

The concept of sustainable development in forest management



Since our world is facing a clash between economic growth and environmental needs, human society now is in the face of an uphill battle to reduce environmental pollution and ecological destruction. And because of that, the concept of sustainable development has been widely accepted by all sectors of society. Forest management, which takes great responsibilities for ecological reconstruction, should be the strategic section in the earth's environmental restoration.

Sustainable development focuses on “ sustainable”, which means “ ecological sustainability”. It's intended to illustrate the balance between natural resources and the utilization processes of it, which tells us we cannot go beyond the environment and the ability of system renewal. It is interesting to note, we can find that many philosophers had expressed the idea of sustainable development back in ancient China, such as Mencius and Confucius. ¹ For today's society, the concept of sustainable development first came up in the late 1980s, and it has been considered as a very important notion. It is precisely because this, at the 38th session of the United Nations general assembly in November 1983, the proposal for the establishment of the world commission on environment and development was made. And after the establishment of the organization, a Report (also known as the brundtland Report) was submitted to the United Nations in 1987, titled “ Report of the World Commission on Environment and Development: Our Common Future”. The report was full of ideas about sustainability, it argued that we need to focus on meeting the needs of today's people but without compromising the ability of future generations to meet their needs. ²

Therefore, this report can be regarded as the source of sustainable development thoughts in modern era.

Sustainable development involves nature, environment, technology, economy, society, politics and many other aspects. The UNEP (United Nations Environment Programme) put forward that the principle of sustainable development is life-cycle thinking. ³

There are many countries in Europe and America have substantial forest resources and a strong forest industry, however most the forest areas in some countries such as the United States and Sweden are privately and company-owned. That is, these owners have a lot of freedom in their forest management decisions. They can decide what to do with the forest and how to manage it. Take Sweden for example, people are very keen on using the forest for recreation. In fact, this idea has been popular in many northern European countries. Therefore, many forest managers not only use forests for resource development but also use them as tourist sites. Not just like that, population expansion and increasing urbanization have also had a major negative impact on forests. The growing population increases the demand for forest resources on many sides, and urbanization continues to take up the area of the forest.

What's worse is that, the increasing demand of forest resources is a great commercial opportunity for most of the forest owners, so people's dependence on forests is likely to remain strong. ⁴ There are other reasons that sustainable forest management cannot be effectively implemented. The most important reason is because this kind of management mostly is not <https://assignbuster.com/the-concept-of-sustainable-development-in-forest-management/>

profitable, which means that it will only increase the cost of the manager, but will not let the manager get more benefits. Since most people are still doing forest related things to make money, especially for some small size forest-keepers. Sometimes it is much more difficult to change people's mind than a physical problem. Another reason is that land planning and forest planning usually are in charge of different departments, and the communication between different departments sometimes is not enough. Moreover, the relevant legislation is not good enough, some are even contradictory or very protectionist. ⁵

For forest management, this “ life-cycle thinking” principle restricts the exploitation of forest resources to some extent. In simple terms, we need to keep forests healthy while using them, instead of just looking at the present, and not thinking about the future of the forests, So that our descendants will not be short of available forest resources. ⁶

Sometimes, it is easy to recognize a problem, but how to analyze and solve it is often the real challenge. Sustainable forest management involves ecology, environment, economy, society and the interests of stakeholders and so on, so it is very hard to take into account everything. ⁷ Several authors have come up with some strategies to help solve this problem.

In order to let sustainable forest management strategies can fulfil every aspects that mentioned above, and without causing damage to other ecosystems, Wolfslehner and Vacick came up with Pressure-State-Response (PSR) framework and the Analytic Network Process (ANP). PSR arranged

indicators for sustainable forest management while ANP is used to evaluate the performance of different management strategies with regard to the PSR framework. Most forest-keepers try to run forests on a sustainable basis, but because of the lack of database and a right approach to analysis, they only can give a very broad concept of management. Or they often prefer to set management guidelines based on previous experience and judgment.

However, due to the changes of various conditions, previous experience and judgment sometimes cannot be effective. In either case, it is possible to fail to achieve the management goal expected by the manager. So Wolfslehner and Vacick's multidimensional approach can help forest managers to better understand the impact of sustainable forest management technology, thus they can make better decisions. ⁸

Besides this, forest-keepers also ought to develop a better marketing strategy if they have a lot of forest products to sell. For instance, they can explore new market. This is very important because they need to find ways to make up for the losses as much as possible since they will lose some interest in following sustainable development management. At the same time, it is also important to increase the awareness of sustainable development of society. This can be done through school education and media. And it can help both on production side and consumption side. For producers, they are more inclined to sustainable production and management. While for consumers, they are more willing to buy forest products produced by sustainable production. In addition to following the principle of sustainable production, the production process can also be

improved in terms of hardware such as machinery, producers can use more efficient machines for example. ⁹

In addition to this, since many of the main functions of forests, such as timber production and water resources, are achieved at the regional level. So the idea of managing forests at the regional level has been proposed.

Yusuke Yamada built a model to reveal the relationship between the zoning and individual activities, and simulated the influence of the zoning on future forest resources and production. In a nutshell, this method is adopted by: 1) Model constructing, 2) Revealing the relationships between zoning and forestry activities, 3) Creating a conditional probability table, 4) Deciding in which stands forestry activities occurred, 5) Simulated forestry activities, 6) Model validation, 7) Evaluation accuracy. Using this method, researchers succeeded in experimenting on Ugo, Akita Prefecture in the Tohoku district of Japan. They wanted to model the effect of a policy on Japanese cedar growth in the region to predict future changes in timber production. With the use of the CPT, forestry harvests were simulated for

100 years. And the simulation results show that the policy has the effect of increasing early wood production, but the effect cannot be sustained for a long time. ¹⁰

Forest sustainable management has become the core of forestry development and the focus of global attention. SFM is of great significance to forest health and sustainable utilization of resources. Without the sustainable management of forests, there is no sustainable development of forests.

Many countries in the world, such as China, have tried sustainable development management for many years, but the forest resources still cannot meet the demand of rapid social and economic development. But at least we are seeing more and more places using the concept of sustainable development; more and more forest managers putting forest sustainable development at the first place; more and more researchers are investing in it, and solutions to the problem are beginning to be found little by little. In the case of Canada, Haliburton Forest is a really good example. As the first sustainable forest in Canada, it has been on the road for almost 30 years. Their teams are getting bigger and their results are getting better.

In these challenging times, we must make choices about the future, these choices is testing our present. Therefore, I am writing this article to let you know the importance of this issue, and I hope you will pay more attention to this issue for our future generations.

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