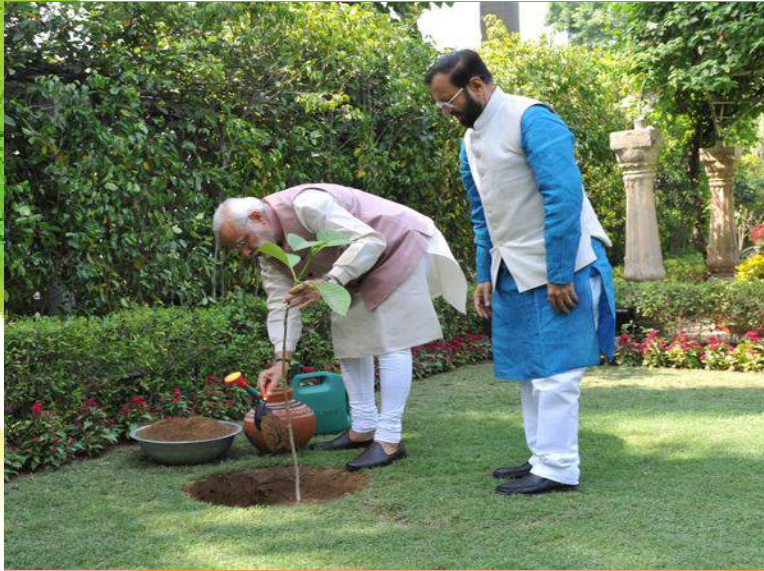


SPECIAL ISSUE ON WORLD ENVIRONMENT DAY 2016 Swachh Bharat Mission



World Environment Day 5th JUNE 2016

We at International Certification Services has joined hands with the Nation to Celebrate World Environment Day on 5th June, 2015 by having number of program that covered



Plantation of Trees at Mumbai
By Dr. Vikramaditya,
Dr. P. Poddar along with
ICS CMD Dr. Sundar Kataria.

- Increase Environment Awareness
- Plantation of Trees
- Swachh Bharat for Schools

Plantation by our Honorable
PRIME MINISTER NARENDRA MODI
and the Environment Minister
Shri Prakash Javdekar
at 7 Race Course, New Delhi



विश्व पर्यावरण दिवस

The eminent personalities shared their views on the protection of environment and issues being faced by world over today, covering the environmental spikes has taken toll of life, property and safety of human.

LET'S WORK TOGETHER TO SAVE OUR MOTHER EARTH.



WORLD ENVIRONMENTAL DAY - MANTHAN

Dr. Sundar Kataria
Chairman & Managing Director
International Certification Services Pvt. Ltd.

India is facing acute crises due to shortage of water, the country we have been praying Water, Earth and Fire Gods since ancient time. Unfortunately, our Administrative, Planners, Regulatory Authorities and Politician including Fellow Citizen have miserably failed to protect the Environment. This is evident from as most of our rivers are Polluted even the water table going down because of environmental Pollution, the world predication on environmental for the year 2030 has been advanced as witnessed during last few years shifting by 15 years that is a great concern today.

The problem is going to be grave if we do not wake up and focus on water management on top priority and come up with National Policy on Water Management and Environmental Protection.

We at International Certification Services has been observing and celebrating World Environment day on 4th June this year and have initiated number of programs and will be conducted in Association with our business associates.

This year the theme of the World Environment Day - 2016 is " ZERO TOLERANCE OF THE ILLEGAL WILDLIFE TRADE "

Please join hand with us to CREATE, AWARENESS ABOUT ENVIRONMENTAL PROBLEMS and ISSUES THE WORLD IS FACING IN SPECIFIC COUNTRY .

WED- MANTHAN has been Organized on 4th June , 2016 with our Focus to enhance Environmental Awareness Focusing.

- Environmental Protection - Life Cycle
- Risk and Opportunities
- Internal and External Issues
- Water Crises and Water Management
- ISO 1400:2015, Revised/ Latest Standard - EMS
- Environmental Industry Show Cases

Our Team of Environmental and Management Specialists waiting here to provide necessary support and advice to protect the environmental pollution to save our Mother Earth for future generation towards their Wellness and Sustainable Life.

“THE GREATEST THREAT TO OUR PLANET IS THE BELIEF THAT SOMEONE ELSE WILL SAVE IT”

- Robert Charles Swan

What we call Earth, is our home. We have been blessed with a splendid Planet where the most beautiful forms of evolution have taken shape in its own spectacular ways.

Environment Day reminds us the importance of Mother Earth. The ruthless and senseless way of exploiting natural resources have been the biggest blunder in the name of development. Earth never denies what we want from it, but it does respond in some furious ways time and again, to make us aware before it's too late.

We share the same Earth. We should never forget the fact that we share it not only with other human beings, but also with nature including animals, plants and all. We all have a responsibility towards it and it starts with you and me.

I am glad to be associated with an eco-friendly Organization that takes significant environmental initiatives time and again.

ICS has already pledged to “Go Green” by adopting various measures to conserve and make sensible use of natural resources.

Small steps traverse long distances, ICS has also taken small yet significant steps towards the betterment of the environment, ICS is making difference every day by adopting environmental-friendly initiatives like Paperless office, both side printing, switching on e-mode for each and every record, document.

Whatever we could do for our precious abode - the Earth, would be little. But everyone's little effort would definitely make a big difference one day and Planting a Sapling and Nurturing it would be a Small yet significant step. So join hands with ICS in awareness drive to save Environment by reaching to mass on special day Environment Day on 5th June.

We congratulate everyone associated with ICS for promoting the idea of ecology. The entire world is celebrating Environment day. Let's make the best of this opportunity by pledging to create more awareness about eco-friendly business practices. Let's be an inspiration for others to follow.

And, the best way to inspire is, to do it first.

WED Day – 5th June 2016 – 11 Steps :

- 1) Visit the World Environment Day website. Spend some time having a look around at the information provided there to see what's of most interest to you. The site is at: <http://www.unep.org/wed/> some of the things you might be interested in doing through this site include:
 - Registering an activity that you, your school, business, or workplace, or your community group are doing for WED. The great thing about registering your activity is that you can inspire others who learn about what you're doing.
 - Take the WED Challenge at <http://www.unep.org/WED/wedchallenge/>
 - Read "Tree-a-Day" for 2011. This daily changing page about a tree will introduce you to different trees around the world and gives you details about the importance of the tree to us, the environment, and its surrounding habitat. You can also learn about "Forest Facts" under one of the tabs offered on the site.
 - Take a moment to check out the latest news added to the site regularly.
- 2) Find out what the WED environmental theme is internationally for the year you're celebrating WED. For example, in 2011, it is the International Year of the Forest, hence a front page focus on forests and trees on the site. If the theme inspires you, consider planning your celebratory event around the theme. If you have another environmental theme that you're really into, that's okay too!
 - Also check out which country is the host country for WED for the year. For example, in 2011, India is the host country for WED. If you live in the host country, expect extra exciting activities to be planned!
- 3) Check out the activities that are already planned in your area, region, or country. You might like to join in what has been planned, or even help out if you're early enough to become a part of the volunteers for the event. Use the internet to search for WED events near you.
- 4) Consider holding your own WED event. If you don't mind a little planning and effort, why not hold your own event for WED? You could enthuse your neighborhood street, your friends, your local community, your school, a group of businesses, or the media to become involved too. Some ideas for your own event include
 - Arts and crafts exhibitions with a WED theme/focus
 - A film festival focused on eco-issues
 - Ceremonies; you could even tie in celebrities offering awards to local members of the community who have done great environmental acts or who have inspired many to take positive environmental actions
 - Competitions – you could make lots of different eco-themed competitions, from painting competitions to online eco-poetry.
 - Concerts – this can be a cool way to get lots of people together in the spirit of WED
 - Demonstration activities
 - Drama and poetry
 - Environmental education and awareness-raising
 - Flash mobs
 - Information kits
 - Online and social media activities
 - Publicity and media coverage
 - Sports activities
 - Other ideas you think would work really well.

