by human population and suggesting relevant actions which will bring about the necessary change.

A B C of Sustainability Sutra

A: **Agriculture, Acid Rain**, Awareness, Animals, **Air**, Anthropogenic Emissions,
B: Basic(S), **Bees**, Burning, Behaviour, Birds, **Biodiversity, Birth Defects**
C: Climate Change, **Coral Reef, Carbon Footprint**, Conservation, CFL,
Consumerism
D: Diesel, **Drinking Water, Deforestation**, DIY, Disasters, **Domestic Waste**
E: Energy, **Emission**, Education, Environment, **E-Waste, Ecosystem**
F: Fuel, Forest, **Fashion**, Fertilizer, **Fodder, Food**
G: **Green House Gases**, Glaciers, GM Food, **Global Warming, Ground Water**,
Gardening
H: Health, **Heat Wave**, Hurricanes, **Habitat, Happiness**, Habit
I: **Industry**, Innovation, **Investment**, Index, Infrastructure, **Incineration**
J: **Junk, Jobs**, Jewellery, Justice, June, **Jogging**
K: **Kyoto Protocol**, Knowledge, **Kitchen**, Khaki/ **Khadi**, Kerosene
L: Lakes, **Landfill, Livestock**, Lead Pollution, **Litter**
M: **Marine Ecosystem**, Manure, Methane, Minerals, **Micro-Plastic, Municipal**
Solid Waste
N: **Natural Disaster, Nutrients**, Nitrogen Footprint, **Noise**, Non-Renewable
O: Oxygen, Oil Spills, **Ozone, Ocean, Organic**
P: Population, **Paper, Plastic, Pesticides**, Poverty, Pollution
Q: **Quantity, Quality, Question**, Quest
R: Renewable, **Radiation**, Rivers, **Rain Water**, Reforestation, **3Rs**
S: **SDGs**, School, **Sanitation**, Smoke, Sea Level Rise, **Showers**
T: Toxic, **Technology, Transportation**, Trash, **Trees**, Temperature
U: **UV, Upcycle**, Utility, **UN- Environment**, UNFCCC, UNEP
V: Vehicles, Visibility, **Vision**, Ventilation, **Vegetables, Vehicular Pollution**
W: **Water**, Waste, Wealth, Women, **Weight, Worry**
X: **Xenobiotic, Xylenes**, Xenology, Xenophobia, **X-Mas Trees**
Y: Yeast, You, **Youth, Yoga**, Yarn, **Yield**
Z: Zero Emission, **Zero Waste System**, Zero Energy, **Zinc, Zoology**, Zika Virus



A





Acid rain has elevated levels of hydrogen ions (low pH). It can have harmful effects on plants, aquatic animals and infrastructure. It weakens trees by washing away the protective film on leaves, and it stunts growth. **Regulating the emissions from industrial burning of coal and other fossil fuels can reduce acid rain.**



GHG emissions by **agriculture contribute 25% of global GHG emissions.** **"Values-based" food supply chain** will help in lowering GHG emissions and **preserves the social, environmental, and community values** that are incorporated into production.



Worldwide, **1 in 8 deaths is caused by Air Pollution.** Ground-level ozone reduces crop growth and agricultural productivity. Let's keep air pollution in check. **Stop crop residue burning, some of the eco-friendly management are bedding material for cattle, fodder, packaging material, fuel, biogas generator, and bio-thermal power plants, for a sustainable environment and development.**





BEES

70 out of the top 100 human food crops – which supply about 90 % of the world's nutrition – are **pollinated by Bees**. We are **losing Bees due to pesticides and habitat loss**. Therefore we need to start preserving ecological habitat and **ban the use of dangerous pesticides**.

BIODIVERSITY

A cartoon illustration of a globe with a face, arms, and legs. It is holding a small globe in its right hand and a box labeled 'MEMORIES' in its left hand. The globe has some red and black marks on its surface.

Habitat loss is one of the biggest threats to biodiversity- it is the number one reason that species go extinct. Clearcutting forests to create fields, filling in wetlands to build houses, and creating dams that change river flow are all examples of habitat destruction. **Help Native Pollinators, Reduce or eliminate pesticides and fertilizer, Restore habitat in your yard or community.**

BIRTH DEFECTS

A blue fetus is shown in profile, looking towards a globe. The globe is partially transparent, revealing a scene of environmental destruction with smoke and fire. A red dashed line is on the left side of the text.

About 10% of birth defects are caused by environmental factors such as infection, radiation, and drugs. These environmental factors can cause death, severe birth defects on the developing baby, depending on when the exposure occurs during pregnancy. Birth defects can be prevented by avoiding environmental chemicals, switching to natural household cleaners, natural personal-care products etc.





CARBON FOOTPRINTS

The amount of CO₂ released into the atmosphere as a result of our activities is called carbon footprint. The average Indian will have effectively emitted **1.2 metric tons** of CO₂ in a given year. Instant Ways To Reduce Your Carbon Footprint: **Stop Eating (or Eat Less) Meat, Don't Buy "Fast Fashion", DO Plant a Garden, Eat Local (and Organic), Line-Dry Your Clothes.**

CORAL REEF

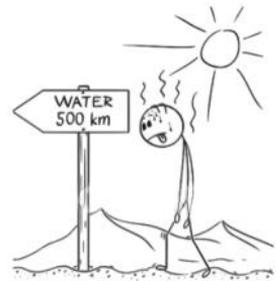


Coral Bleaching results from increase in seawater temperature, because of elevated levels of solar irradiance or it may be caused by changes in seawater chemistry increased levels of sediment in seawater etc. **Volunteer** to clean-up for local beaches or a reef. If you don't live near the coast, **get involved in protecting your watershed.**

CONSUMERISM



Increased consumerism evidently comes at a steep price. People are **incurring debt and working longer hours to pay for the high-consumption lifestyle**, consequently spending less time with family, friends, and community organizations. Mindless consumption always turns into excessive consumption, **stop and re-evaluate, stop copying other people, count the hidden cost of each purchase and test your limits.**





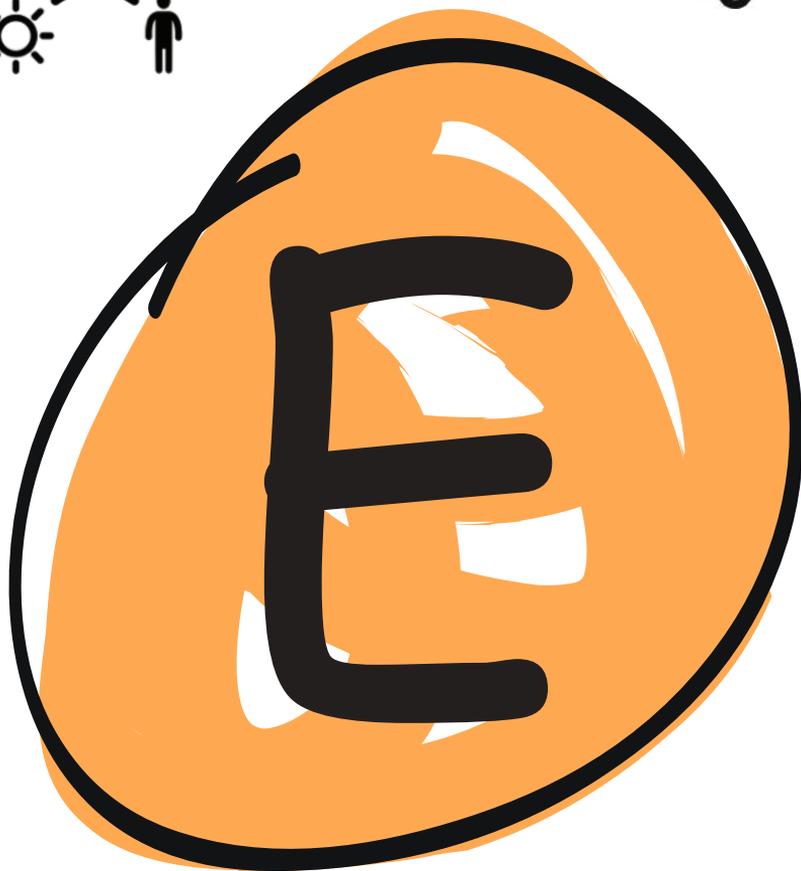
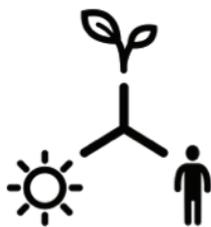
Reduction in deforestation will increase carbon sinks, increase sinks will reduce atmospheric pollutants, reduce incidence of landslides and floods, provide resources for livelihood to forest dwellers and communities living near the forest. Therefore, we should plant more trees, stop printing and go paperless, buy recycled paper products.

