



TEN WAYS TO REDUCE EMISSIONS
PROJECTS AND IDEAS FOR ROTARY
CLUBS



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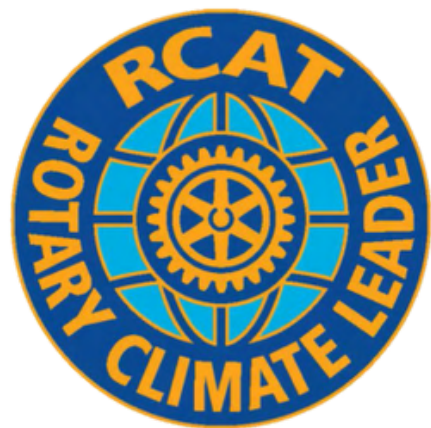
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10 Ways to Reduce Emissions

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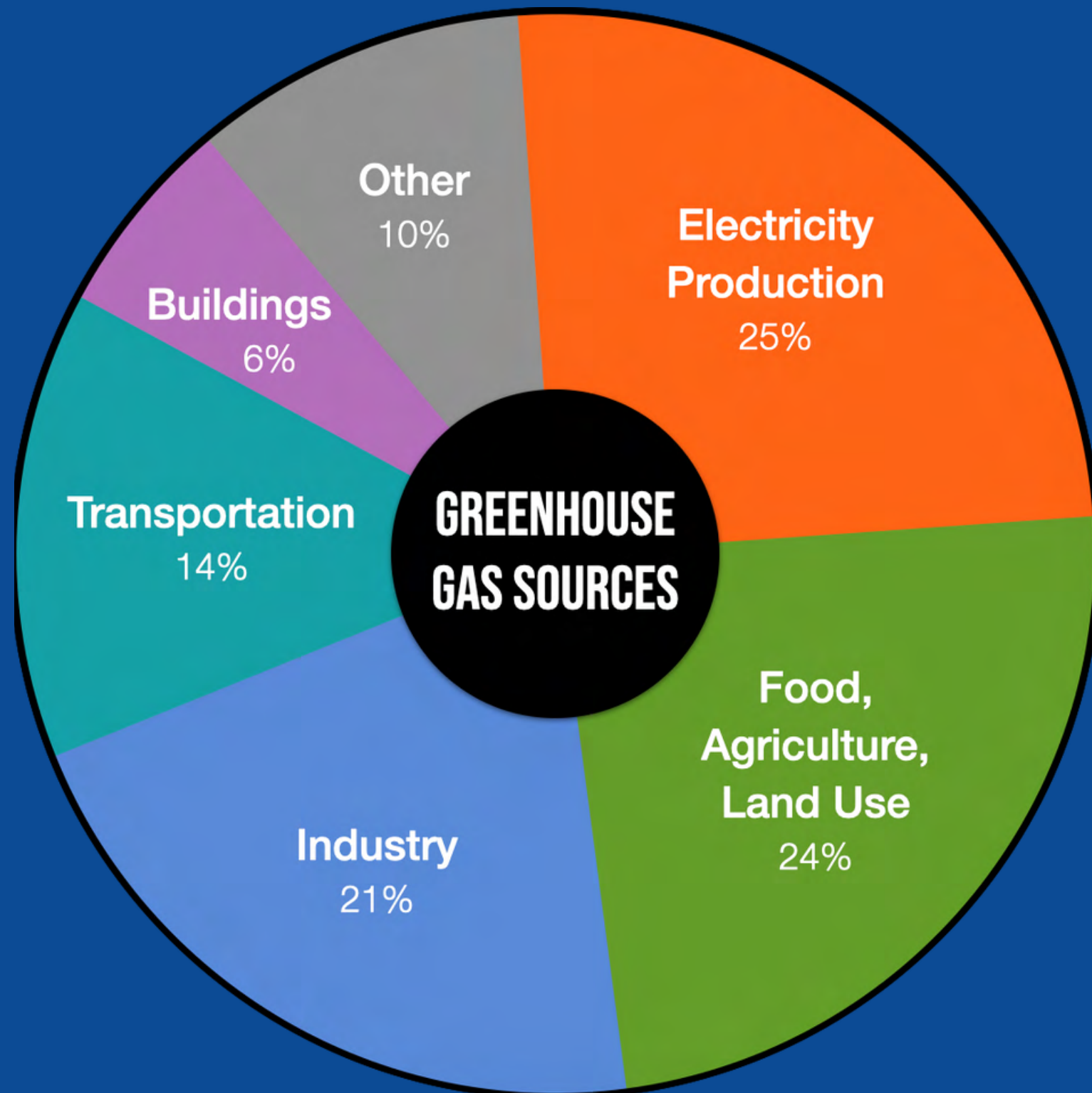
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INTRODUCTION



GREENHOUSE GAS CONTRIBUTORS



- The graph shows a chart that distributes the sources of greenhouse gas into six areas.
- Almost 50% of greenhouse gas emissions are produced by just two areas: "Electricity Production" and "Food, Agriculture, and Land Use".
- This graph was produced by *Project Drawdown*, a non-profit research group that is working to lessen greenhouse gas emissions globally.
- Solutions within these areas of focus are critical in lowering greenhouse gas emissions and therefore climate change.

Ten Ways to Reduce Emissions

- Although the problem looks daunting, there are achievable solutions that are incredibly effective at reducing emissions. Not all of these solutions are evenly applicable to everyone in all parts of the world, but there are projects in this toolkit that everyone can implement. Together, we can decrease green house gas emissions and win the fight against climate change.

PLANT-RICH DIETS





PLANT-RICH DIETS

What is a plant-rich diet?

- A plant-rich diet is made up of mostly plant foods, including fruit, vegetables, grains, and legumes, while attempting to avoid large amounts of meat, dairy, and eggs in one's diet.

