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## Scientific Forest Management in Nepal Opportunities and Challenges

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### **Abstract**

*The government of Nepal has initiated scientific forest management practices by integrating the silvicultural system. SFM was initiated to enhance the timber production, employment generation as well as regeneration promotion and economic benefits through the management of the productive forest of Nepal. This study was based on the review of journals and articles concerned with SFM practices in Nepal. The study showed that SFM practice has opened the opportunity to improve the forest health, regeneration promotion, timber production, economic gain and social benefits. The major challenges for the management were unaware about the implementation procedure and technique, lack of financial resource, lack of coordination between stakeholders and public participation in every step of SFM. There is a need for user's capacity building through training, workshops and awareness programme along with the financial support from the government and common consensus among the stakeholders for the successful implementation of SFM in Nepal.*

**Keywords:** Forestry, stewardship, ecosystems, multi-dimensional, climate change, government

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### **Introduction**

Forestry is an integral part of the rural livelihood of Nepal; about 76% of the nation's population is characterized as being forest dependent (Amatya, 2013), and some 64% of the population is still using fuel wood as the major source of domestic energy (CBS, 2014). The forestry sector is a key element in providing enhanced incomes for both the GoN and the rural communities. The scientific forest management concept was initially focused on 'sustainable timber production and meeting economic objectives'. However, the scope has now broadened to include aspects of social, cultural, and environmental values (FAO, 2016). The terms 'scientific forest management' and 'sustainable forest management' have been used and understood

interchangeably in the global forestry scenario in recent decades linking management activities to principles of sustainable development and focusing on the balance between three major pillars: ecological, economic, and socio-cultural.

The United Nations Organization has described SFM as “a dynamic and evolving concept that aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations” (FAO, 2016). This indicates that the major purpose of SFM is to maintain and ensure forest productivity and services in perpetuity. FAO has further unpacked the concept of SFM in the following: “...the process of planning and implementing practices for the stewardship and use of forests and other wooded land to meet specific environmental, economic, social and cultural objectives. It deals with the overall administrative, economic, legal, social, technical and scientific aspects related to natural and planted forests. It may involve varying degrees of deliberate human intervention, ranging from actions aimed at safeguarding and maintaining forest ecosystems and their functions, to those favoring specific socially or economically valuable species or groups of species for the improved production of forest goods and services...” (FAO, 2016)

The global understanding on SFM considers that it is a multi-dimensional concept that integrates a wide array of commercial and non-commercial values, environmental considerations, community needs, even global environmental impact including climate change. In the Nepalese context, SFM is perceived as a potential option for improving depleting forest quality and productivity, and for harnessing the true economic potential of the forest resources (MSFP, 2015).

The government of Nepal has been making efforts to manage the forest of lowlands of Nepal scientifically for economic growth of the nation as well as for benefit of local people. For example, the government initiated managing productive forest of Tarai by preparing Operational Forest Management Plan (OFMPs) in the 1990s; similarly, SFM guidelines were developed in 2014 and endorsed for the promotion of silviculture based sustainable forest management in Forest Policy (2015 and 2019) and also in 15th Five-year National Periodic Plan (2019/20-2023/24) for the proper implementation of SFM, especially focusing on *Sal (Shorea robusta)* and Mixed hardwood forests under the collaborative and community forest management systems of the Tarai and Mid-hills regions of Nepal. The government has clearly defined SFM as an application of appropriate silviculture systems and forest management principles through the design of systematic compartments of fixed rotation age. This follows primarily the Irregular Shelter Wood Silvicultural System with very high-intensity logging, leaving behind 15-30 mature mother trees per hectare (DoF 2014). The vision of the government outlined as "Forestry for Prosperity" laid the policy foundation for SFM as one of the four key pillars of prosperity (Poudel 2018; Poudyal et al. 2019).