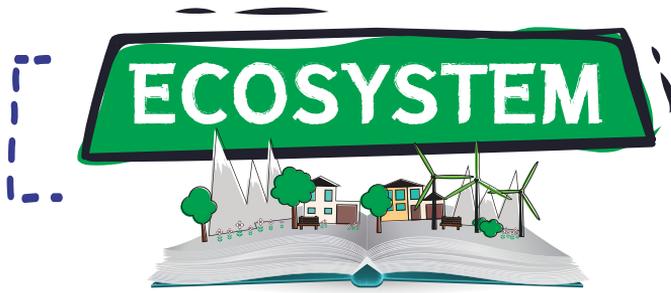


Everyone makes waste, and as such we are all part of living in a non-sustainable way. But if everyone took that first vital step of keeping their discarded materials separate then they could join the movement which would move the world in a sustainable direction. Waste segregation at source should be adopted because it is much easier to recycle.



Two-thirds of the world's population will live in water-stressed countries by 2025. Many Indian cities will run out of water by 2030. Marred by poor water management and extreme climatic conditions, our cities are on the verge of collapsing from dehydration. Therefore, one should use water judiciously i.e. recycle, treat and reuse water wherever possible.





If one species is lost the entire ecosystem may stop working. Ecological imbalance is when a natural or human-caused disturbance disrupts the natural balance of an ecosystem. Manage natural resources carefully, control the population, protect the water from contamination and pollution, plant trees, and respect other species.



Globally, the use of energy represents **by far the largest source of greenhouse gas emissions from human activities**. Some of these possible solutions are energy conservation and efficiency, switching to renewable energy such as wind, solar, etc.



India is one of the biggest producers of e-waste in the world. The global volume of e-waste generated is expected to reach **52.2 million tonnes** by 2021. There are many organisations which do **doorstep e-waste collection** and properly dispose the waste. Based on environmental regulations, we can contribute by buying less, organising what we have, give away or donate or sell.

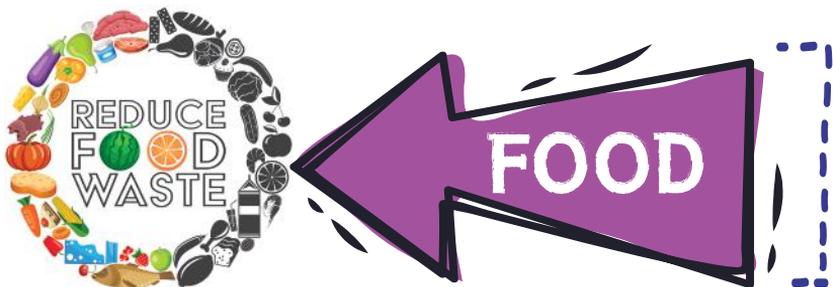




Currently, **India faces green fodder shortage of 63.5 per cent**. The cost of green fodder increased by three times between 2011 and 2016 and forcing farmers to resort to distress sale of cattle. **Growing green fodder in the farm land and through hydroponics it is easier and quick to produce nutritive green fodder** that results in good health of the livestock, resulting higher milk yield.



It has been stated that around **5% of total global emissions** comes from the fashion industry which also uses **six to nine trillion litres of water each year**. If on average, **the number of times a garment is worn was doubled, then GHG emissions would be 44 per cent lower**.



67 million tonnes of food is wasted in India every year, which has a **value of around Rs. 92,000 crore**. This is enough to feed all of Bihar for a year. Therefore, we should buy food or cook food only as much as we require, or we can eat to avoid wastage.



GREEN HOUSE GASES EFFECT



Burning fossil fuels raises the level of carbon dioxide in the atmosphere, which is a **major contributor to the greenhouse effect and global warming**. You can help to reduce the demand for fossil fuels, which in turn reduces global warming, by using energy more wisely. **Reduce, Reuse, Recycle, Plant a Tree and Encourage Others to Conserve.**

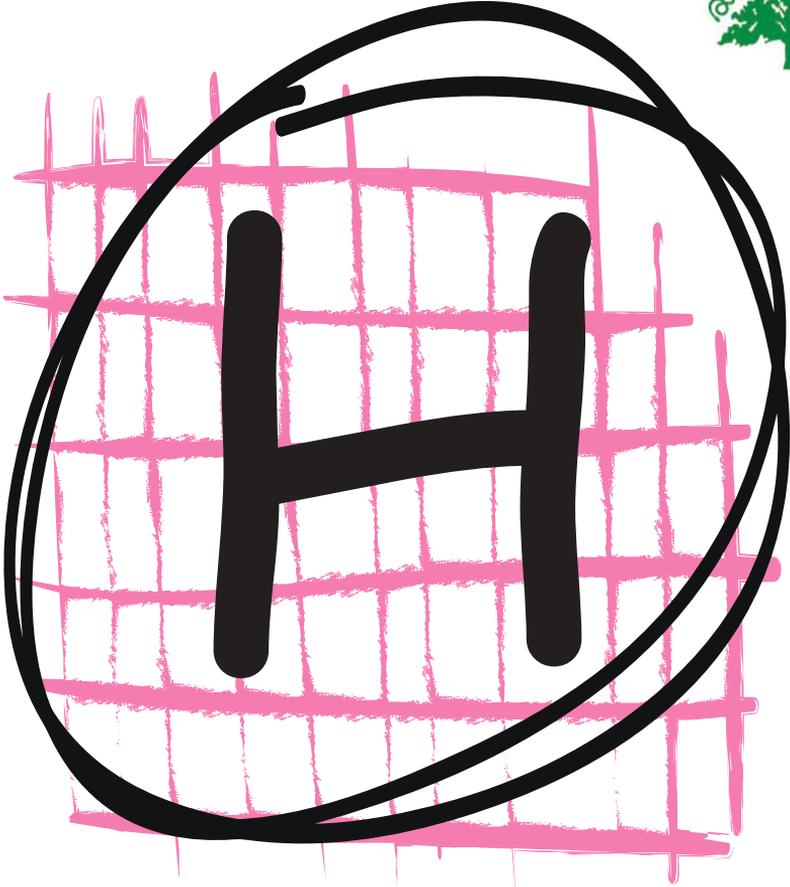


India's groundwater depletion problems are at a **critical level that requires immediate solutions** to improve water security and, in the long-term, avoid a countrywide agricultural disaster. **Let's pledge to use water wisely: don't let it run, fix the drip and wash smarter (Limit yourself to showers or bucket bath)**

GLOBAL WARMING



According to recent IPCC report, **human activities are estimated to have caused approximately 1.0°C** of global warming above pre-industrial levels. Some of the solutions are renewable energies, energy and water efficiency, sustainable transportation, infrastructure, agriculture etc.



HABITAT



Urban people change their environment through their **consumption of food, energy, water, and land**. And in turn, the polluted urban environment affects the health and quality of life. Densely built-up urban spaces tend to come with challenges of their own. We must build infrastructure that is sustainable. It will trigger green technological and industrial innovation and steward natural ecosystems.