PLANT-RICH DIETS

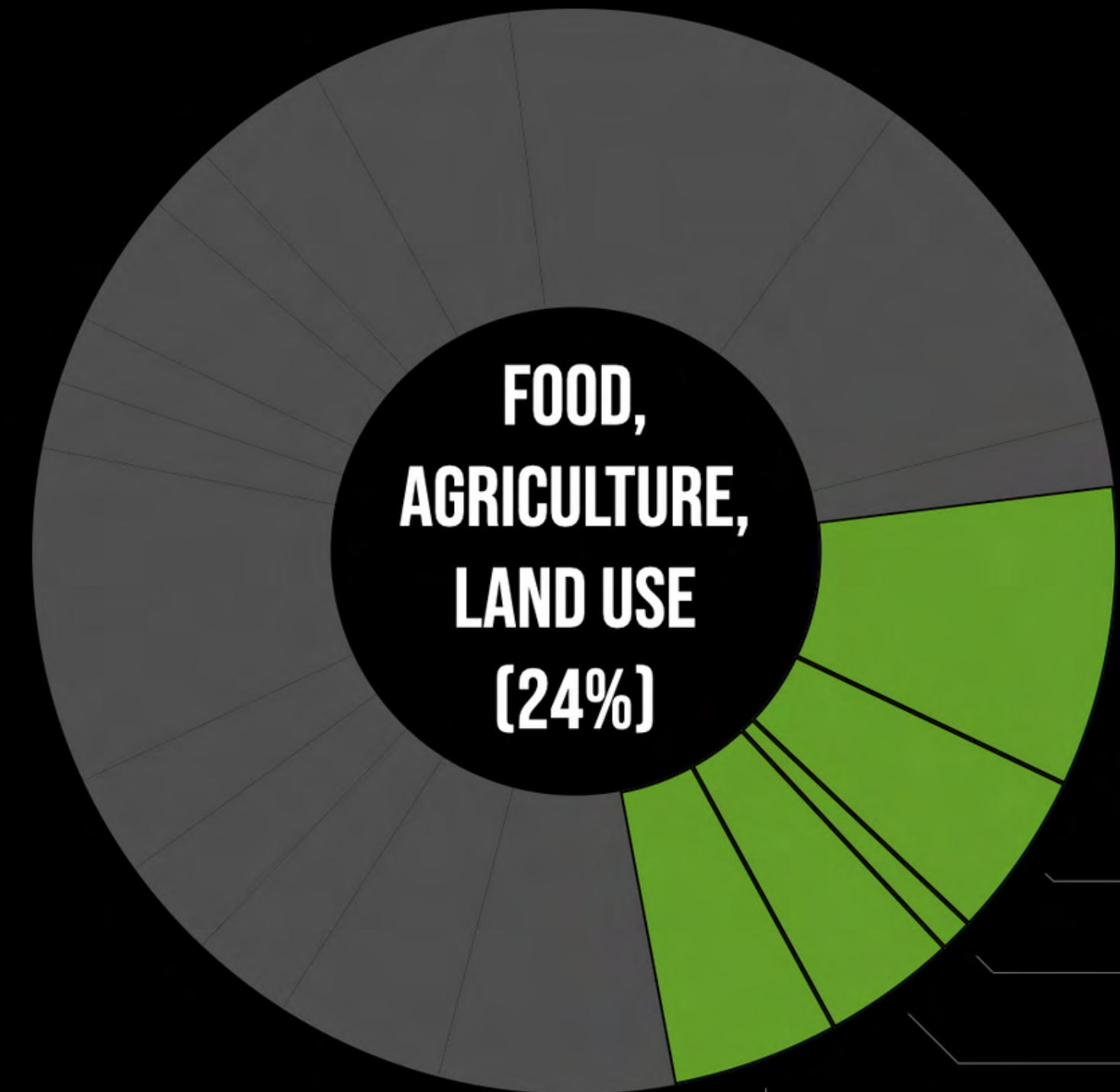
Why is it important?

- One quarter of all greenhouse gas emissions is from food, agriculture, and land use.
- 340 million tons of carbon is released into the atmosphere each year due to deforestation for cattle ranch production.

"It would indeed be beneficial, for both climate and human health, if people in many rich countries consumed less meat..."

- Hans-Otto Pörtner

Co-chair of the Intergovernmental Panel of Climate Change (IPCC)



PLANT-RICH DIETS

Project Ideas

Make a Club-Wide Pledge

- Starting a pledge with your Rotary club is a great way to encourage members to start eating more plant-based meals.
- Plant-based diet pledges are impactful for both individuals and groups wanting to contribute to the reduction of emissions.
- For example, Rotary clubs can institute a 30 day 50% pledge, where members agree to cut out 50% of meat from their diets for 30 days.

PLANT-RICH DIETS

Project Ideas

ESRAG Plant-Rich Diet Challenge

- The Environmental Sustainability Rotary Action Group (ESRAG) has developed a comprehensive plant-rich diet starter kit to help show how one can begin their own journey to eating less meat.
- From "Grocery and Pantry Tips" to plant-rich recipes, that anyone can make, ESRAG is helping people pursue plant-rich diets and thus help reduce emissions from our atmosphere.



Click [HERE](#) for more information on this project.

PLANT-RICH DIETS

Project Ideas

GLOBAL CLIMATE *Pledge*

NUTRITION

(These are good for your health too!)

- Eat Less *
- Participate in Meatless Mondays
- Switch from red meat to fish or chicken*
- Go Vegetarian*
- Go Vegan*
- Use leftovers for dinner once a week*

The Global Climate Pledge

- You have the option to commit to a wide variety of pledge options. One area to select from has to do with "nutrition".
- Because the Global Climate Pledge recognizes the importance of plant-rich diets in relation to combating climate change, there are numerous commitments aimed at reducing the amount of meat in one's diet.
- For example, your Rotary club can commit to participating in Meatless Mondays, taking the steps along with many others towards a greener future.
- Click [HERE](#) to sign the individual Global Climate Pledge.

COMPOSTING



COMPOSTING

What is composting?

- Compost is organic material that can be added to soil to help plants grow.
- Making compost keeps these materials out of landfills where they take up space and release methane, a potent greenhouse gas.
- Food scraps and yard waste, together, currently make up more than 30% of what we throw away, and could be composted instead.



COMPOSTING

Why is composting important?

"Cutting down on food waste could have nearly the same impact on reducing emissions over the next three decades as onshore wind turbines. More than 70 billion tons of greenhouse gases could be prevented from being released into the atmosphere." (Project Drawdown)

COMPOSTING

Potential for Projects

- The Environmental Protection Agency (EPA) estimates that only 4.1% of wasted food was composted in 2018.
- Many households would be able to compost their food waste, but do not have the equipment or the knowledge to do so.
- Rotary clubs can help households or businesses in their communities by empowering them to start their own composting system, and can even create the facilities needed to compost.