## **A Brief History of Scientific Forest Management in Nepal**

The history of scientific forest management dates back to about eight years. SFM was found to be a dominant trend of forest management in government managed forests (block forests), community and collaborative forests of the districts in Tarai and Chure areas. Government of Nepal has been making efforts to manage the forest of Tarai, siwaliks and mid hills of Nepal scientifically for the economic growth of the nation as well as for the benefit of local people at the same time improving forest condition by regeneration promotion and intensive forest management. The Forest Policy 2015 and The Forestry Sector Strategy (FSS) 2016 have emphasized the promotion of SFM for the maximization of both economic and environmental benefits from the forestry sector in Nepal. The Department of Forests has also prepared the Scientific Forest Management Guideline 2014. However, the guideline has generalized SFM into a blanket approach irrespective of the ecological zone, forest conditions, and focused management objectives. The current SFM practices with extensive silvicultural operations are focused on the high value natural *Sal* (*Shorea robusta*) forests. Detailed plans and guidelines for other types of forests are yet to be developed, but must be in the near future in order to encourage SFM in other parts of the country. The current SFM practices require updated technical expertise for the effective implementation in field level. There is an ongoing lively debate amongst stakeholders as to whether to use the term ‘scientific’ or ‘sustainable’. Further delay in building this common understanding among stakeholders will further push back an opportunity to grasp optimum benefits from SFM. It is here suggested that sustainable forest management might apply to a broader, more generic management modality which is more focused on environmental and biodiversity conservation, while scientific forest management applies to the more rigorous planning of a forest area for maximum economic potential. Both terms acknowledge the importance of the participation of the local forestry user groups in forest management, and balancing the three pillars of sound forestry development – social, economic, and ecological aspects. Expansion of SFM thus relies heavily on the capacity of the Forest Offices. The Ministry of Forests and Environment (MoFE) thus needs to take account of both staff numbers and staff capacity to provide technical assistance to manage block forests, collaborative forests and community forests where SFM practices are implemented.

## **Major Learning’s and Recommendations**

SFM has been demonstrated that it has significant potential to contribute to the local economy, and is a good option to improve both the quality and productivity of over-mature forests. Field experiences have demonstrated that SFM is an effective approach for improved management and productivity which links economic, environmental, and socio-cultural aspects of development. SFM intervention experience further emphasizes the need for mutual collaboration between government bodies, local communities, and other relevant stakeholders for the effective implementation. Clear provisions are needed in policy and guidelines to expand SFM to different ecological zones, forest types, and with different management modalities. A common

understanding and collaborative setting among stakeholders is important on the effective implementation and increased ownership to ensure the sustainability of SFM.

### **Opportunities and Challenges of SFM Implementation**

From its initial implementation, SFM faced a number of challenges but at the same time, created numerous opportunities to improve the forest condition, and enhance economic benefits as well as to develop the forest management capacity of forestry stakeholders. Nevertheless, the opportunities and challenges foreseen by the stakeholders were different. SFM would increase the timber production, regeneration promotion, reduces timber imports from foreign countries, financial and social benefits. It needs to develop the institutional capacity of government as well as forest users in forest harvesting and management. Studies show that all stakeholders agreed that SFM would create more jobs and income for the local people and would contribute more revenue to the national economy. At the same time, it would regenerate, promote and improve the conditions.

### **Opportunities of SFM**

- Increase in timber supply and replace timber imports from foreign countries.
- Development of institutional capacity of forest management agencies and forest user groups in silviculture-based forest management.
- Creation of more jobs and income for the local people and higher contribution to local as well as national economy.
- Improvement in forest health conditions.
- Increase in motivation/participation of users in forest management activity due to increased investment potentiality in community development and supporting poor households.
- Change in conservation-focused perspectives on forest management.
- Technological advancement in forest harvesting and value addition in timber products  
Private sector improvement in forest governance.
- Improvement of forest health and promotion of regeneration.
- Large tract of Tarai and mountain forest are waiting for immediate management action.
- Silviculture not only looks over the forest rather it also addresses community need, market/processing need and future crop need.
- Skilled human resource development at local level

### **Issues and Challenges of SFM**

- Lack of skilled manpower to facilitate SFM at local level due to multiple roles and lack of forest management skills.

- Lengthy bureaucratic procedures for harvesting and sales (tender call and approval) and lack of quick and efficient monitoring system.
- Poor governance in wood production flow and lack of transparency in implementation procedures.
- Conservation-oriented mindset of stakeholders and the public.
- Different understanding and views of stakeholders/political leaders and relationship management/coordination.
- High fiduciary risks in timber harvesting and sales.
- Lack of specific harvesting and thinning guidelines post-harvesting stand management.
- There is absence of appropriate forest products distribution system in Tarai. Existing system are biased. Poor focused distribution system should be established.