- Why
- When
- How
- What

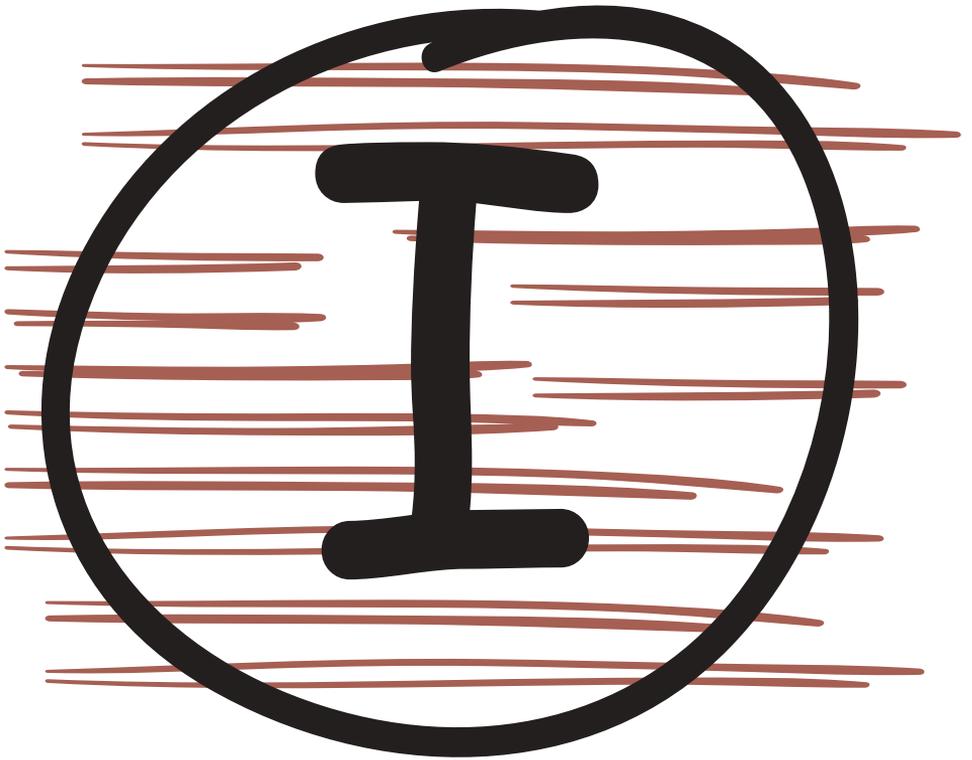
HAPPINESS

Are we really happy? 2360 years ago, Aristotle wrote a phrase translated today as ***“happiness is the meaning and purpose of life, the whole aim and end of human existence”***. Ways to achieve Sustainable Happiness are Cultivate Appreciation, Embrace your Natural Highs, Chart Your Sustainable Happiness Footprint, **Make Your Own "Happy List" and Value Genuine Wealth**



HEAT WAVES

During extreme heat in India, the populations that were reported to **perish in highest numbers were the very poor, elderly, outdoor labourers and homeless**. In 2015, India experienced conditions that ended up killing over 2,500 people in just 3 months. Outfit cooling canters with **rooftop solar panels, reduce fossil fuel-based emissions** that contribute to climate change and plant trees.





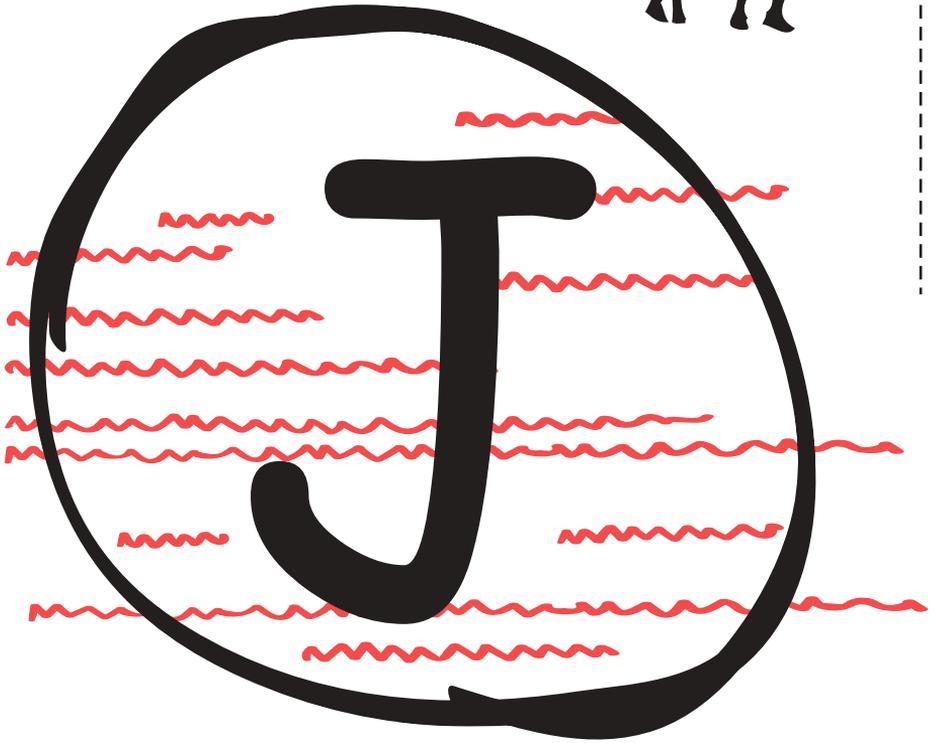
Industrial pollution negatively **impacts human population every day** The **UN SDG 3.9** have a strong focus on reducing environmental pollution. Business owner, should **implement industrial pollution control practices within their organisation and control the pollution at source by adopting new green technology and implementing effective polices.**



Waste sent to incinerators, landfills and waste-to-energy plants is a major source of global warming gases and air, water and earth pollutants. Organic food and green waste converted to biogas and fuels exacerbate this harmful pollution while incurring energy losses of up to 80 per cent. **Three – four times more energy is saved by recycling the same materials as burned.**



Localizing your supply chain represents a tremendous opportunity to help the environment. When you reduce shipping and storage, you also reduce emissions and energy usage. Buying local also promotes agriculture, increases local employment, less risk for food contamination and also means more nutrient density.





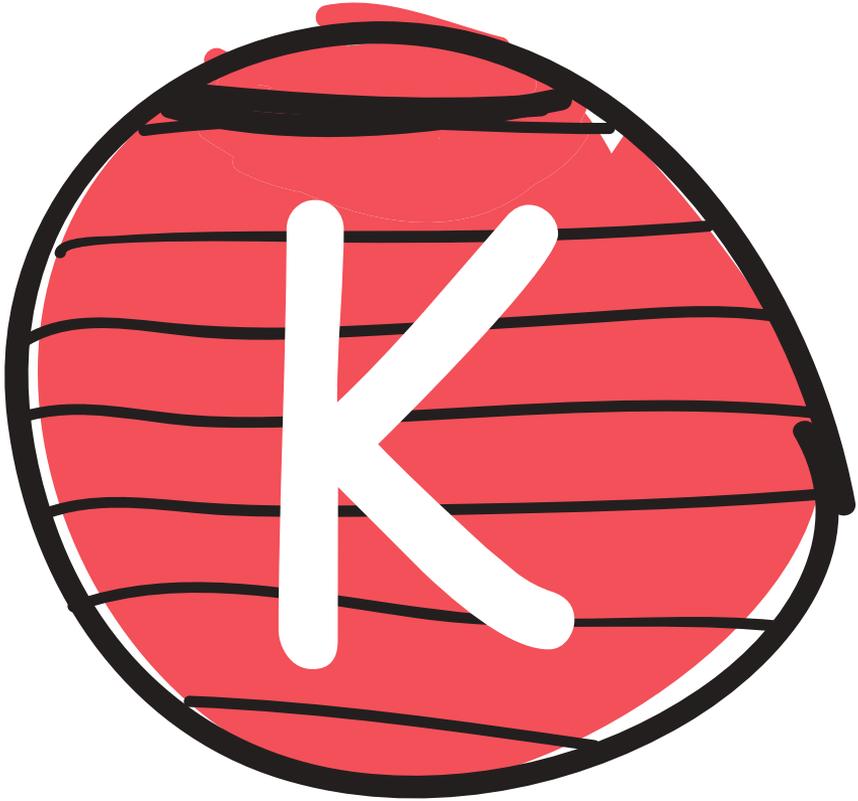
Unemployment has been considered as one of the biggest problems of India. SDG 8 (decent work and economic growth) includes target **8.5 on full and productive employment and decent work for all, and target 8.6 on reducing the proportion of youth not in employment, education and training.** The green economy can enable millions more people to overcome poverty, and deliver improved livelihoods for this and future generations.