COMPOSTING

Project Ideas

Do-It-Yourself Composting Set-Up

- A household composting system can vary but generally the necessary equipment consists of a composting bin and a tumbler, used to turn the compost.
- This is where Rotary clubs can help: by creating the equipment needed for households in their community to participate in the benefits of composting.
- Click [HERE](#) for a low cost step-by-step tutorial on how to make a DIY composting bins out of wood pallets.
- Click [HERE](#) for a DIY tutorial on building composting tumblers out of recycled materials.



COMPOSTING

Project Ideas

"Let's Get Lunch out of Landfills!"

- Another way Rotary clubs can make progress in this area, is by reaching out to schools, a large contributor of food waste, and assist them in developing their own composting system.
- A project similar to this has been done by Rotary before and has made significant progress in reducing food waste in their targeted schools.
- The "Let's Get Lunch out of Landfills" project was started by Rotarian Joe Richardson in 2018 along with the help from the **Rotary Club of Southern Frederick County**. It lays out a comprehensive project for other Rotary clubs to implement by connecting with schools in their community to help reduce the large amounts of food waste that is frequently produced by schools.
- Click [HERE](#) for more information on the project.



REUSE & RECYCLE





REUSE & RECYCLE

What does Reusing mean?

- Examples of "reusing" are:
 - Buying a reusable grocery bag rather than paper or plastics ones.
 - Buying a reusable water bottle rather than plastic ones.
- Reusing reduces waste that would most likely end up in landfills.

What does Recycling mean?

- Properly recycling items allows them to be used again instead of being disposed of in a landfill.

REUSE & RECYCLE

Why is it important?

- If waste is not recycled or reused then it must go somewhere, and it often finds its way to landfills.
- However, if not disposed of properly, which happens quite often, trash can end up in oceans and cause damage to the biosphere as well.
- Food waste makes up a large portion of the greenhouse gas emissions from landfills, but plastics, paper materials, aluminum, and other types of manufactured products also find their way into landfills. There, they off-gas and release toxins into the atmosphere.

REUSE & RECYCLE

Potential for Projects

- With 1.2 million Rotarians around the world, a tremendous impact can be made to reduce the pollution that comes from waste by taking the steps to Reuse and Recycle.
- These individual efforts go a long way and the little things can make a huge difference.
- Rotary clubs can take on projects that focus on Reusing and Recycling and change an entire community's relationship with how we dispose of our trash.

REUSE & RECYCLE

Project Ideas

Household Recycling System

- From an individual standpoint, an understanding of what is and is not recyclable is very important. But this information is so accessible any individual can start their own household recycling system.
- Each city may have different recycling mandates, and recognizing these are vital for you or your household to become less wasteful.
- Recycling incorrectly or not at all can have harmful environmental consequences such as sending recyclable material to an incinerator, which pollutes our atmosphere, or to a landfill, where it could off-gas harmful pollutants.
- Going to your city's website and typing in "recycling" in the search bar, should lead you to all the answers you need on how to recycle correctly.
- With this knowledge, you can print out information on exactly what can and can not be recycled and place it somewhere near your recycling bin as a reminder to yourself or to those in your household to be cognizant of what you are throwing away.

REUSE & RECYCLE

Project Ideas

Community Recycling Program

- The **Rotary Club of Vero Beach**, Florida, USA created a plastic recycling project in its community.



"In collaboration with the county landfill, the club has placed recycling bins in commercial facilities — such as a brewery and a store at a local outlet mall — to collect the shrink-wrap that their pallets of products are wrapped in. The county then takes the shrink-wrap to a recycling center, which sells it to companies that make plastic furniture and outdoor decking."

- Rotary.org

- Progress in reducing emissions can be most impactful at the local level, and creating a community's own recycling program is a great example of that.

REUSE & RECYCLE

Project Ideas

Recycle Across America

- Contamination of recyclables, such as grease on a recyclable container, can cause that container to be sent to a landfill, due to the contamination, when it could have been recycled instead. Knowing this type of information is a responsibility we all have when we recycle.
- Standardized recycling labels is a good way to advertise and educate sustainable recycling habits. Working with your local waste management company and post these labels around bins in your community to help spread the word on how to recycle correctly.
- Recycle Across America, a nonprofit organization that works to educate the public on the importance of recycling, has created these standardized recycling labels that work for every sorting need.
- Click [HERE](#) for a link to Recycle Across America's Standardized Labels.

REUSE & RECYCLE

Project Ideas

Rotary Club of Little Rock and Camp Mourão Recycling Project

- Partnering with other Rotary clubs abroad is another example of how Rotary clubs can participate in recycling efforts.
- The **Rotary Clubs of Campo Mourão and Little Rock, Arkansas**, through working with a local environmental program that coordinates the recycling cooperative, developed a project to increase workers' capacity to separate and process recyclable materials, providing both economic and environmental benefits.
- The project funded equipment to improve worker safety and efficiency and provided environmental and financial training.
- Workers sorted an additional 2.63 tons of recyclables per month after the grant project was implemented, and their income increased nearly 25% per month. A win-win solution!



REUSE & RECYCLE



Project Ideas

Ecobricks Project

- "An ecobrick is a plastic bottle packed with used plastic to a set density. They serve as reusable building blocks. Ecobricks can be used to produce various items, including furniture, garden walls and other structures" ¹
- The **Rotary Club of Rosebank**, in South Africa, has implemented ecobricks as a way to reduce their emissions.
 - The ecobricks they have made are channelled to *Khensani's Collection*, a registered non-profit Company in South Africa, which uses them to build school rooms in Diepsloot, a severely disadvantaged community.
- For more information on ecobricks, click [HERE](#).

1. <https://en.wikipedia.org/wiki/Ecobricks>

FOREST RESTORATION



FOREST RESTORATION

What is it?

- Reforestation enhances the planet's ability to absorb carbon dioxide, as it is one of the world's biggest carbon sinks.
- The Amazon rainforest, for example, "stores the equivalent of four or five years worth of human-made carbon emissions, up to 200 gigatons of carbon."



FOREST RESTORATION

Why is it important?

- Forests sequester carbon and release oxygen and since they cover about 30% of the world's surface, they are considered one of earth's largest carbon sinks.
- Tropical forests once covered 12% of the world's land; today, it's 5%. According to the Project Drawdown authors, that loss accounts for up to 19% of the greenhouse gas emissions caused by humans.

FOREST RESTORATION

Project Ideas

Reforestation Project

Undertaken by...