### **Possible Strategies for the Effective Implementation of SFM**

The realization by stakeholders to capitalize on its potential contribution to the national and local economy itself provides a vital opportunity to design and implement the best possible forest management option for the forest production of Nepal. At the same time, the recognition of diversity in forest management modality and ownership in such forests is equally important. The capacity and experience of the key actors and coordination/collaboration among stakeholders will determine the adoption of forest management and harvesting knowledge in production forests. The recognition of the forest management objectives set by the forest user group and facilitating them to simplify the complex inventory system according to their needs will help to optimize opportunities. The capacity development of the stakeholders, creating a feeling of ownership over SFM through the analysis of social, economic and environmental factors and the design of participatory and transparent forest assessment tools may support the enhancement of effectiveness and the adoption of SFM. The capacity development of the stakeholders, including forest officials, and the design of participatory and transparent forest assessment tools may support the reduction of skepticism, thereby enhancing effectiveness in SFM adoption. The periodic assessment of the management capacity and institutional governance of forest user groups is essential.

### **Conclusion**

SFM has created a new wave in the forest sector. It has equally raised some pertinent issues and challenges. The heavy dependency of forest groups on the forest technicians has shrunk the space of the local groups in making self-decisions. It is expensive for the user groups owing to the required expense and technical expertise. The issue of financial transparency and management has emerged as a challenging issue in some forest user groups. Hence, intensifying the discourses around the various aspects of SFM in the greater interest of community benefits has become urgent. There is no alternative of scientific forest management if current demand of timber is to be fulfilled

while improving the forest condition. Above all, there is the necessity of the appropriate policy for the balanced use of the forest by the stakeholders.

## References

- Amatya, S.M., 2013. Financing for Sustainable Forests Management in Nepal. INDUFOR, Auckland, New Zealand. Available on: [http://www.un.org/esa/forests/pdf/facilitative-process/Nepal\\_study.pdf](http://www.un.org/esa/forests/pdf/facilitative-process/Nepal_study.pdf), Accessed on 12th July 2016.
- CBS, 2014; CBS, 2014. Environment statistics of Nepal. Central Bureau of Statistics, Kathmandu, Nepal.
- DoF. 2014. Scientific Forest Management Guidelines. Kathmandu, Nepal: Government of Nepal, Ministry of Forests and Soil Conservation.
- Food and Agriculture Organization of the United Nations (FAO), 2016. Sustainable Forest Management., Available on: <http://www.fao.org/forestry/sfm/85084/en/>, accessed on 11 July, 2016.
- Khatri, D.B., Gotame B. and Bishwokarma, D. 2015. Harmonizing Science and Democracy: Review of Recent Initiative of Nepal's Forest Department on Forest Management. Forest Action Nepal, Multi Stakeholder Forestry Programme, Satdobato, Lalitpur, Nepal
- Poudel, K. C. 2018. Silviculture for Forest Management in Nepal. Banko Janakari, no. 4:15–20. <https://doi.org/10.3126/banko.v27i3.20537>.
- Poudyal, B. H., T. Maraseni, and G. Cockfield. 2019. Scientific Forest Management Practice in Nepal: Critical Reflections from Stakeholders' Perspectives. Forests 11 (1). <https://doi.org/10.3390/f11010027>.
- Shahi, P. 2016. Scientific Forestry, The Kathmandu Post, Kathmandu, Nepal. Available on: <http://kathmandupost.ekantipur.com/printedition/news/2016-04-03/scientificforestry.html>, Accessed on 14 July, 2016.
- Subedi, B.P., Ghimire, P.L., Koontz, A., Khanal, S.C., Katwal, P., Sthapit, K.R., and Mishra, S.K., 2014. Private Sector Involvement and Investment in Nepal's Forestry: Status, Prospects and Ways Forward. Study Report, Multi-Stakeholder Forestry Programme-Service Support Unit, Babarmahal, Kathmandu.

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