Not restricted to adults alone, lifestyle diseases have started hitting kids as well. Health also forms an important component of sustainability. **Jogging is one form of exercise which doesn't require major monetary inputs** and can help prevent hypertension, heart disease, some forms of cancer, combat stress and boost happiness.



Climate change is depriving vegetables and fruits of nutrients creating “**Junk food effect**”. There are technologies **like hydroponics to help us grow food with optimum nutrients,** minimising the effect of climate change on agricultural system.





Women receive the highest indoor air pollution exposure because they spend most of their time in or near the kitchen when the stove is alight. The eco-friendly kitchen is the solution. **Energy-efficient food preparation** and cleaning habits, using equipment made from sustainable materials, and dodging toxic chemicals are an important aspect of a truly healthy kitchen.



Not many would know that **khadi is a zero carbon-footprint fabric**, needing no electricity or machines, or any kind of fuel for its manufacture. A simple comparison of numbers- **3 litres of water to produce one metre of khadi versus 55 litres for one metre in a mill-** is enough to give anyone an idea of the eco-friendliness of khadi.



The Kyoto Protocol is an **international agreement linked to** the United Nations Framework Convention on Climate Change, which commits its Parties to setting internationally binding **emission reduction targets**. India has ratified the **second commitment period of the Kyoto Protocol that commits countries to contain the emission of greenhouse gases, reaffirming its stand on climate action.**





Ghaziपुर garbage dump is now 65 metres tall which is just 8 metres less than height of Qutub Minar. It is reported that almost 80 per cent of the waste at Delhi landfill sites **could be recycled provided waste is segregated at source and civic bodies start composting and recycling the waste.**



Littering simply means **throwing away objects on the ground or leaving them lying on the ground instead of disposing them at garbage bin, recycling units or trash container.** Environment education should be given priority at schools and various awareness campaigns should be run to educate people about littering.



Antibiotics given to livestock to make them grow more quickly or as a cheap alternative to keeping them healthy **is giving rise to superbugs- bacteria that can't be treated with modern medicine.** Eating meats free of antibiotics will safeguard you from ingesting any of the drugs that remain in the animal's tissues and help prevent you from getting potential superbugs.



SOLID
WASTE





MARINE ECOSYSTEMS

Plastic pollution is a devastating problem for the world's oceans and marine life. Oceans, seas and coastal areas are critical to sustainable development. They are the primary regulator of the **global climate, an important sink for greenhouse gases.** **Make safe, sustainable seafood choices, use fewer plastic products, and help take care of the beaches.**

MUNICIPAL SOLID WASTE



Over 377 million urban people generate 62 MT of municipal solid waste per annum. Only 43 million tonnes (MT) of the waste is collected, 11.9 MT is treated and 31 MT is dumped in landfill sites. The key is to ensure proper segregation of waste at source and to ensure that the waste goes through different streams of recycling and resource recovery.

MICRO-PLASTICS



Micro plastics come from a variety of sources, from **larger plastic debris that degrades** into smaller pieces, or **microbeads**, polyethylene plastic etc. Micro-plastics are entering our food chain through sea food. **You can make a difference, reduce your use of single-use plastics, recycle properly, support plastic ban, and avoid products containing microbeads.**





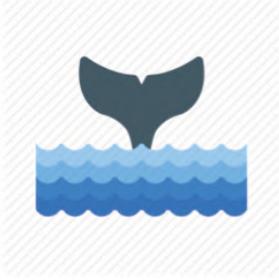
India has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions. Over the past couple of years, the Government of India have brought about a paradigm shift in the approach to disaster management. The approach has been translated into a **National Disaster Framework [a roadmap] covering institutional mechanisms, disaster prevention strategy, early warning system, disaster mitigation, preparedness and response and human resource development.**

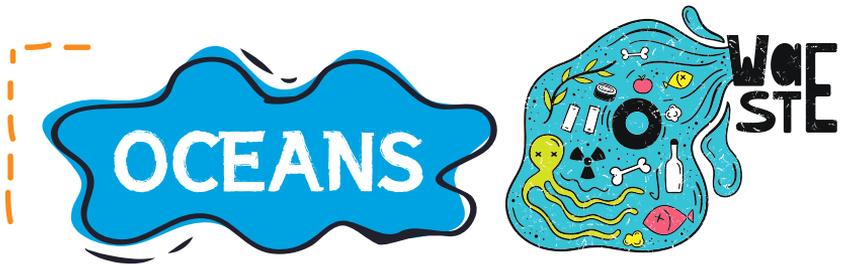


Noise pollution has been **linked to fatigue, hearing loss, and in some cases, psychological problems.** We can reduce noise pollution by turning off appliances at home and offices, shut the door when using noisy machines, use earplugs, lower the volume.



The combination of people living in poverty and the recent economic growth of India has led to the **co-emergence of two types of malnutrition:** undernutrition and over nutrition. **India needs to have a strong foundation and with high quality and quantity of proteins in a balanced diet, India can favourably enhance its chances of staying healthy.** Encourage healthier food choices and consider adding protein rich food to your loved one's diet.





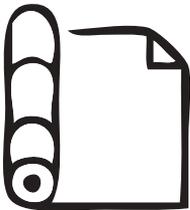
It was widely **assumed that no matter how much trash and chemicals is dumped into oceans, and the effects would be negligible. Over Million sea birds and 300 thousand dolphins die each year due to pollution.** To save oceans, stay away from plastic bags and if you are walking along the beach and see trash or cans/bottles, safely pick them up and put in the bin.



Human activity has damaged this protective layer of the stratosphere and while ozone layer health **has improved by 20% since 2005** but there is still much to be done. A global ban on the production of CFCs has been in force since 2010, new technology and products are available in market and consumers should be aware and avoid CFC products.



Instead of using chemicals, fertilisers, growth hormones, drugs, antibiotics organic farmers revert to techniques that have existed for thousands of years. **Today there is an option of buying organic** processed food, organic make-up, organic clothing, organic cleaning products and many more environment friendly products. **Choose Organic!**





The industrialization of the agricultural sector has increased the chemical burden on natural ecosystems. **Residues of pesticides can be found in a great variety of everyday foods and beverages, including for instance cooked meals, water, wine, fruit juices, refreshments, and animal feeds.** Choose Organic! Food producers grow and produce food without using synthetic chemicals such as pesticides and artificial fertilisers.



It takes an average of **5 litres of water to produce one piece of A4 paper.** Paper accounts for 25% of landfill waste and 33% of municipal waste. **Recycling 1 ton of paper saves around 682.5 gallons of oil, 26,500 litres of water and 17 trees.**



In 2016, world plastics production totalled around 335 million metric tons. Humans buy about **1,000,000 plastic bottles per minute** in total. Only **1% of plastic bags are returned for recycling.** Buy yourself a reusable water bottle (BPA-free if you're going plastic), Stop with the disposable plastic water bottles and Get educated on your local tap water.