- The Rotary Club of Torino Mole Antonelliana, Italy
- The Rotary Club of Annecy Tournette, France
- The Rotary Club of Antananarivo-Tsimbaroa, Madagascar



- Reforestation projects are some of the most widely implemented projects that exist in forest restoration due to both their plausibility and effectiveness.
- These three clubs partnered with a local nonprofit on a project to reforest about 125 acres with native species grown from wild seed, creating jobs for area families and a tourism infrastructure.
- Rotarians also trained women in gardening techniques, constructed toilets, and provided 500 improved cookstoves that reduced the families' dependence on charcoal.

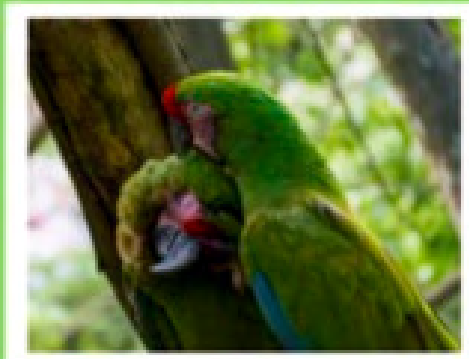
FOREST RESTORATION

THE ROTARY FOREST IN PANAMA

We're working to empower vital reforestation efforts that support local indigenous communities as well as provide habitats for critically endangered species like the Great Green Macaw through reforestation.

Every \$25 donation:

- Plants one Almendro tree and purchases protected land to ensure longevity
- Provides food and habitat for 100 species of birds, 19 species of bees and 16 species of mammals.
- Receives semiannual carbon sequestration tracking of the new tree
- Supports indigenous communities through reforestation employment
- Provides stable CO2 sequestration of over 1000lb of CO2 over 15 years
- Receives a "Tree of Life" certificate from Rotary & The Global Climate Pledge



GLOBAL
CLIMATE
Pledge

Rotary
Rotary Club of
Newport Beach

Project Ideas

The Rotary Forest in Panama

- The **Rotary Club of Newport Beach** has implemented its own forest restoration project in Panama (left), that will provide a habitat for endangered species, as well as stable sequestration of CO2.
- The project will absorb 1000lbs of CO2 over 15 years.



The President of the Newport Beach Rotary Club, Steve Bender



FOREST RESTORATION



Project Ideas

Combatting Desertification Through Reforestation in Madagascar

- The **Rotary Club of Toliara**, in Madagascar, is working to combat wind erosion and desertification in the deep south by planting 100,000 trees per year to contribute to the state's objective of reforesting 40,000 hectares each year.
- *Tiomena*, a natural phenomenon that causes dust and sandstorms in the region, has increased consequences in areas with low vegetation cover. This project consists of restoring degraded lands and setting up windbreaks by reforesting the area.
- Learn more about this phenomenon [HERE](#).
- Click [HERE](#) for more information on how the Rotary Club of Toliara is implementing this project.

FOREST RESTORATION

Project Ideas

Planting Trees Project

- The **Rotary Club of Cali Norte**, in Columbia, has committed to planting 350 trees at a home for rehabilitation.
- They are contributing to CVC's goal of planting 8 million trees by 2023.
- CVC is an environmental content program based in the Valle del Cauca in Colombia.
- Click [HERE](#) for more information on the Rotary Club of Cali Norte's great initiative.



ENERGY EFFICIENCY





ENERGY EFFICIENCY

What is it?

- In many places in the world, one can not simply flick on a light switch or turn a knob to cook something on the stove. These places rely on other energy sources that are more accessible to them, and some of these can be harmful to both the environment and the people using these energy sources.
- Providing those in the developing world, who rely on these energy sources, with more efficient sources of energy can save lives and at the same time help save the planet.

ENERGY EFFICIENCY

Why is it important?

- One of the biggest green house gas contributors is the production of electricity which totals approximately 24% of all greenhouse gas sources.
- If renewable energy, such as wind, solar, geothermal, or nuclear, was integrated into the larger energy infrastructure of the world, emissions would reduce drastically.



ENERGY EFFICIENCY

Why is it important?

- However, in the developing world some renewable energy solutions may not be a practical solution for reducing emissions due to high costs and a lack of an in-place energy infrastructure.
- For those who can not afford kerosene, propane, or electricity for their cooking needs, they must rely on traditional wood fire stoves.
- The black carbon emitted from these fires, which absorbs sunlight, is released into the atmosphere, contributing to climate change. Furthermore, the need for the wood for these fires drives deforestation.
- With many of these cooking fires taking place indoors, more people die from indoor air pollution than malaria, tuberculosis, and HIV/AIDS combined, according to the World Health Organization. Providing those who need it with more efficient cooking tools can help to both save lives and reduce emissions.

ENERGY EFFICIENCY

Project Ideas

Eco-Stove Project

- The **Rotary Club of Guatemala De Este** started a project designed to reduce the health problems and carbon emissions that come from traditional cooking stoves by helping provide families in their community "Eco-stoves". These stoves are much more sustainable and efficient than the previous traditional cooking stoves.
- The project provided 1,000 families with Eco-stoves that vent to the outside and decrease the amount of firewood needed by 70 percent. Each stove is expected to reduce carbon emissions by 3 to 4 tons per year.
- For more information on Rotary Club of Guatemala De Este's Eco-stove Project, click [HERE](#)



ENERGY EFFICIENCY

Project Ideas

"Rotarians on the Roof" Project

- Rotary clubs can also have an impact by becoming trained in the field of solar energy and participate in solar installations around their community.
- Chris Potter, a Rotarian for **Rotary Club of Los Gatos**, was trained by a non-profit solar installer and learned the skills necessary for the installation of solar panels.
- The Rotary Club of Los Gatos states in their report of the project that, "Any Rotary Club can start a new service project for climate change action by becoming trained and participating in rooftop solar installations for non-profit organization buildings your local community."
- Click [HERE](#) for more information on Los Gatos Rotary Clubs "Rotarians on the Roof Project"



TRANSPORTATION



TRANSPORTATION

What is it?



- Human beings need a means of transportation, and as the population of our world continues to grow, so does our need for more accessible and efficient means of transportation.
- Humans are reliant upon certain modes of transportation whether it be transportation of goods through the supply chain, by freight car or cargo vessels, or transportation of people by transit or passenger vehicles.
- Most transportation is fueled using hydrocarbons (gasoline, diesel, jet fuel, etc.) and the burning of these fuels release emissions into our atmosphere. Finding more sustainable ways of transportation is essential in reducing emissions.

TRANSPORTATION

Why is it important?