- 5) Make today that you choose to adopt an eco-friendly, sustainable lifestyle. Do an inventory of your energy usage, your consuming habits, and your reliance on unsustainable products and make a list of ways you intend to curb your unsustainable activities and habits and replace them with sustainable ones. Set yourself a timeline to meet, with harder changes coming at the end of the timeline.
- 6) From today, start reading the labels of origin and manufacture of your goods. Are they certified as sustainable (for example, all forest products with the FSC logo are logged using sustainable forestry practices), are they organic (for example, organic cotton clothing causes much less environmental damage than conventional cotton-growing methods), are they sustainably obtained (such as with obtaining fish), are they locally made (less travel miles), are they Fair Trade (ethically produced), etc. There are lots of things a label can tell you if you choose to read it. Also, if you don't find what you're looking, email or post a message on Facebook to the company, retailer, or manufacturer responsible. Facebook is a great method because lots of other people will check out your question and be waiting for the answer!
 - Be aware of the fact that some labels and practices compete with others. That is part and parcel of being in a complicated human system. You need to make an informed choice, not simply argue that since one label cancels out another that the game's up and you simply can't be bothered trying; that's a total cop-out and changes nothing! For example, Fair Trade retailers know they have the conundrum of supplying far-shipped products but they are doing their best to ensure that the supply chain is fair, ethical, and as ecologically considerate as possible and they continue to rework their approaches to take new technology and possibilities into account. Don't shoot down the people who are trying to make improvements; instead, get involved and help them!
- 7) Take public transportation today. Make a choice to take it more often than you do already. On the other hand, if you already take it often, get your bike out for the weekend, or walk. Or, spend time gently persuading a car-lover of the benefits of catching the bus now and then!
- 8) Get involved in a conservation, restoration, or local eco-community project. Today is a great day to sign up and get involved with people who are doing rather than talking or reading.
- 9) Visit your garden space and plan what to do with it. Things you can do that will make the most of your garden include:
 - Compost your scraps. Use this compost to boost the garden's production.
 - Create a part of it that is edible, and plant seasonal crops. For those of you with merely a balcony or a tiny plot, you can still grow food such as a potato in a bag and small sprout gardens in your windowsill. Or join a community gardening project.
 - Grow herbs and spices that add flavor to your food, look beautiful in the garden and that also have medicinal, beauty, healing, spiritual, and other usages. Borrow a book from the library to learn more about herb and spice use.
 - Encourage beneficial and friendly wildlife to your garden through careful planting and shelter creation.
 - Learn to make your own garden sprays using items that are toxic to bugs and mildew but not to people and pets!
- 10) If you're not already into the refuse, reduce, reuse, recycle, habit, choose today to slip into it and make it a part of your daily life. All that clutter has to go somewhere, so make a choice not to bring in into the house to begin with and if it has to leave, make good choices about where it's going to end up!
 - Think about borrowing, sharing, donating, time-sharing, etc., instead of buying for keeps. Or pass it on after you've read/used/watched/worn/enjoyed it.
- 11) Learn more. There are many activities you can do to live in harmony with the environment and to benefit it. The choice of how you go about this is really up to you, provided the end result is a lessening of your personal impact on the planet. Learning the ways in which you can make changes to your lifestyle, improve your home's energy efficiency, be more mindful of the resources you use personally, and demanding more of the products and services you use by telling retailers and manufacturers what you want in the way of greening their output are all important ways to be truly involved. And more than this, take time to help others to learn from you.

DO YOU KNOW ? ISO ENVIRONMENTAL STANDARD REVISED RECENTLY

WHAT, WHERE, WHEN, WHO and HOW

THE COMMON PLATFORM STRUCTURE FOR ALL FUTURE ISO STANDARDS

ISO 14001:2015 NEW REVISED STANDARD ENVIRONMENTAL MANAGEMENT SYSTEM

ISO ANNEX SL, APPENDIX 2

ISO has published Annex SL, Appendix to Guidelines to help Standards developers write management system Standards. It forms part of ISO Directives Part-I - Consolidated.

ISO Supplement Procedures Specific to ISO document Annex S L guidelines was developed In responses to ISO Standard users as number of management system have Common clauses which are not alignment properly. Therefore it is difficult for organization to rationalize their system to interface and Integrate these. That may cause some confusion and difficulties at the stage of implementation phase.

Today many clients seek to implement and get certify multiple management system. they need to easily combined and integrate them is effective and efficient way.

ISO Annex S L, Appendix 2 provides identical structure, text, common terms and definition for the management system to ensure consistency among future revised Management System Standards and make integrate use simpler, that becomes user friendly.

Now High Level Structure , Annex SL has ten major clauses numbers and titles that cannot be changed, however sub clauses can be added.

ANNEX SL - APPENDIX- FRAMEWORK FOR A GENERIC MANAGEMENT SYSTEM High Level Structure:

Clause 1 - Scope

Clause 2 - Normative Reference

Clause 3 - Terms & Definition

Clause 4 - Context of the Organization

Clause 5- Leadership

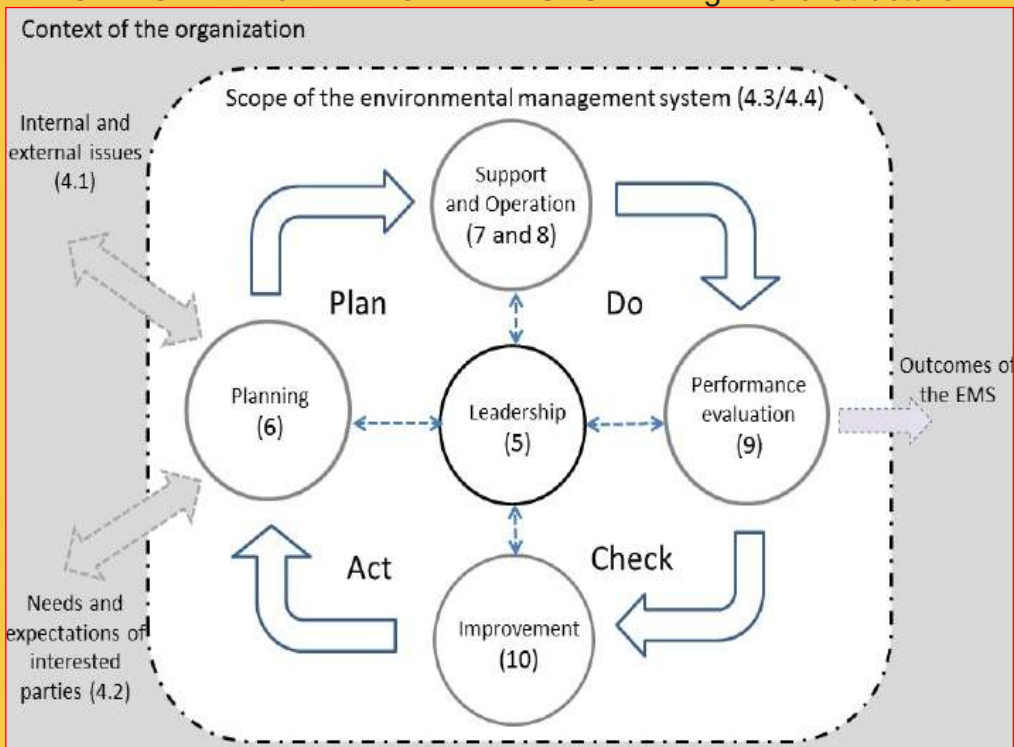
Clause 6- Planning

Clause 7- Support

Clause 8- Operation

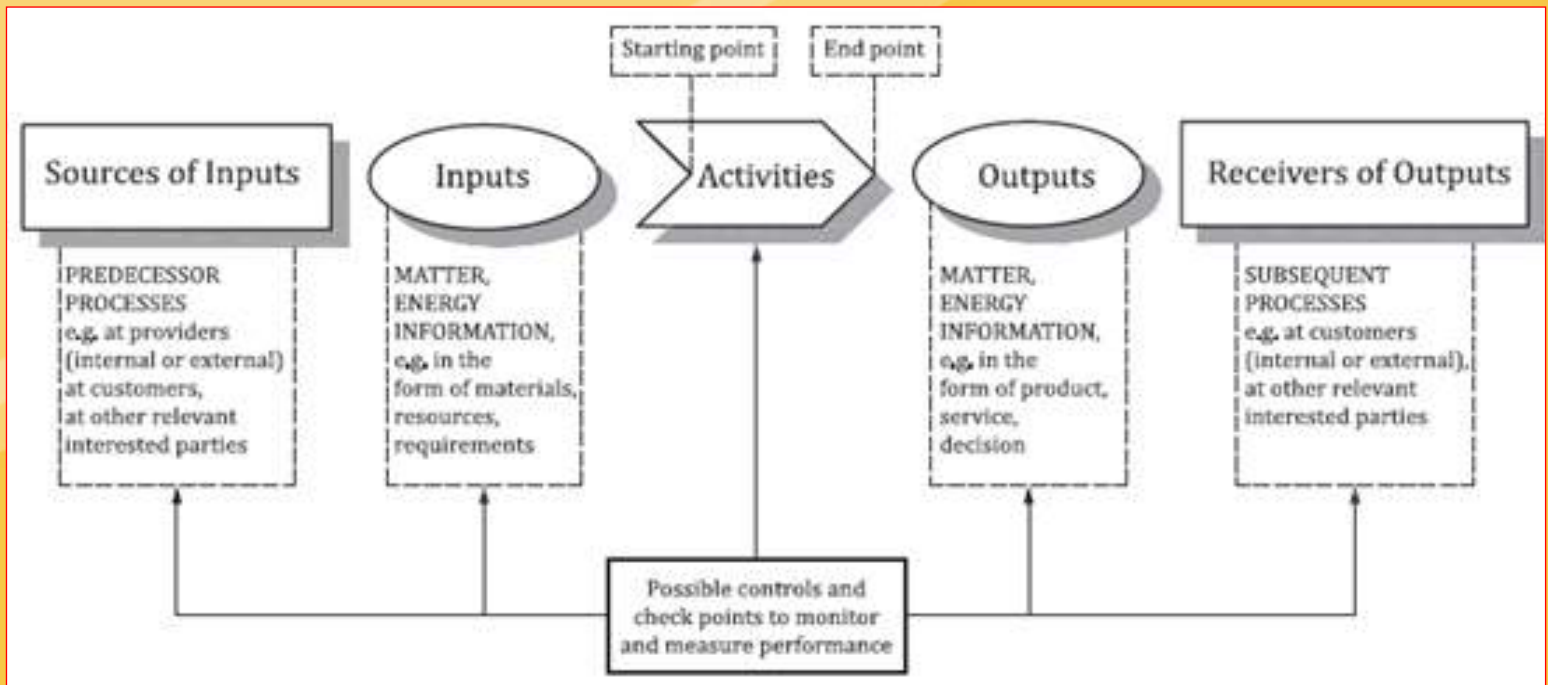
Clause 9 - Performance Evaluation

Clause 10- Improvement



The following changes will be reflected in the revised ISO 14001:2015 Standard

- Common Clauses and Terms & definition as per annex SL, Appendix 2
- New Seven Management Principles
- Leadership and Commitment
- Risk Based Thinking
- Process Approach
- Documented Information
- Improvement
- Context of the Organization
- No Preventative Action as it is embedded in the risk management



ISO 1400:2015 TRANSITION GUIDELINES:

ISO 14001:2015 has been revised and new standard released.

- Organization already certify need to enhance their Environmental Management System through systematic transition and implementing changes. These changes are significant in nature and thus will require to evaluate existing management system to confirm degree of conformity with the new revised new Annex SL Structure and risk based approach as defined is ISO 14001:2015 some of the key changes is the Standard ISO 14001:2015 are:-
- Strategic Environmental Management - New requirement to understand the organization context the need and expectation of Interested Parties has been built in to determine and address & risks and opportunity for the benefit of organization and the environment.
- Leadership and Commitment - To Promote Environmental Management Within the Organization, a new clause has been added that assign responsibilities for those in leadership role.
- Environmental Performance - continual shift to emphasize improving Environmental Performance to achieve intended out come.
- Life Cycle Thinking - Added requirements whereas organization will need to extend their operational control & influence to the environmental impact associated with the product use and end of life disposal and treatment.
- Many other minor changes addition and deletion is the clauses and terminology e.g Elimination of Preventive Action.

GENERAL GUIDELINE FOR TRANSITION:

- a) Study the new requirement and prepare a check list of the changes to be incorporated to the existing Environmental Management System that is procedures and work instruction to ensure all the new requirements are addressed.
- b) Time line : ISO 14001:2014 expires after three years from the publication date of the 2015 version.
- c) To Continue the maintain the existing ISO 14001:2004 Certificate until implementation of new standard requirements and successful transition before expiry of old standard ISO 14001:2004.
- d) If the Organization current ISO 14001 Certificate expires before the organization are able fully transition to the 2015 Standard. The Organization may be re-register to the 2004 version. This new certificate will remain valid for the remaining period of the three years after the publication and release of the 2015 version as referred above.
- e) A new certificate as per ISO 14001:2015 version will be issued on satisfactory certification audit that your organization has fully met with new revised requirements of the latest 2015 standard. As per current practice all major corrective action reports/ non confirmative must be closed and corrective action for the minor corrective action for the minor corrective action request/non confirmative must be closed, and present to us for review and approvals. Prior to issue once of Certificate of Compliance.
- f) Whereas Transition Audits are carried out in conjunction with schedule surveillance audit and / or certification, addition audit mandays time will be required to ensure. that all activities are covered for the existing and new Standards.
- g) Validity of the Certificate of Compliance is case of transition from 2004 is 2015 will remain as per expiry date of three years given is the original certificate.