QUANTITY



Malls are wonderful but too much shopping can be dangerous to your health and environment. While shopping we should always be sure that whichever product we buy be it food, clothes, cosmetics **we should buy the required quantity and not extra to avoid wasting the products.**

QUESTION

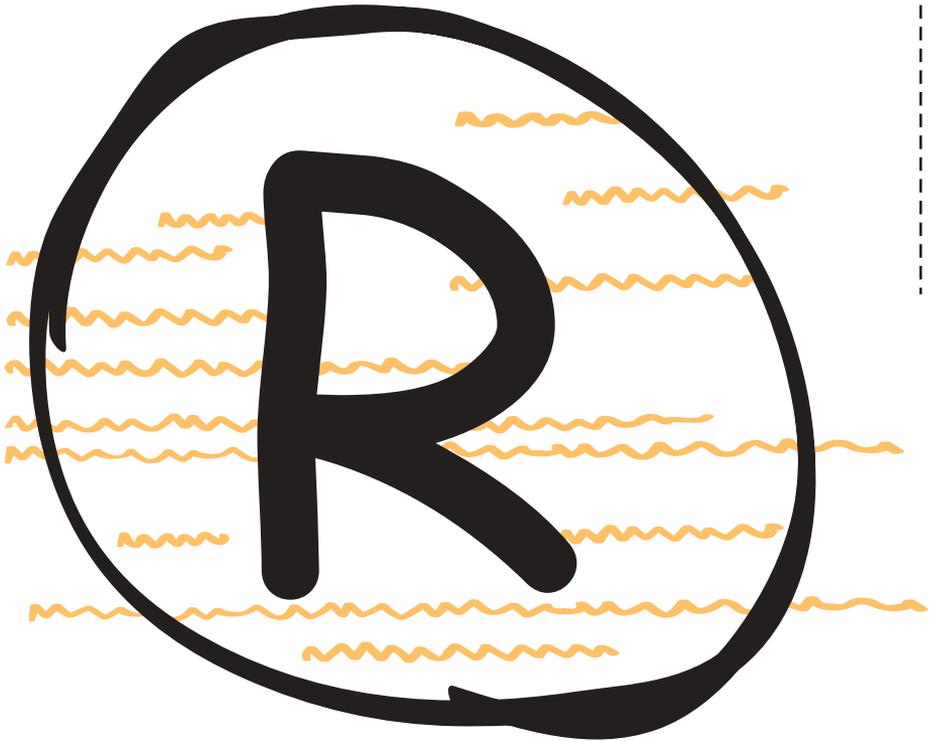


As a responsible consumers question the producers about their product's life cycle. Manufacturing procedures: where, how and what should always be questioned. We should always make informed choices, be curious and ask questions. **As it will not only help us to consume responsibly but put pressure on producers to produce responsibly.**

QUALITY



There are **products lurking in the corners of our homes that can be environmentally damaging** without our knowing it. We should always opt for **better quality, sustainably manufactured product** in order to make our residences more environmentally friendly.





RAIN WATER

On an average one person wastes about 0-45 litres water per day. Rainwater harvesting is an important environment friendly approach – dubbed as a **Green Practice which has double benefit** in both keeping the groundwater table undisturbed and charging the aquifer.

RADIATION



The electromagnetic radiation (EMR) emitted by cell phones can cause our cells to heat up and become damaged over time. Use a wired external keyboard and mouse to reduce the EMF exposure to your body. **Keep the computer a few feet from your body – never put a laptop on your lap / body. Ground yourself in your garden / lawn as often as possible.**



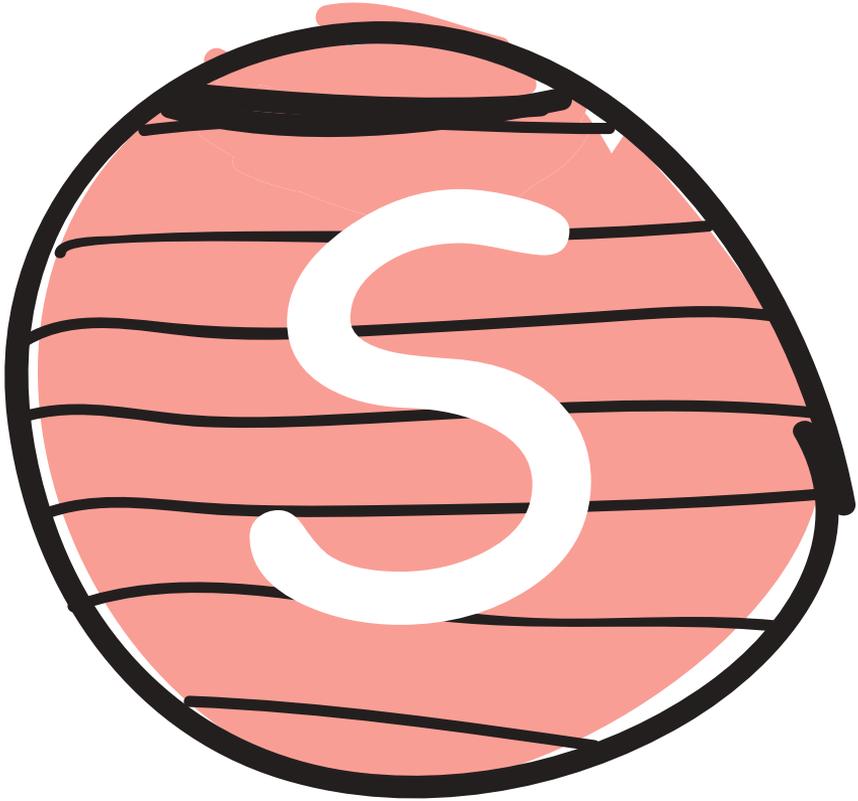
REDUCE REUSE RECYCLE

3Rs

Reduce: It takes resources to manufacture, transport, and dispose of products, so reduction minimizes the use of new resources.

Reuse: Reuse keeps new resources from being used for a while longer, and old resources from entering the waste stream.

Recycle: Although recycling uses energy, it helps to prevent new resources from being used and old materials from entering the waste stream.





SDGs

SAVE WATER - BUCKET BATH- SULABH - HYGIENE



SDGs: The Sustainable Development Goals (SDGs), otherwise known as the Global Goals, are a **universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity.** The Sustainable Development Goals are a collection of 17 global goals set by the United Nations General Assembly in 2015 for the year 2030.

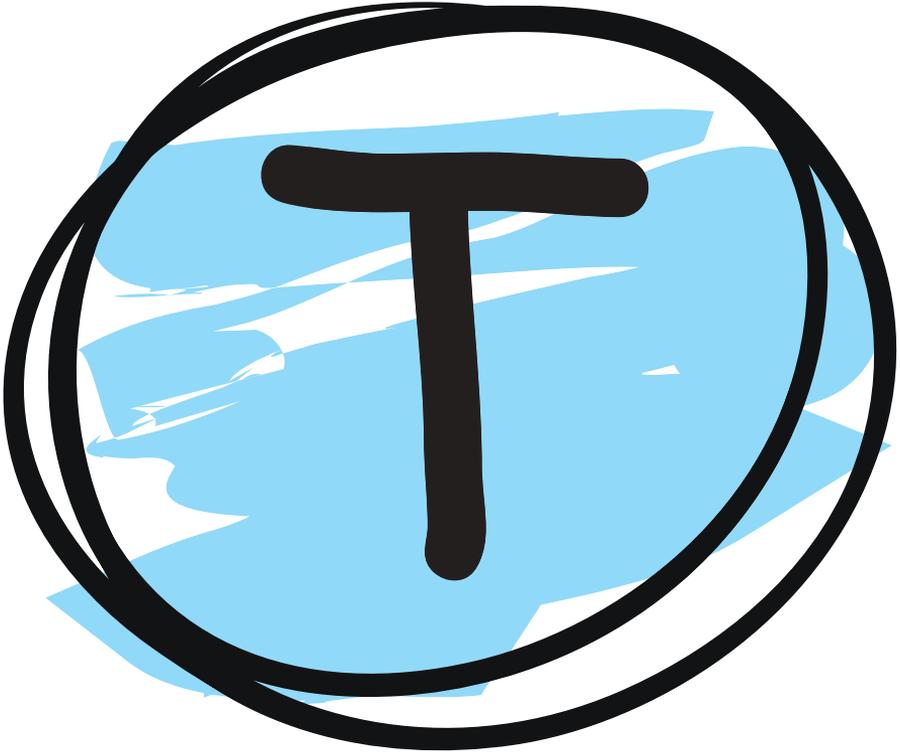
SANITATION



774 million people lack access to adequate sanitation in India. Use of dustbins for throwing litters. Use of public toilets for urination and defecation. Use of handkerchief or tissue paper while sneezing or coughing in order to prevent air-borne diseases



Showers are the third-largest user of water after toilets and clothes washers. For a standard shower head, **every minute wasted equates to 2.5 gallons of water.** Indian 'bucket bath' is a better way to save water.