- According to the International Energy Agency (IEA), transport has the highest reliance on fossil fuels of any sector and accounts for 37% of CO2 emissions from end-use sectors
- From 1990 to 2019, emissions released from the transportation sector increased more than any other sector in the United States
- In order to reduce emissions, we must find ways to make the transportation sector more environmentally sustainable

TRANSPORTATION

What can be done?

- The three most prominent ways to reduce GHG emissions are:
 - encouraging consumer purchase of more efficient new vehicles
 - improving urban infrastructure
 - implementing more high-speed rails
- These expansions would also lead to the creation of many job opportunities

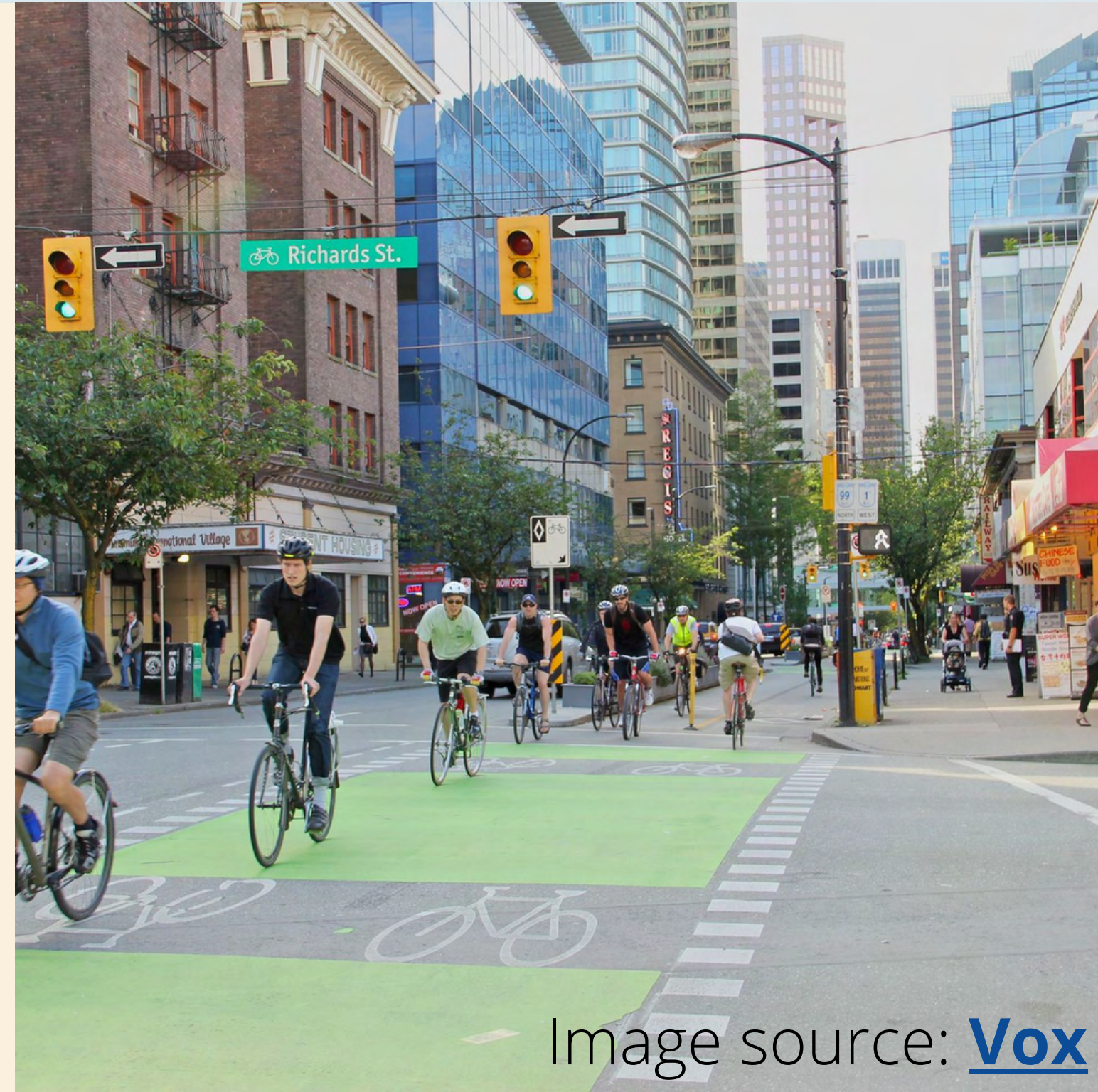


Image source: [Vox](#)

TRANSPORTATION

Urban Infrastructure

- In big metropolitan cities, improving urban infrastructure can promote the reduction of GHGs. Some examples include:
 - **recharging infrastructure for electric vehicles** (EVs) and electrified ride sharing services (the more charging structures, the bigger the incentive to buy an EV)
 - reallocating road space to allow for increased walking and cycling
 - increasing public transport options (plays an important role in ensuring equal access to employment and education, and is an energy efficient means of transport)

