

## Reduce Food Waste



Growing and transporting food requires land and resources, along with use of fossil fuels that emit GHGs. About a third of food produced is never consumed. Wasting less food would save important resources, but also reduce the amount of GHGs going into the atmosphere.

## Plant-Rich Diets



Raising animals for meat consumption requires large amounts of land, contributing to deforestation, but also emits large amounts of GHGs. Limiting the amount of meat we eat (especially beef) can reduce GHG emissions but can also be healthier.

## System of Rice Intensification (SRI)



Many cultures rely on rice as an important food source, but it uses large amounts of water and fossil fuel-based fertilizers, while producing high levels of methane GHGs. SRI decreases the amount of water needed to grow rice and limits GHG emissions.

## Silvopasture



Silvopasture integrates trees and pasture with grazing livestock to mimic a more natural ecosystem than typical farming practices. Trees provide shade and shelter for animals, nutrients to enrich the soil, additional resources to farmers, and sequester more carbon.

## Forest Protection (Proforestation)



Forests are important sinks of carbon as plants take in carbon through photosynthesis and sequester (hold) it in tissues. Larger, older trees sequester more carbon than replanted young trees. Avoiding deforestation also reduces GHGs emitted through it.

## Protect and Restore Tropical Forests



Tropical forests hold more than half of the world's biodiversity and are important regulators of the Earth's climate. Intact tropical forests sequester large amounts of carbon, but extensive deforestation has led to high GHG emissions.

## Protect and Restore Coastal Wetlands



Wetlands are important ecosystems for many organisms, including people, due to providing food and protection from floods, droughts, and pollution. They are very efficient at sequestering carbon but are being lost at alarming rates, losing this important carbon sink.

## Protect and Restore Peatlands



Peatlands are a special type of wetland where slowly decomposing organic matter forms a spongy layer of peat that sequesters large amounts of carbon for long periods. Destruction or drying of these ecosystems can result in high levels of GHG emissions.

## Protect and Restore Grasslands



Much of the biomass of natural grasslands are in the extensive root systems that sequester large amounts of carbon in the soil. Many grassland ecosystems are being lost to agriculture and development, resulting in the loss of this important carbon sink.

## Composting



Organic waste can produce GHGs when it is incinerated or covered in landfills. Composting allows the organic waste to decompose in the presence of more oxygen, which limits the amount of GHGs emitted, and produces a healthier soil amendment than chemical fertilizers.

## Grow More Perennial Crops



Most crops are annual plants that must be replanted each year, but perennial plants will continue to grow for many years. These crops can yield comparable amounts of food while sequestering more carbon and providing more food security to the community.

## Seaweed Farming



Seaweed grows fast in aquatic ecosystems, so it does not require land clearing or fertilizers. It can sequester carbon and reduce ocean pollution and acidification, protecting marine life, while providing a sustainable source of food, biofuel, and bioplastics.

## Responsible Bamboo Production



Bamboo is a woody grass that grows very fast, needs little to regenerate, and sequesters lots of carbon. It can be used for food, clothes, paper products, and much more. It can be invasive, so should be managed responsibly, preferably on degraded land.

## Biochar Production



Biochar is produced when biomass is baked slowly without oxygen, while also producing energy during the process. It holds large amounts of carbon and does not decompose easily. It can be buried to improve soil health and sequester carbon for long periods of time.

## Regenerative Agriculture



Crop production can deplete soil nutrients and health. Regenerative agriculture seeks to restore soil health, which increases productivity, but also sequesters more carbon and reduces GHG emissions. It can also strengthen ecological and economic resilience.

## Bioplastics



Most plastics are made from fossil fuels. Recent technologies allow plant biomass to be used as a carbon source to produce bioplastics, while usually emitting less GHGs during production. Many bioplastics also may be biodegradable or even compostable.

## Green Roofs/Nature in Cities



Urban areas tend to contain minimal plants. Adding more plants to urban infrastructure can insulate and cool buildings so they don't use as much energy and reduce overall city temperatures, while reducing air pollution and sequestering carbon.

## Restore Degraded Land (Abandoned Farmland)



A quarter of available land is degraded to the point that it can no longer adequately support plant growth, mostly due to agricultural practices. Natural restoration of soil nutrients can support farmers, reduce food insecurity, and sequester carbon.

## Nutrient Management



Plant yields can increase significantly with application of nitrogen-based fertilizers, but unused nitrogen can ruin soils, pollute water, and may be converted into nitrogen oxide (a GHG). Appropriate amounts of fertilizer at the right time can minimize the negative effects and reduce GHG emission.

## Biomass Power



Recently harvested plants can be used for producing heat and electricity in place of fossil fuels. Annual plant crops, like corn, do not offset climate change effects better than fossil fuels, but perennial crops can, since they need less resources to grow and have naturally high productivity.

## Recycling



Recycling materials like metal, glass, and plastic can reduce the need to extract virgin materials and uses less energy to process than virgin materials, thus emitting less GHGs. Recycling also reduces the space needed in landfills to hold recyclable materials and can reduce pollution.

## Wind Turbines



Whether onshore, offshore, or micro-scale, harnessing wind power to turn turbines that generate electricity with zero emissions. They can replace fossil fuels and greatly reduce the amount of GHGs emitted. They also take up relatively small amounts of space.

## Solar Energy



The Sun's energy can be captured with panels that convert the energy to electricity (Photovoltaics), or it can be concentrated with mirrors to heat liquid into steam to turn a turbine to produce electricity (Concentrated Solar Power), replacing fossil fuels & reducing GHGs.

## Improved Cattle Feed (Asparagopsis)



Cattle (and other ruminants) release large amounts of methane, a powerful GHG, when they digest the typical feed provided. Providing more digestible feed, supplements, and especially *Asparagopsis* seaweed can greatly reduce methane emissions.

## Drought-resistant crops



Climate change is expected to increase the frequency of droughts and reduce water availability to many crops. Greater reliance on natural or genetically engineered drought-resistant crops can help support food security in the face of climate change.

## Rain Gardens



Climate change is expected to increase the amount of rainfall and flooding. Rain gardens containing flood-resistant plants can reduce the stress on stormwater infrastructure, while reducing urban temperatures, erosion, and pollution, along with increasing biodiversity.

## Fire Ecology



Indigenous people have been using well-timed, small-scale fires to limit the growth of forest underbrush that could build-up and feed larger fires when ignited. This practice could reduce the effects of wildfires as they are expected to increase due to climate change.

## Flood Protection of Infrastructure



As climate change is causing sea levels to rise and flooding to increase, especially along the coastlines, many communities are investing in flood barriers, like seawalls and levees, or raising infrastructure on stilts to avoid flood damage.

## Rainwater Harvesting



Precipitation is expected to become more unpredictable due to climate change, with periods of excessive rainfall (causing flooding) and very limited rainfall (causing droughts). Rainwater storage can hold excess rainfall to be used when rainfall is limited.

## Relocation



We will likely see some effects of climate change everywhere in the world, but some areas may become unlivable due to extreme effects, like sea level rise. Some people may have to relocate from their homes to find safety from the effects, making them climate refugees.