TECHNOLOGY

Technology is significant in development and increased productivity to satisfy human need, **but uncontrolled technology impacts environment negatively.** By changing patterns of production and consumption, steps are being taken to reduce waste and pollution. **It is essential to develop green technologies to prevent any further damage for health and the environment.**

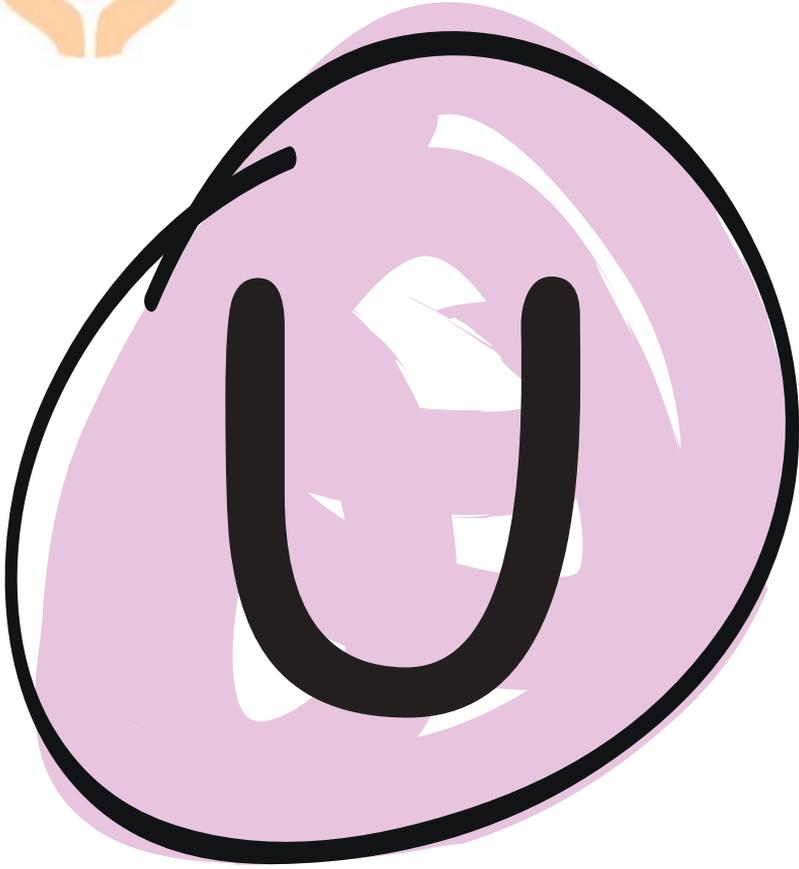
TRANSPORTATION



Transport represents **23% of global energy-related CO₂ emissions.** Switching to an entirely **electric fleet (green transport)** can help reduce **1 Giga tonne of carbon dioxide** emissions by 2030, and save India \$330 billion by cutting oil imports.



Trees function as an excellent natural thermoregulator. With their shade and the water vapour released by their leaves, they lower the temperature between 2 and 8 °C on sunny days. They clean the air acting as purifiers, absorbing nitrogen oxide, ammonia, sulphur dioxide and ozone and returning oxygen to the atmosphere. Pledge to plant at least 5 trees in your lifetime.





UN-ENVIRONMENT

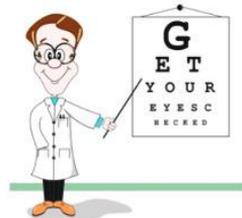
The United Nations Environment Programme is the leading global environmental agency that **sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development** within the UN system, and serves as an authoritative advocate for the global environment.



With today's lifestyle we end up accumulating lot of waste. Up-cycling reduces cloth and textile waste by **reusing dead stock** or gently used fabric **to create new garments and products**. There is also a new eco-centric trend that **uses plastic bottles to create yarns and materials** to produce everything from jackets and t-shirts to shoes and accessories.



Some of this UV radiation (UV-B) is especially effective in causing damage to living beings. **Sun protection is recommended when UV levels are 3 (Moderate) or higher**. The research found that there has been an overall annual increase in UV levels of 2% to 6% since the 1990s,





VEHICULAR POLLUTION



The main cause of vehicular pollution is the rapidly growing number of vehicles, 2-stroke engines, poor fuel quality, old vehicles, inadequate maintenance and traffic management system. Keep your vehicle well-tuned and tyres inflated properly to reduce exhaust emissions and avoid idling – idling exhaust contains more pollutants than running exhaust and use public transport.



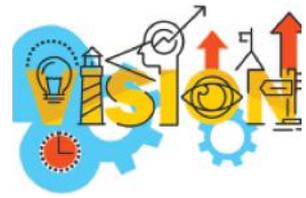
VEGETABLES



The developments in the agricultural sector have evidently shown an increase in the use of pesticides during the cultivation of crops. High levels of pesticides in food can lead to the development of diseases. Therefore, one should always choose organic vegetables over conventional as they are free of chemical pesticides and does not have negative health impact.

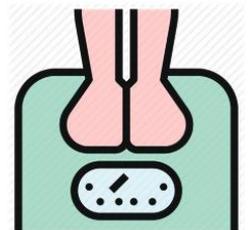


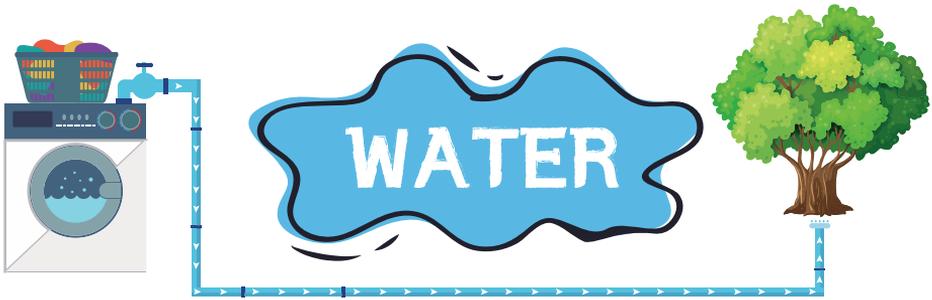
VISION



Electronics actually emit a blue light, which has negative effects on our eyes, fatigue and discomfort are common among digital device users. Wear blue light blocking glasses, use a screen filter, install a blue light blocking plugin, and take advantage of “Comfort View” Settings.

Save The Water





According to the Environmental Protection Agency (EPA), leaks may cause a home to waste 10,000 gallons of water per year. Small ways in which we can manage water sustainably at home are: **reuse water wherever possible. RO waste water which can be used** to water plants or mop the house. Check for leaks, eat less water intensive food, and buy less.



Can Climate Change Affect Your Body Weight? Acute changes in total body water can affect our weight. **Environmental stress and exercise**, in addition to several other factors, can change this amount. **Always carry a water bottle, and if you have desk job, always keep one at your desk.**



Excessive worrying and anxiety can release stress hormones which can boost blood sugar levels and triglycerides (blood fats). Increasing problem of mental **health, is inversely co-related to social sustainability.** Therefore we should try to reduce stress by **exercising, spending time with friend and family, reducing caffeine intake**, involving in activities which make you laugh, etc.