TRANSPORTATION

Project Ideas



EV Charging Station Installation Project

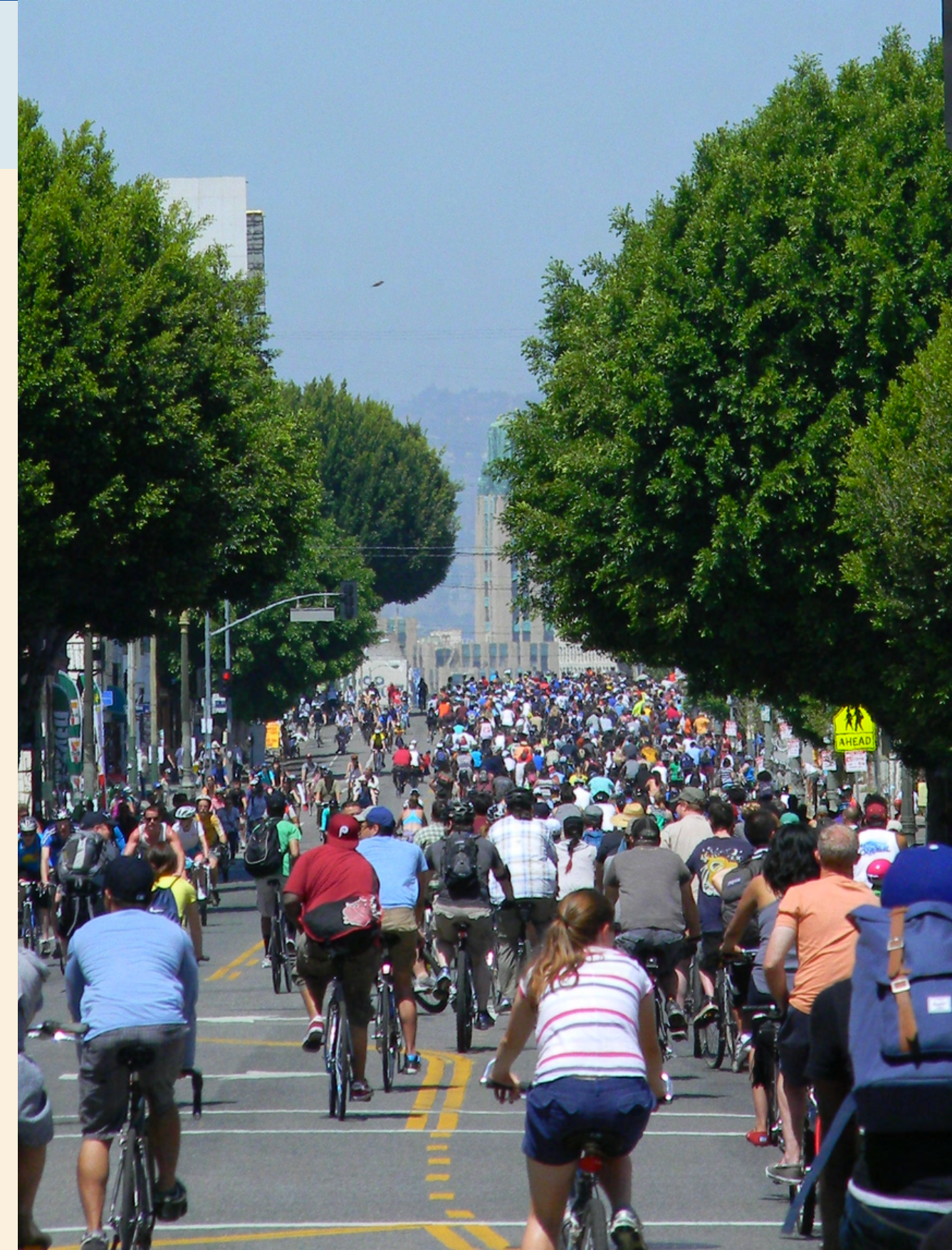
- **Denville Rotary Club** helped finance an Eagle Scout project that consisted of installing an electric vehicle (EV) charging station in Denville, New Jersey.
- Click [HERE](#) for more information on this project.

TRANSPORTATION

Project Ideas

Volunteering Projects

- **Rotary Club of Woodland Hills** volunteered for Fleet Street at a CicLAvia event.
- CicLAvia is an organization based in Los Angeles that is inspired by Bogotá's weekly ciclovia (a weekly close-down of 120km of city streets to motorized traffic on Sundays)
- CicLAvia temporarily closes streets to car traffic and opens them to Angelenos to use as a public park.
- Click [HERE](#) for more information on this project.
- Learn more about CicLAvia [HERE](#).



FEMALE EDUCATION & EMPOWERMENT



FEMALE EDUCATION & EMPOWERMENT



What is it?

- Female education is a broad term focused primarily on the opportunity for girls and women to have access to quality education.
- Female education can also go further than purely academic education. It can also mean girls and women learning how to navigate and compete in complex labor markets; creating opportunities for economic independence; and creating more independence about when or if a women decides to have children.

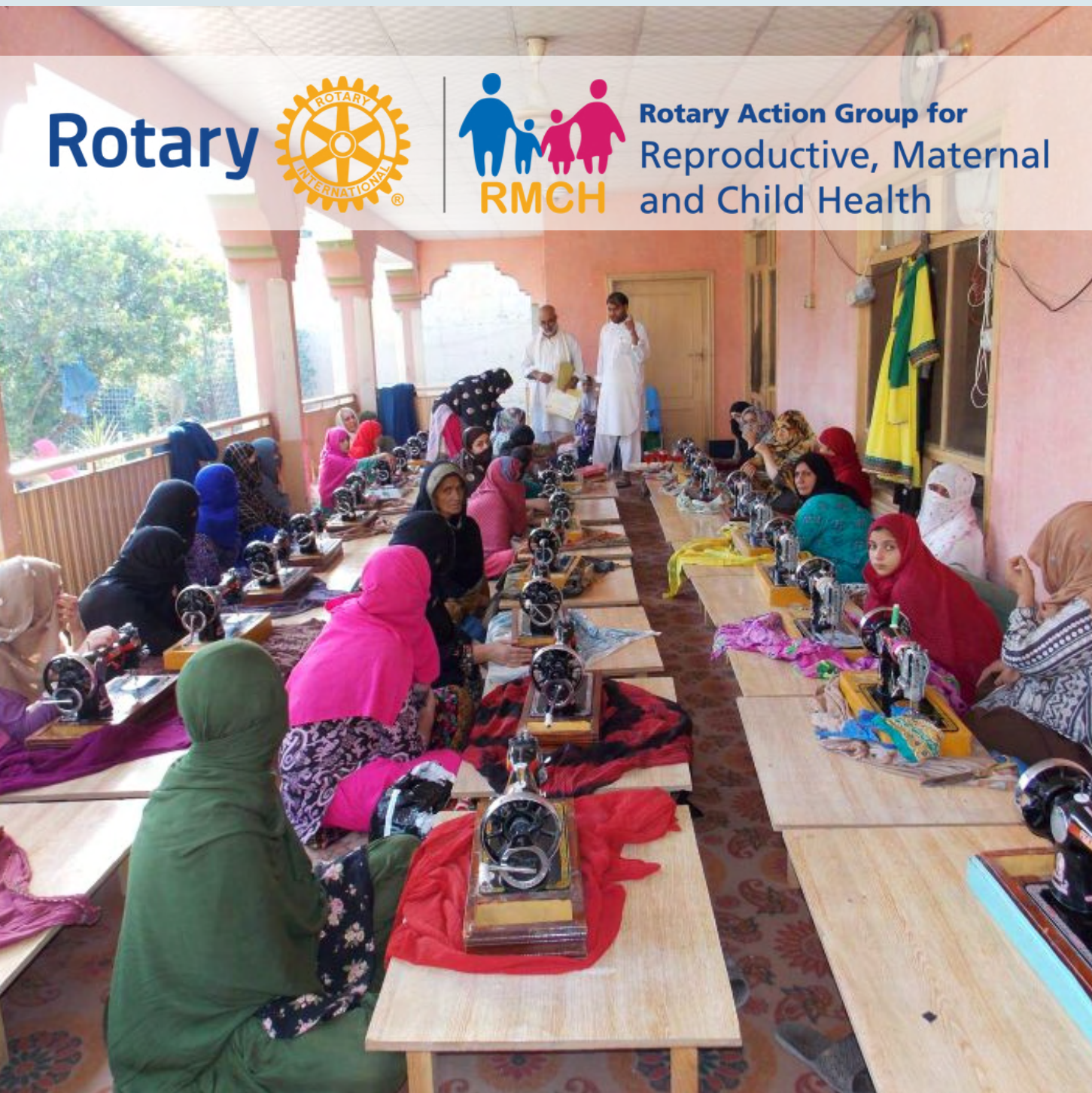
FEMALE EDUCATION & EMPOWERMENT

Why is it important?