WASTEWATER MANAGEMENT

All the developing countries across world faces great threat as global population increases and cities grow, rapid urbanization because of migration of people from rural areas to the cities. The Wastewater Management becomes vital under environmental protection to conserve natural resources. Water treatment and wastewater treatment purification as well as new technologies for water reuse and recycling are of increasing importance the smart management of water allows citizen to have safe drinking potable water And wastewater treatment, reuse and recycle of wastewater becomes significant contribution increasing availability will be required to meet demand simultaneously increasing and improving supply reliability.

That means all aspects of water supply and wastewater treatment for households, business houses and manufacturing & service industries in the cities, that will require intake Pumping Station, Water Treatment Plant and Sewage Treatment Plant including distribution network to supply drinking water and potable water. It also includes the collection and treatment of wastewater and sewage network, pumping station and sewage treatment plant. The sledge produced from the sewage water treatment can be used to make bio-gas for power generation.

Furthermore, cities can reuse water, sewage from the sewage treatment plant can be further treated to convert it into clean water for non potable use, such as toilets flushing, gardening, irrigation and other industrial use. It is important to maintain quality through effective supervision, monitoring and inspection testing.

The water and wastewater management will include the following activities.

- a) WATER SUPPLY
- b) WATER TREATMENT
- c) WATER REUSE AND RECYCLING

The water treatment and wastewater treatment shall cover design, construction and operation phases effectively and efficiently.

a) WATER SUPPLY

a1. Intake pumping station: Pump house, sump, reservoir, intake well structure, piping, Inter-connection with incoming water pumping main, distribution chamber, Inlet Channel with flow measurement.

a2. Water treatment plant: Depending on the source and quality of raw water, the technologies and processes shall be selected for water treatment. Optimum solutions using conventional and advanced technologies such as membrane processes shall guarantee high levels of quality. The surface water treatment consists of process units such as flash mixing, flocculation, clarification, filtration, disinfection, backwash waste treatment, clear water conveyance with flow measurement.

a3. Clear water: Reservoir, pump house and substation building and chemical house.

a4. Transmission and Distribution Network: Piping, flow sensors, Water meters, quality monitoring and control, leak detection and control.



b) WATER TREATMENT

b1. Sewer Network: Collection Network piping and interceptors.

b2. Sewage pumping station : Pump house sump and piping interconnection with incoming Sewage pumping main, inlet channel with flow measurement.

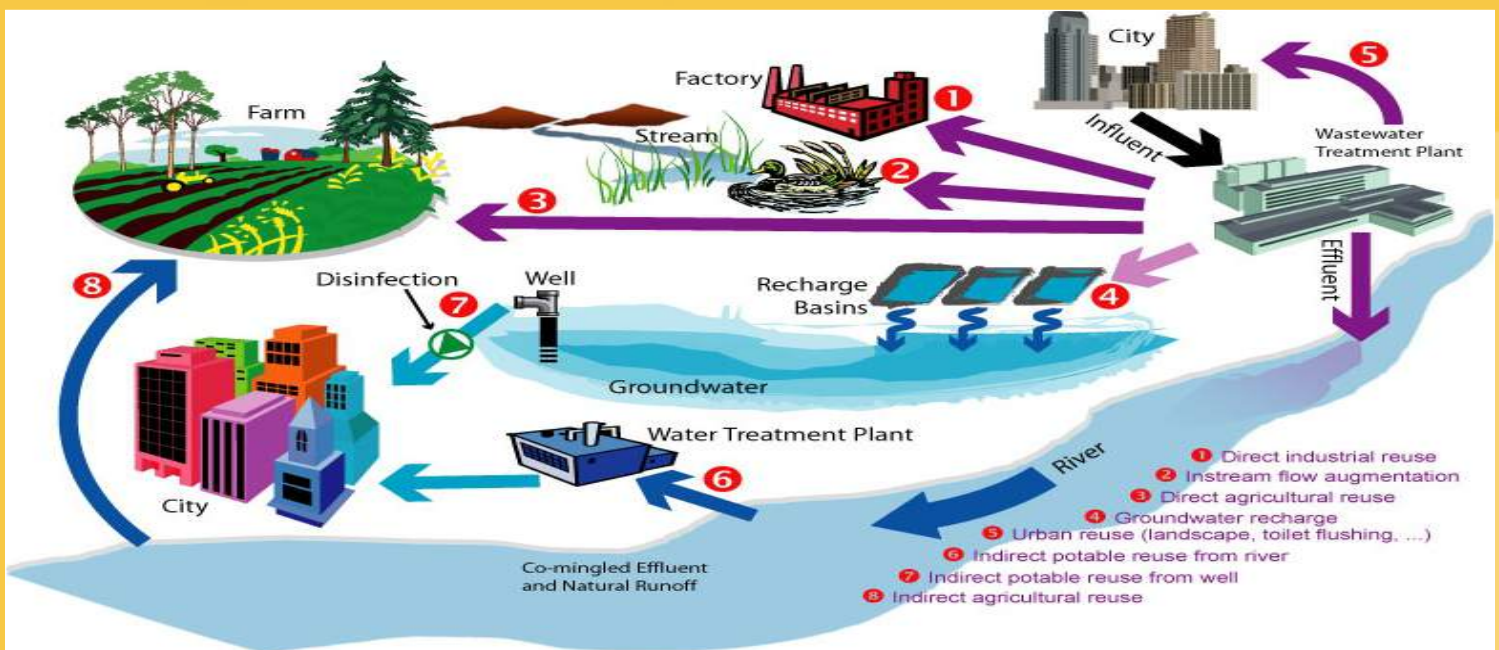
b3. Sewage Treatment Plant : Process units such as Biological processes, aeration system, nutrient removal process, clarification, sludge treatment, sludge digesters, biogas / energy recovery units.



c) WATER REUSE AND RECYCLING

C1. Water recycling plant: process units such as clarification chlorination, filtration system, membrane processes to convert treated wastewater into good quality water for reuse.

C2. Clear Water: Storage reservoir, clear water conveyance channel / piping with flow measurement system, pumping and substation building and chemical house.





OZONE DEPLETION

Dr. Purshottam Poddar
Quality Safety Health Environment Management Consultant
B.E. Mech., Dr.-Ing. (Germany)

Ozone depletion describes two distinct, but related observations: a slow, steady decline of about 4 percent per decade in the total amount of ozone in Earth's stratosphere since the late 1970s; and a much larger, but seasonal, decrease in stratospheric ozone over Earth's polar regions during the same period. The latter phenomenon is commonly referred to as the ozone hole. In addition to this well-known stratospheric ozone depletion, there are also tropospheric ozone depletion events, which occur near the surface in polar regions during spring.

The detailed mechanism by which the polar ozone holes form is different from that for the mid-latitude thinning, but the most important process in both trends is catalytic destruction of ozone by atomic chlorine and bromine. The main source of these halogen atoms in the stratosphere is photodissociation of chlorofluorocarbon (CFC) compounds, commonly called freons, and of bromofluorocarbon compounds known as halons. These compounds are transported into the stratosphere after being emitted at the surface. Both ozone depletion mechanisms strengthened as emissions of CFCs and halons increased.

