

Historically, agriculture has been the central blame of deforestation and the ruin of precious top soils. This does not have to be the case. As people evolve and new technology is developed, so too must agriculture. The preservation of our natural resources is essential to the sustainability of life to come. The primary concern is conserving forests and prairies that are being turned into agricultural developments. It's widely known that agricultural runoff is a major biohazard and can cause dead zones in bodies of water, one of the most popular being where the Gulf of Mexico and Mississippi River meet. Improper disposal of compostable waste can also create a higher rise in CO₂ and methane emissions. All of these problems can be addressed through the use of vertical growing towers with collection basins and other innovations.

Vertical growing towers are gaining popularity in the agriculture industry, but they can be expanded on. The vertical towers I am proposing include collection basins for both organic and water waste at the bottom. Any water runoff from these towers would be collected at the base and would then be recycled through the system so that the plants are not losing any nutrients. Collecting the water waste will prevent the runoff that is currently occurring and the creation of dead zones in our world's water sources. A filter would catch any plant waste such as dead leaves and roots which would then be composted to be used in future plantings to reduce the amount of methane that is produced by improper composting habits. These towers will also optimize the surface area of the plants touched by the sun. Running up and down the towers would be planter boxes where crops would be grown. These boxes would be capable of tilting as needed to follow the sun and consume as much sunlight as possible. Ensuring that the plants receive plentiful sunlight through the use of these tilting containers will ensure that photosynthesis is occurring at its most productive rate, possibly even allowing for two harvests in one season. The area between the bases of the towers could be used to grow additional crops or plants that have deep roots to prevent runoff.

The layout of these vertical towers would save much needed land. The land that was once used for planting can be returned to its natural state (prairies, forests, etc...) or could continue to be used for planting to combat world hunger and the growing world population. This would prevent the further deforestation and destruction of current protected lands which would be extremely beneficial for conservation of our natural resources. The system would also prevent harmful runoff into bodies of water. An extreme difference would be noticeable concerning the presence of nitrogen and other pollutants in bodies of water. Innovations like this are proof that agriculture and conservation do not have to combat one another; they can work hand in hand to create a sustainable environment that is also able to sustain growing populations.