- A woman with no schooling has four or five more children than a woman with 12 years of schooling, meaning that educating girls will have a huge impact on population growth.
- As population increases, the amount of emissions being released into the atmosphere also increases. Therefore, it is logical to reason that providing greater female education will in turn help reduce emissions.
- Additionally, providing women with more educational opportunities creates a more educated society, and as a result leads to a more environmentally sustainable society.

FEMALE EDUCATION & EMPOWERMENT

Project Ideas



Rotary



Rotary Action Group for
Reproductive, Maternal
and Child Health

Rotary Action Group for Reproductive, Maternal and Child Health (RMCH)

- The **RMCH** is an international non-profit organization with 25 years of experience in maternal and child health.
- Click [HERE](#) for more information on RMCH's mission and their strategies for project implementation.

Vocational and Educational Centers

- The long-term goal of these centers, also known as "Saheli Centers", include the reduction of gender-based inequality and the mitigation of unwanted pregnancies.
- The Rotary Action Group for RMCH works with vocational and educational centers that promote women's engagement in the workforce and provide them with the knowledge and skills needed to raise household income.
- Click [HERE](#) for more information

FEMALE EDUCATION & EMPOWERMENT

Project Ideas

Providing Greater Access to Healthcare for Women

- The goal is to provide family planning services, along with education, counseling, or contraceptives to those who plan to have children, with the primary intention of reducing unwanted or mistimed pregnancies.
- Giving women the health care they want and need benefits the planet by reducing population growth which in turn decreases greenhouse gas emissions.

Rotary International donates family planning equipment to hospitals and other health facilities in Kogi, Nigeria.



FEMALE EDUCATION & EMPOWERMENT

Project Ideas

School Girls Sponsorship Project

- Another group that is working to improve female education is the **Rotary Club of Stockholm International**.
- For six years, the Rotary Club of Stockholm International helped fund the education of three girls in Nepal. "We did this through a program run by a small non-profit organization called **Nepal Education**... They find girls in need, mostly from the villages, and place them in Creative Academy, a private, quality English school in Kathmandu".
- "Following a successful crowd-funding campaign during the summer, we had the recent pleasure of donating 18,600 SEK (~\$2,100 USD) to Nepal Education to go toward the further education of 2 Nepalese girls under the care of that organization" - Rotary Club of Stockholm International
- Click [HERE](#) for more information on the club's work in this area

FEMALE EDUCATION & EMPOWERMENT

Project Ideas



Women Empowerment Project

- The **Rotary Club of Toliara**, in Madagascar, is working to stimulate job creation, food security and poverty reduction for women farmers in their community.
- Numerous activities are underway to help the economic empowerment of women in this community, including training women on innovative agricultural techniques, installing solar drip irrigation systems to alleviate the painstaking work of manual watering, and strengthening the organizational capacity of women's associations.
- Click [HERE](#) for more information on how the Rotary Club of Toliara is implementing this project.

REGENERATIVE AGRICULTURE



REGENERATIVE AGRICULTURE

What is it?

- Regenerative agriculture practices include avoiding the use of plows to keep from disturbing the soil, planting a diverse array of cover crops, and limiting or abstaining from pesticides and synthetic fertilizers. These methods boost the amount of organic matter, such as carbon in the soil, thus improving its health and that of the plants growing in it.



REGENERATIVE AGRICULTURE

Why is it important?

- According to Project Drawdown authors, regenerative agriculture increases organic matter in the soil between 4 and 7 percent over 10 years, representing an additional 25 to 60 tons of carbon stored in the ground per acre. This reduces the need for fertilizer, meaning regenerative agriculture can help cut carbon in the atmosphere while increasing the production of farmers.

REGENERATIVE AGRICULTURE

Potential for Projects

- Projects that organizations implement surrounding regenerative agriculture most often focus on educating and training communities, where agriculture degradation is prevalent, on regenerative farming practices.
- Rotary clubs that are looking to make progress in this area can make a significant impact by empowering farmers in their own communities or communities abroad to transition to more regenerative agricultural techniques. Such techniques, promote not only environmental benefits, but economic benefits as well.

REGENERATIVE AGRICULTURE

Project Ideas

Regenerative Agriculture Techniques Training Project

- Some Rotary clubs have implemented projects in this area.
- "Forty people from Meihua village, Taiwan, were trained in organic farming techniques through a global grant project of the **Rotary Clubs of Taipei Lungmen, Taiwan, and Patumwan, Thailand**. The effort, carried out in partnership with the Organic Farming Association of Taiwan, included creating a training facility and providing internships at organic farms. Organizers expected that growing without pesticides would lower farming costs and that selling organic vegetables at a premium price would improve villagers' earnings."

REGENERATIVE AGRICULTURE

Project Ideas

Regenerative Agriculture Techniques Training Project... continued

- Providing training to communities focused on improving farming techniques decreases both soil degradation and greenhouse gas emissions. Many organizations have found that focusing on regenerative agriculture is considerably effective, not only at improving human-welfare but also at fighting climate change.
- **Sustainable Harvest International**, a nonprofit working in Central America, partners with families to promote sustainable alternatives to harmful environmental farming practices, such as slash-and-burn techniques.
- Click [HERE](#) to see how the organization implements this project.

OCEAN PROTECTION



A vibrant underwater scene featuring a diverse coral reef. In the foreground, there are large, rounded, light-colored coral structures. The reef extends into the distance, with various other coral species and numerous colorful fish, including many bright orange ones, swimming around. Sunlight filters down from the surface, creating a bright, shimmering effect in the clear blue water.