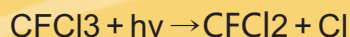
CFCs and other contributory substances are commonly referred to as ozone-depleting substances (ODS). Since the ozone layer prevents most harmful UVB wavelengths (270–315 nm) of ultraviolet light (UV light) from passing through the Earth's atmosphere, observed and projected decreases in ozone have generated worldwide concern leading to adoption of the Montreal Protocol banning the production of CFCs and halons as well as related ozone depleting chemicals such as carbon tetrachloride and trichloroethane. It is suspected that a variety of biological consequences such as increases in skin cancer, damage to plants, and reduction of plankton populations in the ocean's photic zone may result from the increased UV exposure due to ozone depletion.

OZONE CYCLE OVERVIEW:

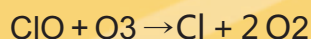
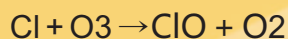
Three forms (or allotropes) of oxygen are involved in the ozone-oxygen cycle: Oxygen atoms (O or atomic oxygen), oxygen gas (O₂ or diatomic oxygen), and ozone gas (O₃ or triatomic oxygen). Ozone is formed in the stratosphere when oxygen molecules photodissociate after absorbing an ultraviolet photon whose wavelength is shorter than 240 nm. This produces two oxygen atoms. The atomic oxygen then combines with O₂ to create O₃. Ozone molecules absorb UV light between 310 and 200 nm, following which ozone splits into a molecule of O₂ and an oxygen atom. The oxygen atom then joins up with an oxygen molecule to regenerate ozone. This is a continuing process which terminates when an oxygen atom "recombines" with an ozone molecule to make two O₂ molecules: $O + O_3 \rightarrow 2 O_2$

The overall amount of ozone in the stratosphere is determined by a balance between photochemical production and recombination.

Ozone can be destroyed by a number of free radical catalysts, the most important of which are the hydroxyl radical (OH·), the nitric oxide radical (NO·) and atomic chlorine (Cl·) and bromine (Br·). All of these have both natural and anthropogenic (manmade) sources; at the present time, most of the OH· and NO· in the stratosphere is of natural origin, but human activity has dramatically increased the high in oxygen chlorine and bromine. These elements are found in certain stable organic compounds, especially chlorofluorocarbons (CFCs), which may find their way to the stratosphere without being destroyed in the troposphere due to their low reactivity. Once in the stratosphere, the Cl and Br atoms are liberated from the parent compounds by the action of ultraviolet light, e.g. ('h' is Planck's constant, 'v' is frequency of electromagnetic radiation)

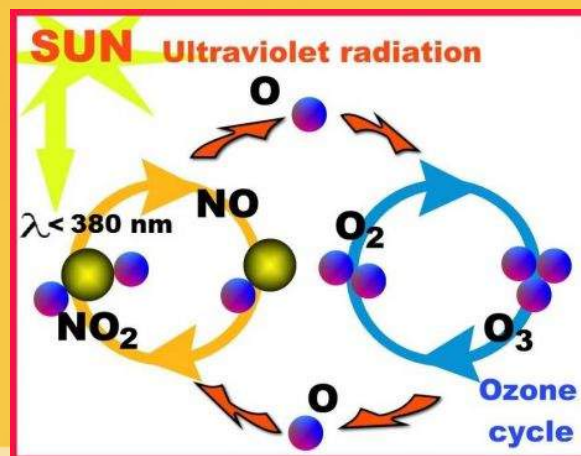


The Cl and Br atoms can then destroy ozone molecules through a variety of catalytic cycles. In the simplest example of such a cycle, a chlorine atom reacts with an ozone molecule, taking an oxygen atom with it (forming ClO) and leaving a normal oxygen molecule. The chlorine monoxide (i.e., the ClO) can react with a second molecule of ozone (i.e., O₃) to yield another chlorine atom and two molecules of oxygen. The chemical shorthand for these gas-phase reactions is:



The overall effect leads to an overall decrease in the amount of ozone. More complicated mechanisms have been discovered that lead to ozone destruction in the lower stratosphere as well.

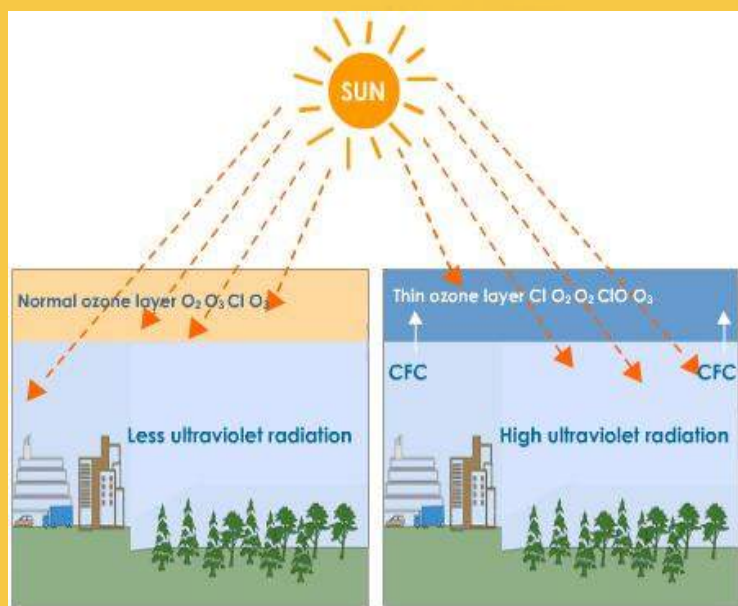
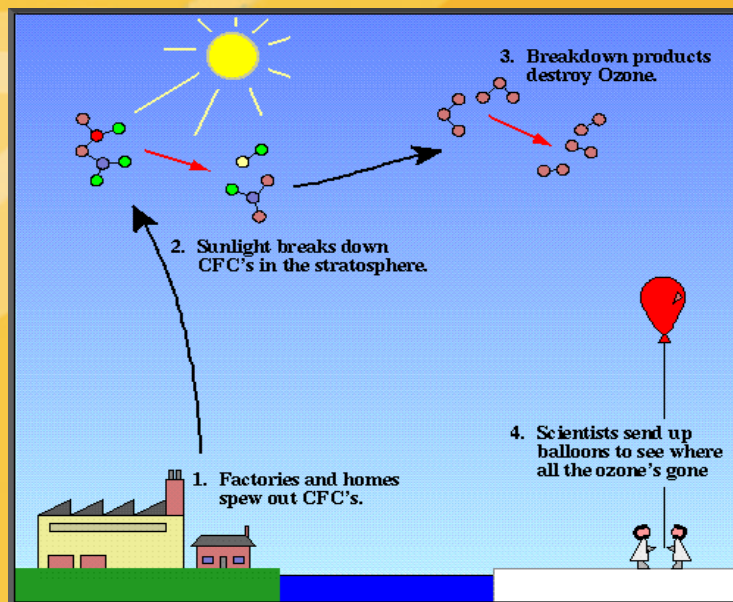
A single chlorine atom would keep on destroying ozone for up to two years (the time scale for transport back down to the troposphere) were it not for reactions that remove them from this cycle by forming reservoir species such as hydrogen chloride (HCl) and chlorine nitrate (ClONO₂). On a per atom basis, bromine is even more efficient than chlorine at destroying ozone, but there is much less bromine in the atmosphere at present. As a result, both chlorine and bromine contribute significantly to the overall ozone depletion. Laboratory studies have shown that fluorine and iodine atoms participate in analogous catalytic cycles. However, in the Earth's stratosphere, fluorine atoms react rapidly with water and methane to form strongly-bound HF, while organic molecules which contain iodine react so rapidly in the lower atmosphere that they do not reach the stratosphere in significant quantities. Furthermore, a single chlorine atom is able to react with 100,000 ozone molecules. This fact plus the amount of chlorine released into the atmosphere by chlorofluorocarbons(CFCs) yearly demonstrates how dangerous CFCs are to the environment.