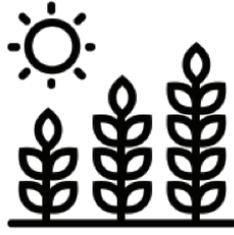
Xenobiotic is a chemical compound (such as a drug, pesticide, or carcinogen) that is foreign to a living organism. In simple words, artificial substances, which did not exist in nature before their synthesis by humans. **Eating organic and local can help reduce amount of Xenobiotic entering our body.**



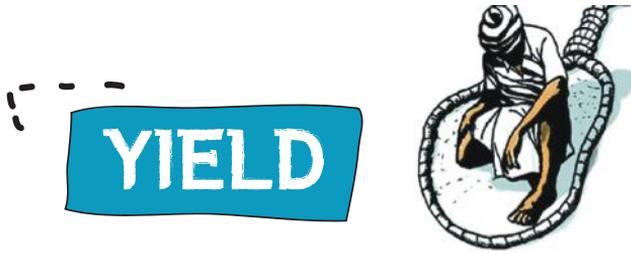
Around six million real Christmas trees end up in landfill every year. These **will take years to decompose, releasing methane**, which is said to have 25 times the potency of carbon dioxide. Sustainable alternative is **buying trees in a pot so they can be used again or there are places from where they can be rented.**



The main effect of inhaling xylene vapor is **depression of the central nervous system, with symptoms such as headache, dizziness, nausea and vomiting.** In order to prevent accidental exposure take precautions: use self-contained breathing equipment, always wash your hands thoroughly and ensure quick access to eyewash stations in the workplace.



Yoga- Consciousness – Nutrients – Manure



Climate change has about **4-9 % impact on agriculture** each year. By 2030, rice and wheat are likely to see about **6-10 % decrease in yields**. Crop yields can be maximized through an integrated cropping-livestock production system **that recycles the nutrients present in both animal manure and crop residues**.



With **356 million 10-24-year-olds**, India is having the **highest population of youth** in the world. The potential of this huge brigade can be realized if every segment contributes in his/her capacity to the fullest in achieving SDGs.



CONSCIOUSNESS – NUTRIENTS – MANURE

Yoga teaches us to care for our bodies and to make **choices that are life enhancing over those that diminish quality of life**. *“By changing our lifestyle and creating consciousness, it can help us deal with climate change” – Prime Minister of India, Narendra Modi.*



ZERØ

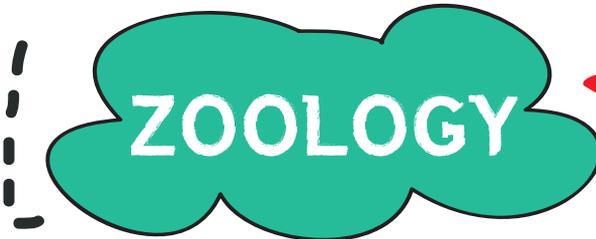


WASTE

Fruits- Animals - Balance - Immune System - Zero Waste



Zinc deficiency is characterized by growth retardation, loss of appetite, and impaired immune function. **Zinc is vital for a healthy immune system. High zinc fruits include avocados, blackberries, pomegranates, raspberries, guavas, cantaloupes, apricots, peaches, kiwifruit, and blueberries.**



As earth is more likely to face **6th mass extinction** we need to study and give **importance to subjects like Zoology** which help us study animal behaviour, understand about animal's lifestyle, their habitat. This will **help us develop technologies, policies and identify methods to preserve the amazing animal kingdom and their dwindling habitat.**



Zero Waste is a philosophy that encourages the redesign of resource life cycles so that all products are reused. The goal is for no trash to be sent to landfills, incinerators, or the ocean. **Only 9% of plastic is actually recycled.** The process recommended is one similar to the way that resources are reused in nature.

TERMINOLOGIES

- **Ground-level ozone** – which is produced by chemical reactions between air pollutants in the presence of sunlight

- **A carbon sink** is a natural or artificial reservoir that accumulates and stores some carbon-containing chemical compound for an indefinite period. The process by which carbon sinks remove carbon dioxide (CO₂) from the atmosphere is known as carbon sequestration.

- **Global warming** is a long-term rise in the average temperature of the Earth's climate system, an aspect of climate change shown by temperature measurements and by multiple effects of the warming.

- **First and Second Order Environmental Change:**

Environmental change is a change or disturbance of the environment most often caused by human influences and natural ecological processes. *Environmental change does not only encompass physical changes, but it can be things like an infestation of invasive species is also environmental changes.*

First order change deals with the existing structure, doing more or less of something, and involving a restoration of balance.

Second order change is creating a new way of seeing things completely. Second order change requires new learning and often begins through the informal system.

While human actions for improved well-being bring many intended benefits, these actions also lead to indirect consequences that pose long-term challenges. (Source: 50 Breakthroughs study, ITT, 2014)

- **Sustainable Infrastructure : IISD defines sustainable infrastructure as assets that:**

- Steward natural ecosystems
- Lower carbon and environmental footprints
- Maximize the use of infrastructure services provided by natural ecosystems
- Move beyond compliance on core labour standards and human rights
- Trigger green technological and industrial innovation
- Spur investment in education, skills building and research & development
- Increase employment and the growth of green jobs
- Are financially viable
- Crowd-in domestic investors and businesses
- Increase foreign direct investment
- Bring value for money for taxpayers and investors across the asset life cycle

Paris Agreement, to limit global temperature rise to below 2 degrees Celsius and as close as possible to 1.5 degrees C

- **Junk food effects** can include increased risk for obesity, certain types of cancer, osteoporosis, cardiovascular disease, chronic inflammation, and other serious conditions. Keeping the following unhealthy items out of your diet is an important step in your overall health and well-being.

- **Knowledge :**

Practical implications

- As more academic institutions move to address sustainability, this paper does not offer a roadmap; rather, it raises important issues that must be addressed in performing research and education for sustainability.

Originality/value

- The paper shows that type of knowledge that academia must produce and how it might produce it are redefined for sustainability problems.

- **Micro plastics** are small plastic pieces less than five millimetres long which can be harmful to our ocean and aquatic life.

- **Sustainable Purchasing:** The balance of consideration between social, economic and environmental outcomes comes together with the term “sustainable purchasing”.

- **An aquifer** is an underground layer of water-bearing permeable rock, rock fractures or unconsolidated materials (gravel, sand, or silt). Groundwater can be extracted using a water well. The study of water flow in aquifers and the characterization of aquifers is called hydrogeology.

- **Grey water** is water draining from your house’s sinks, bathtubs, laundry machine

- **Acid rain:** Rainfall made so acidic by atmospheric pollution that it causes environmental harm, chiefly to forests and lakes. The main cause is the industrial burning of coal and other fossil fuels, the waste gases from which contain sulphur and nitrogen oxides which combine with atmospheric water to form acids.

- **Biodiversity:** Biodiversity refers to the variety and variability of life on Earth. Biodiversity is typically a measure of variation at the genetic, species, and ecosystem level. Terrestrial biodiversity is usually greater near the equator, which is the result of the warm climate and high primary productivity.

- **Hydroponics:** Hydroponics is a subset of hydro-culture, which is a method of growing plants without soil by instead using mineral nutrient solutions in a water solvent.
- **Consumerism:** Approximately 1.7 billion people worldwide now belong to the "consumer class"—the group of people characterized by diets of highly processed food, desire for bigger houses, more and bigger cars, higher levels of debt, and lifestyles devoted to the accumulation of non-essential goods.
- **The green economy:** is defined as an economy that aims at reducing environmental risks and ecological scarcities, and that aims for sustainable development without degrading the environment.
- **IPCC:** The Inter-governmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. The IPCC was created to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks, also to put forward adaptation and mitigation options.

