

# Why Harvesting?

Team 2213962 International Carbon Management Collaboration

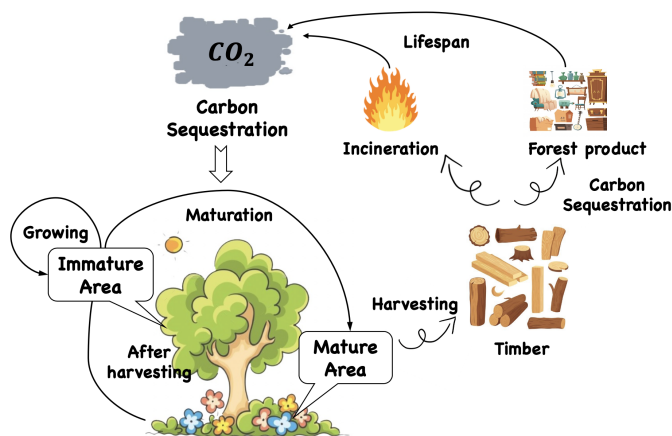
Forest management plans have been attracting people's attention. Why harvesting? What are the benefits of harvesting? This article will take you to uncover the mysteries of forest management.

## 1 The Dilemma We Face

Forests have an irreplaceable position in the biosphere and are a valuable asset of society that must be cherished and cared for by all humankind. However, due to the lack of awareness of environmental conservation and the excessive pursuit of economic benefits, the vast forest resources have rapidly declined in recent centuries. The protection of forests has not been slow in coming, and forest management plans have adapted to the needs of the times. Economic and ecological dilemmas come into focus.

## 2 Misunderstandings

Since the introduction of the concept of forest management plans, the debate on this issue has not ceased. Influenced by environmental organizations, a voice has been raised in society in recent years: When formulating forest management plans for all different regions, we should leave the forest untouched so that it is not affected by human factors. They believe that deforestation destroys the balance of the ecosystem and causes the forest to lose its original benefits and functions.

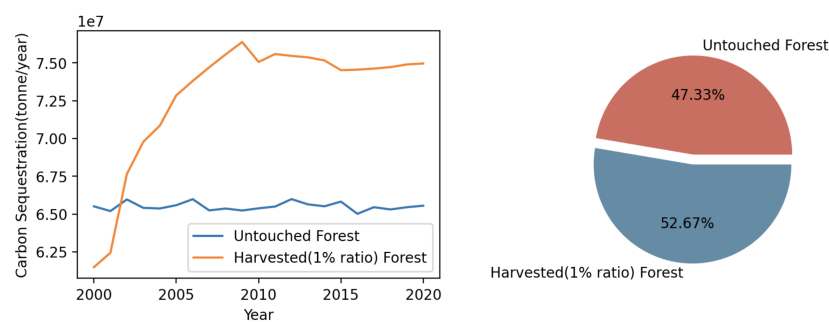


This view can actually be challenged. Attitudes toward deforestation should not be limited to the potential damage to ecosystems, but should also consider the benefits. Properly harvesting can yield a tremendous amount of wood resources, and this processing can produce a large number of forest by-products such as paper and furniture that is needed in people's daily lives. The production and trade of forest products greatly enhance the opportunity of employment and promote local economic development. Most importantly, the carbon can be sequestered in the product and will not be released when the wood is burned. A balanced harvesting plan is a win-win situation.

## 3 Why Harvesting?

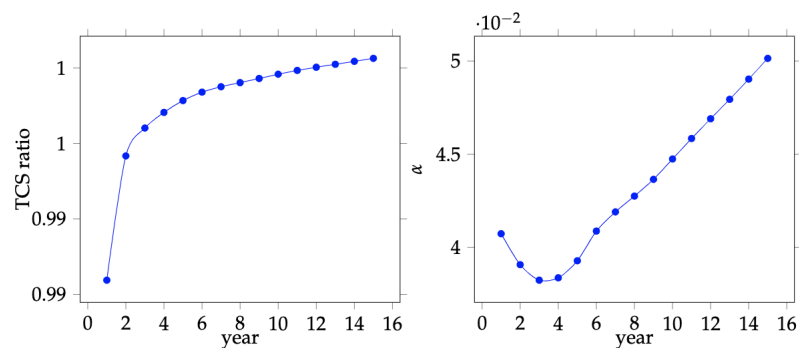
In response to this problem, our collaborating organization developed a dynamic forest value estimation model. This model will dynamically monitor the value composition of forests according to different regions, different forest types and other parameters, which is a powerful tool for the forest managers to obtain the current state of the forest and the future development direction in time.

Each forest system must plan future forest management plans in detail in conjunction with the development goals of the various regions, but it is clear from the model that each forest management plan must incorporate deforestation into the respective plan. We monitored local forest data over 20 years, including forest tree species, forest area, carbon sequestration rate, forest product structure, etc. Using our carbon sequestration model, we arrived at the following results. The following figure shows a comparison of carbon sequestration in local forests in untouched condition and maintaining a 1% per year deforestation rate.



The above picture shows us that although untouched forests sequester more carbon than deforested forests in the first few years, deforested forests grow faster over time, and some of the carbon is stably sequestered. In the case of forestry products, the whole system will absorb more carbon than the original one, which is why we recommend that local forest managers to harvest properly.

To assist local forest managers in their decision-making, the picture below shows the maximum harvesting rate for each year that maximizes the value of the forest. According to this chart, adjusting the area harvested will help provide greater economic benefit while maintaining ecological value. We recommend that the maximum deforestation rate can be set to around 5%



The harmonious and balanced development of man and ecology is the theme of future environmental protection. Let us work together in environmental protection to share a better and brighter future.