CHEMICALS IN THE ATMOSPHERE

CFCS IN THE ATMOSPHERE

Chlorofluorocarbons (CFCs) were invented by Thomas Midgley in the 1920s. They were used in air conditioning/cooling units, as aerosol spray propellants prior to the 1980s, and in the cleaning processes of delicate electronic equipment. They also occur as by-products of some chemical processes. No significant natural sources have ever been identified for these compounds — their presence in the atmosphere is due almost entirely to human manufacture. As mentioned in the ozone cycle overview above, when such ozone-depleting chemicals reach the stratosphere, they are dissociated by ultraviolet light to release chlorine atoms. The chlorine atoms act as a catalyst, and each can break down tens of thousands of ozone molecules before being removed from the stratosphere. Given the longevity of CFC molecules, recovery times are measured in decades. It is calculated that a CFC molecule takes an average of 15 years to go from the ground level up to the upper atmosphere, and it can stay there for about a century, destroying up to one hundred thousand ozone molecules during that time.



CONSEQUENCES OF OZONE LAYER DEPLETION

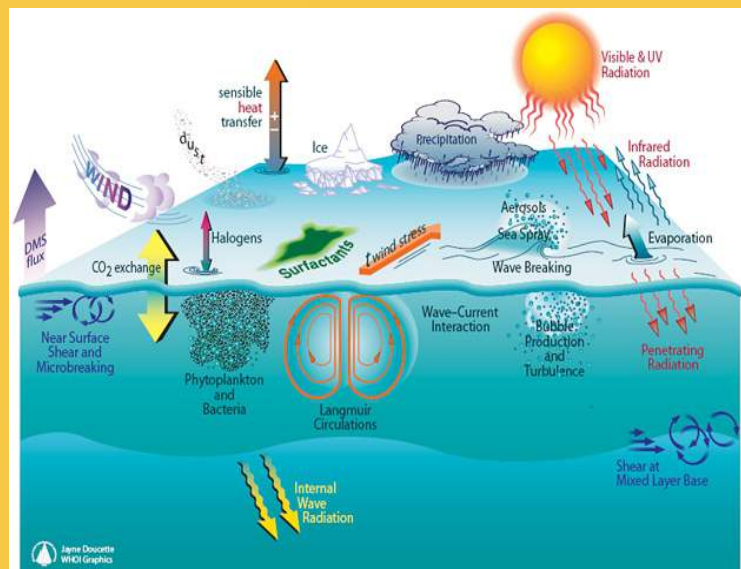
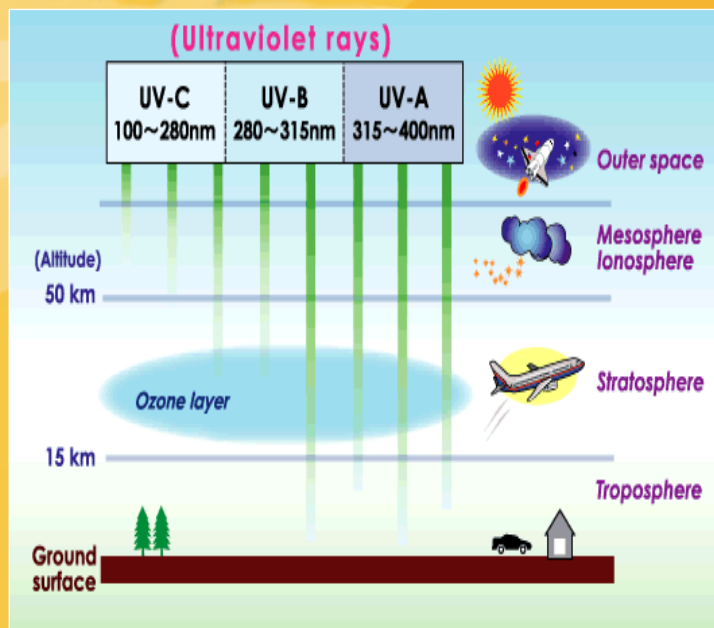
Since the ozone layer absorbs [UVB](#) ultraviolet light from the Sun, ozone layer depletion is expected to increase surface UVB levels, which could lead to damage, including increases in [skin cancer](#). This was the reason for the Montreal Protocol. Although decreases in stratospheric ozone are well-tied to CFCs and there are good theoretical reasons to believe that decreases in ozone will lead to increases in surface UVB, there is no direct observational evidence linking ozone depletion to higher incidence of skin cancer in human beings. This is partly due to the fact that [UVA](#), which has also been implicated in some forms of skin cancer, is not absorbed by ozone, and it is nearly impossible to control statistics for lifestyle changes in the populace.

INCREASED UV

Ozone, while a minority constituent in the earth's atmosphere, is responsible for most of the absorption of UVB radiation. The amount of UVB radiation that penetrates through the ozone layer decreases exponentially with the slant-path thickness/density of the layer. Correspondingly, a decrease in atmospheric ozone is expected to give rise to significantly increased levels of UVB near the surface.

Increases in surface UVB due to the ozone hole can be partially inferred by radiative transfer model calculations, but cannot be calculated from direct measurements because of the lack of reliable historical (pre-ozone-hole) surface UV data, although more recent surface UV observation measurement programmes exist (e.g. at Lauder, New Zealand).

Because it is this same UV radiation that creates ozone in the ozone layer from O₂ (regular oxygen) in the first place, a reduction in stratospheric ozone would actually tend to increase photochemical production of ozone at lower levels (in the troposphere), although the overall observed trends in total column ozone still show a decrease, largely because ozone produced lower down has a naturally shorter photochemical lifetime, so it is destroyed before the concentrations could reach a level which would compensate for the ozone reduction higher up.



EFFECTS OF OZONE LAYER DEPLETION ON HUMANS

UVB (the higher energy UV radiation absorbed by ozone) is generally accepted to be a contributory factor to skin cancer. In addition, increased surface UV leads to increased tropospheric ozone, which is a health risk to humans. The increased surface UV also represents an increase in the vitamin D synthetic capacity of the sunlight.

The cancer preventive effects of vitamin D represent a possible beneficial effect of ozone depletion. In terms of health costs, the possible benefits of increased UV irradiance may outweigh the burden.

PUBLIC POLICY IN RESPONSE TO THE OZONE HOLE

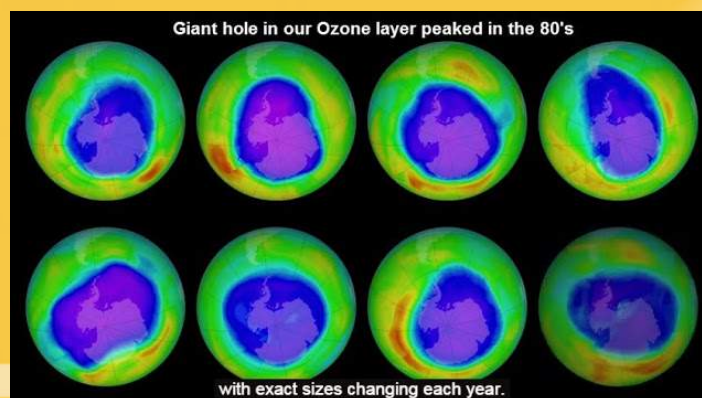
The full extent of the damage that CFCs have caused to the ozone layer is not known and will not be known for decades; however, marked decreases in column ozone have already been observed (as explained above).