Sustainability Quiz

Answer the following questions:

1. Do you turn off the tap while brushing your teeth? **Yes/No**
2. Do you take bath using bucket? **Yes/No**
3. Are you aware that your toiletries are causing ground water pollution due to its high chemical content? **Yes/No**
4. Do you carry your own bag while shopping? **Yes/No**
5. Do you refuse for customer's copy while making card payment? **Yes/No**
6. Do you carry your own handkerchief to avoid using tissue paper? **Yes/No**
7. Do you prefer buying local and organically grown food? **Yes/No**
8. Do you whenever possible choose public transportation over private?
Yes/No
9. Do you segregate your waste? **Yes/No**
10. Do you compost organic waste? **Yes/No**
11. Do you recycle or send for recycling non-biodegradable waste? **Yes/No**
12. Do you buy only what is required instead of following the trend? **Yes/No**
13. Do you make sure everyone working around you is getting minimum wage set by Government of India? **Yes/No**
14. Are you aware about sustainable development goals? **Yes/No**
15. Do you try to aware others about these goals and environmental problems?
Yes/No

Evaluation Process

Each yes gives you 10 points.

If you have scored 100 points you are a sustainability crusader.

If you have scored 80-90 points you are doing great.

If you have scored 60-70 points there is a scope of improvement.

If you have scored 50 points or below you really need to up your sustainability game.

Sustainability Quiz (MCQs)

- **How many sustainable development goals are there?**
 - 4
 - 9
 - 15
 - 17

- **Sustainable development has three parts. Which option describes them?**
 - Waste, air quality and biodiversity.
 - Social equality, human rights and health.
 - Wealth, economic growth and poverty.
 - Social, environment and economy.

- **Which of the following is a greenhouse gas**
 - CO₂
 - CH₄
 - N₂O
 - All of the above

- **What does GWP stand for?**
 - Global warming potential
 - Global water partnership
 - Global Writing Programme
 - Gross Written Premiums

- **Educating women worldwide has lowered birthrates mainly because**
 - Educated women contribute less to their family income.
 - Educated women may learn family planning techniques.
 - Educated women have many children to ensure that some survive.
 - Educated women are usually the only child.

- **When was the Millennium project commissioned?**
 - 2000
 - 2002
 - 2003
 - 2005

- **What is the full form of UNEP?**
 - United Nations Environment Programme
 - United Nations Equality Programme
 - United Nations Energy Programme
 - United Nations Education Programme

- **When did UNFCCC came into force?**
 - 1992
 - 1995
 - 1998
 - 1994

- **Who initiated International Solar Alliane**
 - UN Secretary General AntónioGuterres
 - Ex UN Secretary General Ban Ki Moon
 - Former Vice Prsident Al Gore
 - Indian Prime Minister NarendraModi

- **What is the name of the initiative to clean River Ganga**
 - Clean Ganga Initiative
 - Namami Gange Programme
 - Ganga BachaoAndolan
 - Clean River Programme

Answers:

1: D, 2: D, 3: D, 4: A, 5: B, 6: D, 7: A, 8: D, 9: D, 10: B

WEB RESOURCE FOR GOOD READ

NASA GLOBAL CLIMATE CHANGE: climate.nasa.gov/blog/

NEW SCIENTIST CLIMATE CHANGE: [newscientist.com](https://www.newscientist.com)

SCIENCE NEWS: [sciencenews.org](https://www.sciencenews.org)

CLIMATE DENIAL CROCK OF THE WEEK: [climatecrocks.com](https://www.climatecrocks.com)

17 GOALS TO TRANSFORM OUR WORLD: un.org/sustainabledevelopment

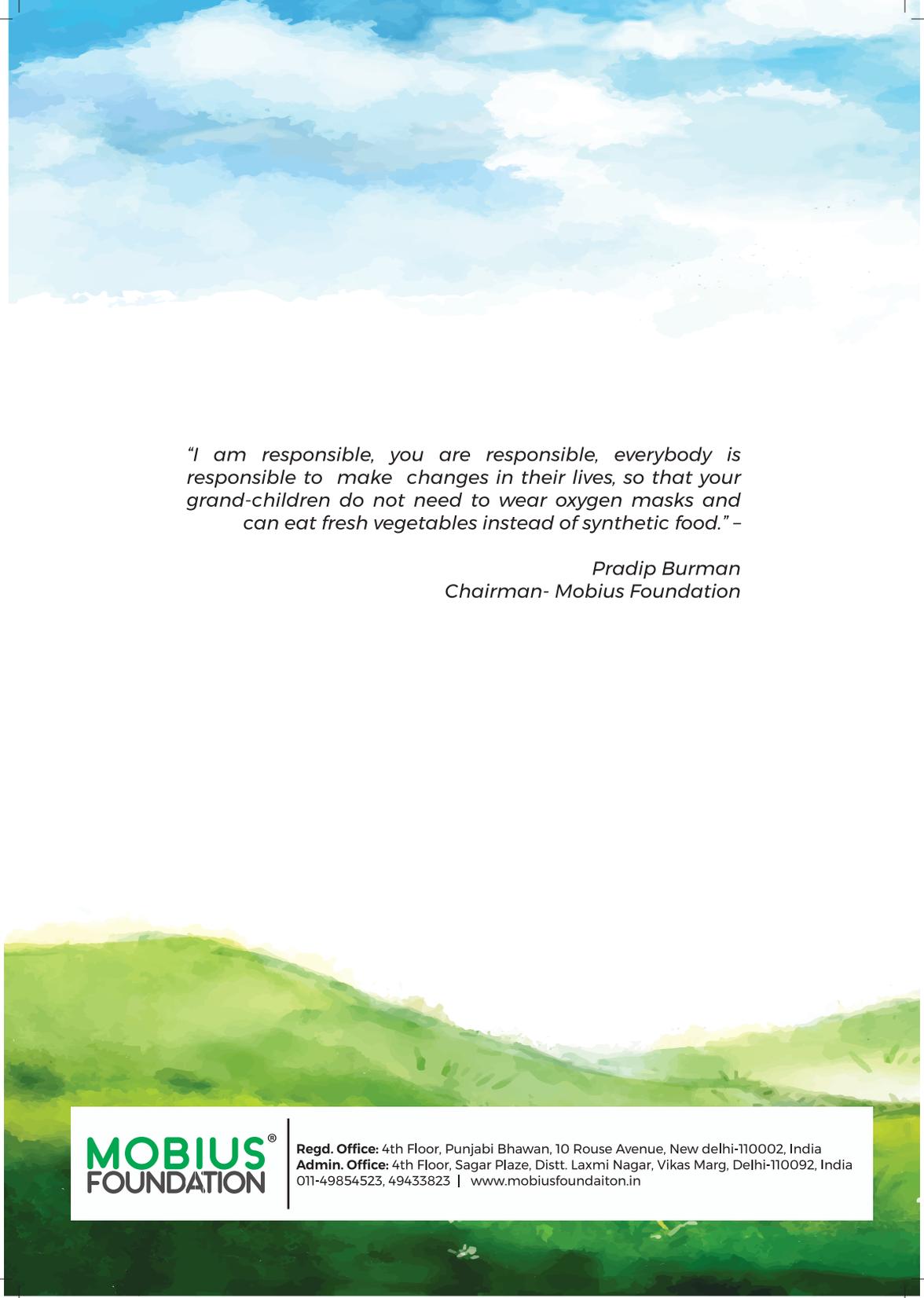
BIG DATA FOR SUSTAINABLE DEVELOPMENT:

un.org/en/sections/issues-depth/big-data-sustainable-development.html

ENVISION 2030 by United Nations: un.org/development/desa/disabilities/envision2030.html

DOWN TO EARTH: downtoearth.org.in

TERRA GREEN: <http://terragreen.teriin.org/>



"I am responsible, you are responsible, everybody is responsible to make changes in their lives, so that your grand-children do not need to wear oxygen masks and can eat fresh vegetables instead of synthetic food." –

*Pradip Burman
Chairman- Mobius Foundation*

MOBIUS[®]
FOUNDATION

Regd. Office: 4th Floor, Punjabi Bhawan, 10 Rouse Avenue, New delhi-110002, India
Admin. Office: 4th Floor, Sagar Plaze, Distt. Laxmi Nagar, Vikas Marg, Delhi-110092, India
011-49854523, 49433823 | www.mobiusfoundaiton.in