OCEAN PROTECTION

What is it?

- Ocean Protection is the conservation and preservation of oceanic ecosystems from damage or extinction.
- Kelp forests, for example, are depleting at an unprecedented rate. Considered the forests of the sea, this carbon sink's endangerment requires quick and effective projects that protect it from depleting any more.

OCEAN PROTECTION

Why is it important?

- The ocean acts as both a heat and a carbon sink for our planet. It absorbs carbon dioxide through various means, such as phytoplankton. Phytoplankton take in CO₂ from the oceans surface and through its waste, delivers it to the bottom of the ocean, where it is sequestered in the seafloor.
- Additionally, all of the plant life in the ocean absorbs CO₂ from our atmosphere through photosynthesis, just as plant life on land does as well.
- Kelp or seaweed, for example, have been found to sequester nearly 200 million tons of CO₂ each year which is equal to the annual emissions of New York.

OCEAN PROTECTION

Project Ideas

- Protecting the ability of the ocean to absorb carbon dioxide is vital in reducing emissions from our atmosphere.
- Kelp, one of the ocean's strongest carbon sinks, has been becoming less abundant over the years for reasons, such as warming ocean waters and increase in its main predatory species, sea urchins.

OCEAN PROTECTION



Project Ideas

Kelp Forest Protection

- The **Ocean Protection Council** has partnered with several other government and non-government organizations to help solve this problem through their Kelp Restoration Project.
- This project, based off the coasts of Northern California, focuses on the removal of kelp's main predator, the purple sea urchin, to allow the dwindling population of kelp to grow. The decrease in sea otter population, the main predators of the purple sea urchins, has allowed this population to grow uncontrolled and decimate sea kelp forests along the coasts of California.
- "A team of 16 commercial sea urchin divers will be paid to remove purple sea urchins on 10 acres of reef at Noyo Bay and five acres of reef at Caspar Cove." (California Natural Resource Agency).
- Click [HERE](#) for more information on the project

OCEAN PROTECTION

Project Ideas

Rotary Reefs Project

- Coral Reefs, for example, are a vital marine ecosystem, but they are depleting at an alarming rate.
- The **Rotary Club of Newport Beach's** Rotary Reef Project in Panama has found great success in their project to create artificial coral reefs to help restore this ecosystem.
- With the inputting of artificial reefs, local fish populations have returned to areas where they had previously been depleted, creating a stronger ocean ecosystem.
- Click [HERE](#) for more information and videos on this project.



This image is a recreation of the 100 foot Rotary wheel reef created by Rotary Club of Newport Beach's President Steve Bender

PARTNERSHIPS



PARTNERSHIPS

What is it?

- Partnering with non-profit organizations, corporations, and other Rotary clubs is a great way to make an impact on reducing emissions.
- Coming together with certain groups to provide funding, collaboration, or offer support through sharing expertise in relevant areas, are all ways in which partnerships can be effective.



PARTNERSHIPS

Why is it important?

- There are over 35,000 rotary clubs and 1.2 million Rotarians worldwide, so collaboration between clubs can have a huge impact. As you have seen throughout this toolkit, Rotary's strength is in its ability to unite clubs, organizations, and business in order to implement a successful project.
- In many cases the best way a Rotary club can have an impact in certain communities internationally is to partner with organizations in those areas that have better means of advancing a project that may take place.

PARTNERSHIPS

Project Ideas

Rotary Climate Action Team Network

- Join over 400 clubs worldwide and take the RCAT challenge.
- To achieve effective and successful projects to reduce emissions, it is beneficial to take the RCAT challenge, and start your climate journey in the right direction.
- The Rotary Climate Action Team (RCAT) Network offers Rotary clubs resources to:
 - 1) Foster Action Teams
 - 2) Educate Rotarians about the climate crisis
 - 3) Share projects and contacts
 - 4) Have a link to multiple resources across Rotary and with Rotary partners.
- Click [HERE](#) for more information on RCATs website.



PARTNERSHIPS

Project Ideas

- A great example of Rotary clubs partnering with each other took place in 2015 when the **Rotary Club of Mostar, Bosnia, 9 Rotary Clubs in Colorado, one in Grand Cayman**, and the **Rotary International Foundation** joined together to fund a grant of \$46,000 to promote basic education for girls in Bosnia.
- The grant funded parent/teacher workshops and an education campaign reaching 1000 people in 20 villages and communities. It provided a three year mentoring program for 80 families with girls at risk of dropping out of school, using university student volunteers. In addition, fifteen girls received a year's literacy training.
- Click [HERE](#) for a video on the project.

PARTNERSHIPS

Ocean Protection Resource

Global Climate Pledge Climate & Sustainability Organizations Map

- On the Global Climate Pledge website, there is an interactive map with over 680 organizations from every country in the world.
- Click on your country and explore organizations taking action on climate change.
- In order to reach our goal of combating climate change, partnerships between Rotary and NGOs, Community, Government, Organizational, and other sectors are extremely valuable.
- Click [HERE](#) to go to the Sustainability Organizations Map



SUPPLEMENTAL PROJECT IDEAS



SUPPLEMENTAL PROJECT IDEAS



Refrigerant Solutions

Collecting Obsolete CFCs

- CFCs are very harmful refrigerants that cause ozone depletion.
- Although they were banned in 1987 as a result of the Montreal Protocol, CFCs are still present in remaining stockpiles of cylinders and canisters, as well as old equipment, such as refrigerators.
- ESRAG has started an initiative to facilitate the collection and destruction of CFC sources.
- For more information on this initiative, click [HERE](#).

GLOBAL CLIMATE *Pledge*

Rotary



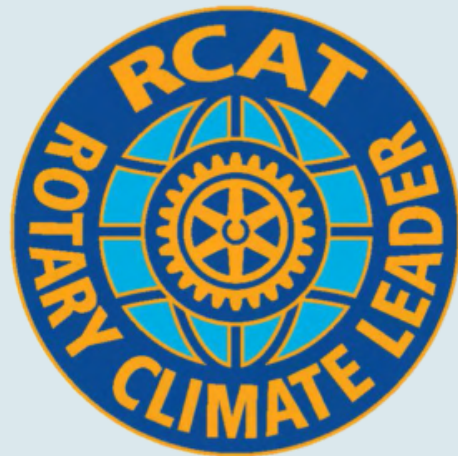
Rotary Club of
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Climate Action
Team Network



TEN WAYS TO REDUCE EMISSIONS TOOLBOX