After a 1976 report by the [U.S. National Academy of Sciences](#) concluded that credible scientific evidence supported the ozone depletion hypothesis, a few countries, including the United States, Canada, Sweden, and Norway, moved to eliminate the use of CFCs in aerosol spray cans. At the time this was widely regarded as a first step towards a more comprehensive regulation policy, but progress in this direction slowed in subsequent years, due to a combination of political factors (continued resistance from the halocarbon industry and a general change in attitude towards environmental regulation during the first two years of the Reagan administration) and scientific developments (subsequent National Academy assessments which indicated that the first estimates of the magnitude of ozone depletion had been overly large). The European Community rejected proposals to ban CFCs in aerosol sprays while even in the U.S., CFCs continued to be used as refrigerants and for cleaning circuit boards. Worldwide CFC production fell sharply after the U.S. aerosol ban, but by 1986 had returned nearly to its 1976 level. In 1980, [DuPont](#) closed down its research program into halocarbon alternatives.

In 1985 20 nations, including most of the major CFC producers, signed the Vienna Convention which established a framework for negotiating international regulations on ozone-depleting substances. That same year, the discovery of the Antarctic ozone hole was announced, causing a revival in public attention to the issue. In 1987, representatives from 43 nations signed the [Montreal Protocol](#). Meanwhile, the halocarbon industry shifted its position and started supporting a protocol to limit CFC production.

At Montreal, the participants agreed to freeze production of CFCs at 1986 levels and to reduce production by 50% by 1999. After a series of scientific expeditions to the Antarctic produced convincing evidence that the ozone hole was indeed caused by chlorine and bromine from manmade organohalogens, the Montreal Protocol was strengthened at a 1990 meeting in London. The participants agreed to phase out CFCs and halons entirely (aside from a very small amount marked for certain "essential" uses, such as [asthma inhalers](#)) by 2000. At a 1992 meeting in Copenhagen, the phase out date was moved up to 1996.

To some extent, CFCs have been replaced by the less damaging hydro-chloro-fluoro-carbons ([HCFCs](#)), although concerns remain regarding HCFCs also. In some applications, hydro-fluoro-carbons ([HFCs](#)) have been used to replace CFCs. HFCs, which contain no chlorine or bromine, do not contribute at all to ozone depletion although they are potent greenhouse gases. The best known of these compounds is probably HFC-134a, which in the United States has largely replaced CFC-12 in automobile air conditioners. In laboratory analytics (a former "essential" use) the ozone depleting substances can be replaced with various other solvents.





THE 'REDUCE, REUSE, RECYCLE' WASTE HIERARCHY

Mr. Milind Shah
(AUDITOR)
INTERNATIONAL CERTIFICATION SERVICES PVT. LTD.

The 'Reduce, Reuse, Recycle' Waste Hierarchy

If you have heard of something called the "waste hierarchy" you may be wondering what that means. It is the order of priority of actions to be taken to reduce the amount of waste generated, and to improve overall waste management processes and programs. The waste hierarchy consists of 3 R's as follows:

- ✓ Reduce
- ✓ Reuse
- ✓ Recycle

Called the "three R's" of waste management, this waste hierarchy is the guidance suggested for creating a sustainable life. You might be wondering as to how can you incorporate these principles in your daily life. They are not hard to implement. All you need is to bring a small change in your daily lifestyle to reduce waste so that less amount of it goes to the landfill that can reduce your carbon footprint.

By refusing to buy items that you don't need, reusing items more than once and disposing the items that are no longer in use at appropriate recycling centers, you can contribute towards a healthier planet.



Reduce



Reuse



Recycle

THE FIRST 'R' – REDUCE

The concept of reducing what is produced and what is consumed is essential to the waste hierarchy. The logic behind it is simple to understand – if there is less waste, then there is less to recycle or reuse. The process of reducing begins with an examination of what you are using, and what it is used for. There are three simple steps to assessing the reduction value of an item or process –

Is there something else that can be used for this purpose? Using multi-use items is essential to beginning reduction. One example would be a coffeepot and a cappuccino maker. Both of them do distinctly different things, but you can buy a coffeepot that has a steaming attachment on it so it can do both. The purchase of the one item means that you don't use two. It reduces the amount of production, and the amount of waste packaging material that will be generated.

Is this something that needs to be done? A lot of our waste material comes from items that are considered to be "disposable." Not in the sense that you use something once and then throw it away, that can actually be a part of environmental responsibility when you are working with medical items – disposable in this sense means whether or not what the item allows you to do has any real meaning or purpose.

Is the item a part of something that you need to do, or want to do in your life? There is a limit to what you need to be prepared for in life. Chances are you won't need a car that is equipped to handle a sandstorm in the desert. Buying one encourages production, wastes your resources and creates more generative waste than you can imagine. Always make sure that what you consume, or keep in your life as preparation – matches the reality of potential opportunity in your life.

Number 3 deals with the problems created by living within a culture of consumerism. This type of consumption driven culture also makes fulfilling the second "R" difficult, but it is getting easier to do.

REDUCE it!



THE SECOND 'R' – REUSE

You may have a box of things you keep that are broken or that you don't have a use for that you hang on to in-case you find another use for them; or you may find bargains on old furniture or go trash picking and get things that you can refinish – in either case you are working towards reusing the item. Learning to reuse items, or re-purpose them for a use different then what they are intended for is essential in waste hierarchy.

One of the best examples for how this is being done today is the modular construction of homes and office buildings that is being created out of discarded shipping containers. These large, semi-truck sized metal containers represent a huge waste problem. Repurposing them as homes and offices saves them from the landfills and doesn't require the additional expenditure of nature resources to melt down and reconfigure the metals used to create them.

You may either reuse those items for your own use or donate so that others can use them. You can reuse below items like:

- **Old jars and pots:** Old jars and pots can be used to store items in kitchen. They can also be used to store loose items together such as computer wires.
- **Tyres:** Old tyres can either be sent to recycling station or can be used to make tyre-swing tied on the trees.
- **Used wood:** Used wood can be used as firewood or can be used woodcrafts.
- **Newspaper:** Old newspapers can be used to pack items when you're planning to move to another home or store old items.
- **Envelopes:** Old and waste envelopes can be used by children to make short notes.
- **Waste paper:** Waste paper can be used to make notes and sketches and can be send to recycling center when you don't need them anymore.

Items that can be donated to others include:

- **Old books:** Your old books can be used by poor children or can be donated to public libraries.
- **Old clothes:** Your unwanted clothes can be used by street children or can be donated to charity institutions.
- **Old electric equipment:** Old electric equipment can be donated to schools or NGO's so that they can use them.
- **Rechargeable batteries:** Rechargeable batteries can be used again and again and helps to reduce unnecessary wastage as opposed to regular batteries.

Apart from this, you can build a small compost bin and reuse many waste items like used tea bags. The waste then degrades and turns into compost that help your plants grow and shine.



THE THIRD 'R' – RECYCLING

The last stage of the waste hierarchy is to recycle. To recycle something means that it will be transformed again into a raw material that can be shaped into a new item. There are very few materials on the earth that cannot be recycled. One of the issues facing communities that want to become more involved with a recycling effort is that while the relaying collection and sorting process may be affordable to implement, there still has to be a facility to receive and transform the discarded waste into a raw material. More progress is being made toward uniting recycling plants with industries that can process the waste material through agreements and incentive credits. One need to learn as to what products can be recycled and what not. By carefully choosing the products that can be recycled, can be a first step towards efficient recycling.

- Buy products from market that are made up of recycled materials i.e. the product should be environment friendly.
- Buy products that can be recycled such as glass jars.
- Invent new ways to recycle different items.

Avoid buying hazardous materials that could pose difficulty for you to recycle. Buy non-toxic products, whenever possible.



recycle

The possibilities are endless.



TRAINING & QUALIFICATION OF VARIOUS MANAGEMENT SYSTEM - CALENDAR JUNE TO AUGUST 2016

Sr.No	COURSE DATE	STATION	COURSE NAME	CONTACT PERSON	EMAIL ID	CONTACT DETAILS
1	3/6/2016 & 4/6/2016	Baroda	IQA	Surendra Mankar	ics_baroda@icsasian.com	0265 - 2792727 / 3202067
2	7/6/2016	Hyderabad	AW	Nagaraju Etikkala	ics_hyd@icsasian.com	40 - 23713335 / 32006086 / 40208034
3	8/6/2016	Chennai	AW	V Narayanan	ics_chennai@icsasian.com	044 - 24868074 / 32933080
4	9/6/2016	Ahmedabad	AW	Priti Mehta	ics_abad@icsasian.com	079 - 32202865
5	10/6/2016 to 12/6/2016	Udaipur	IMS / IQA	Rajesh Kataria	ics_udaipur@icsasian.com	294 - 2522031/ 2410759
6	14/6/2016 to 15/6/2016	Bangalore	IMS / IQA	Jayashankar	ics_bangalore@icsasian.com	80 - 22384620 / 1, 32002136
7	16/6/2016 to 17/6/2016	Bangalore	IMS / IQA	Jayashankar	ics_bangalore@icsasian.com	80 - 22384620 / 1, 32002136
8	17/6/2016 to 18/6/2016	Mumbai	IQA	Supriya Sawant	supriya.sawant@icstechnologies.org	022 - 242200900 / 926
9	21/6/2016 to 22/6/2016	Bangalore	IMS / IQA	Jayashankar	ics_bangalore@icsasian.com	80 - 22384620 / 1, 32002136
10	23/6/2016 to 24/6/2016	Bangalore	IMS / IQA	Jayashankar	ics_bangalore@icsasian.com	80 - 22384620 / 1, 32002136
11	25/6/2016	Pune	AW	Sayali Bhosale	ics_pune@icsasian.com	20 - 32305304 / 25280119 / 25280125
12	27/6/2016 & 01/7/2016	Nagpur	LA QMS	Sona Patel	ics_nagpur@icsasian.com	0712 - 3292174 / 09321675990
13	2/7/2016	Baroda	AW	Surendra Mankar	ics_baroda@icsasian.com	0265- 2792727 / 3202067
14	4/7/2016 to 5/7/2016	Hyderabad	IQA	Nagaraju Etikkala	ics_hyd@icsasian.com	40 - 23713335 / 32006086 / 40208034
15	5/7/2016 to 9/7/2016	Indore	LA QMS	Neetu Pandey	ics_indore@icsasian.com	731- 4076365 / 4274458 / 3208791
16	11/7/2016 & 12/7/2016	Delhi	IQA	Deepika Trivedi	ics_delhi@icsasian.com	11- 22042106 / 7,32619498
17	13/7/2016	Kolkatta	AW	Kingshuk Chanda	ics_kolkatta@icsasian.com	033 - 32542986 / 9339227221
18	14/7/2016	Jaipur	AW	Mahipal Singh	ics_ipr@icsasian.com	141 - 2610291 / 3114405
19	15/7/2016 to 16/7/2016	Ahmedabad	IQA	Priti Mehta	ics_abad@icsasian.com	079 - 32202865
20	18/7/2016 to 19/7/2016	Belgaum	IQA	Sunil Datar	ics_belgaum@icsasian.com	831 - 2443141 / 9341370107
21	19/7/2016 to 23/7/2016	Nashik	LA QMS	Vikash Dawal Ahire	ics_nashik@icsasian.com	253 - 2357777 / 3205994

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22	25/7/2016	Ludhiana	AW	Gaganpreet Rainoo	ics_ludhiana@icsasian.com	161-3230461 / 5050336-7 / 4626578
23	26/7/2016 & 27/7/2016	Vapi	IQA	Siraj Ansari	ics_vapi@icsasian.com	260-3291135 / 2423812
24	28/7/2016 & 29/7/2016	Nagpur	IQA	Sona Patel	ics_nagpur@icsasian.com	0712 - 3292174 / 09321675990
25	30/7/2016	Kolhapur	AW	Bhikaji Dabhole	ics_kolhapur@icsasian.com	231 - 2653722 / 9373107108
26	30/7/2016 & 31/7/2016	Kanpur	IQA	Santosh Rathaur	ics_kanpur@icsasian.com	512 - 2262648 / 3268996
27	1/8/2016 & 2/8/2016	Baroda	IQA	Surendra Mankar	ics_baroda@icsasian.com	0265 - 2792727 / 3202067
28	2/8/2016 & 6/8/2016	Bangalore	LA QMS	Jayashankar	ics_bangalore@icsasian.com	80 - 22384620 / 1, 32002136
29	8/8/2016	Delhi	AW	Deepika Trivedi	ics_delhi@icsasian.com	11 - 22042106 / 7, 32619498
30	9/8/2016 & 10/8/2016	Indore	IQA	Neetu Pandey	ics_indore@icsasian.com	731 - 4076365 / 4274458 / 3208791
31	11/8/2016	Udaipur	AW	Rajesh Kataria	ics_udaipur@icsasian.com	294 - 2522031 / 2410759
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34	18/8/2016	Belgaum	AW	Sunil Datar	ics_belgaum@icsasian.com	831 - 2443141 / 9341370107
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39	29/8/2016	Mumbai	AW	Supriya Sawant	supriya.sawant@icstechnologies.org	022 - 242200900 / 926
40	29/8/2016 & 30/8/2016	Nashik	IQA	Vikash Dawal Ahire	ics_nashik@icsasian.com	253 - 2357777 / 3205994
41	30/8/2016 to 31/8/2016	Pune	IQA	Sayali Bhosale	ics_pune@icsasian.com	20 - 32305304 / 25280119 / 25280125
42	31/8/2016	Vapi	AW	Siraj Ansari	ics_vapi@icsasian.com	260 - 3291135 / 2423812

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Corporate office

22 /23, Goodwill Premises, Swastik Estate, 178 CST road, Kalina, Santacruz (E), Mumbai - 400 098, Maharashtra.
Tel : +91-22-26507777-82, 42200900, 30608900-4 Fax : 42200933 E-mail : info@icspl.org / info@icsasian.com

Overseas office

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Web : www.icsasian.com / www.icspl.org

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