



# Trends in Governance Research and The Gender Perspective for Reducing Deforestation: A Bibliometric Analysis

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## Introduction

Around 1.6 billion people in the world depend directly on forests for food, shelter, medicines and income. Many efforts have been made to promote sustainable forest management by countries in the world, but forests are still under threats. The biggest threat to forests is the loss of forest areas through land conversion or other land uses or commonly known as "deforestation". governance plays an important role in reducing deforestation rates. some research results conclude that governance with a gender perspective is positively correlated with improved forest sector performance, resource sustainability and reduced deforestation. In order to promote studies on Deforestation in relation to Gender and Governance (DGG), it is important to have comprehensive review that has the ability to provide an overview of the current research and identify future research. The study aims to provide a better and more comprehensive understanding of the trends in DGG research, by perform keyword mapping, development of research themes, most productive countries and differences in research themes among countries. This is carried out to identify future research opportunities and to promote DGG researches. With numerous topics in DGG research, it is expected to encourage state leaders in efforts to reduce deforestation through policies that support forest sustainability.

## Methods

This article is a bibliometric analysis using VOSviewer application to identify and explore DGG research with data sources from Scopus. The research was conducted by searching online documents on July 13, 2021, using the keywords "Deforestation" AND "Gender OR Women" AND "Governance" using the criteria "title, keywords and abstract for the period 1995-2021. The downloaded article was then subjected to bibliometric analysis for highlight the main results of the literature in a structured method and able to reveal gaps in knowledge. Articles downloaded from Scopus use the CSV file format by entering the downloaded file in the VOSviewer application. VOSviewer is a software for visualizing and analyzing research trends in the form of bibliometric maps.

## Results and Discussion

Figure 1. Number of DGG publications 1995 to 2020

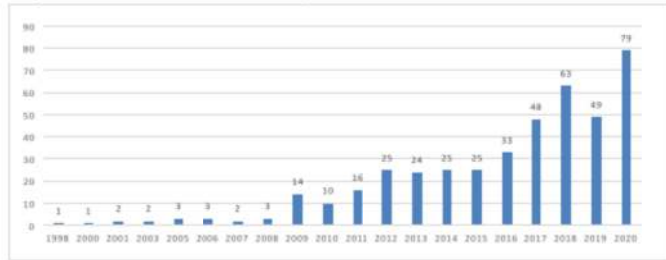


Figure 2. The Keywords Comparison in Different Countries

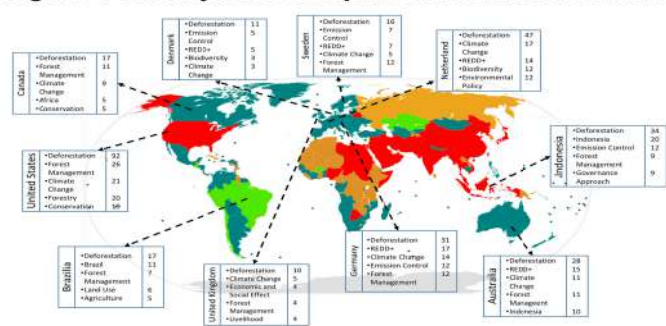


Figure 3. Keywords Co-Occurrence

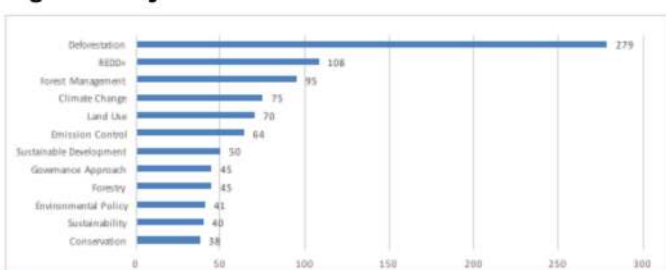
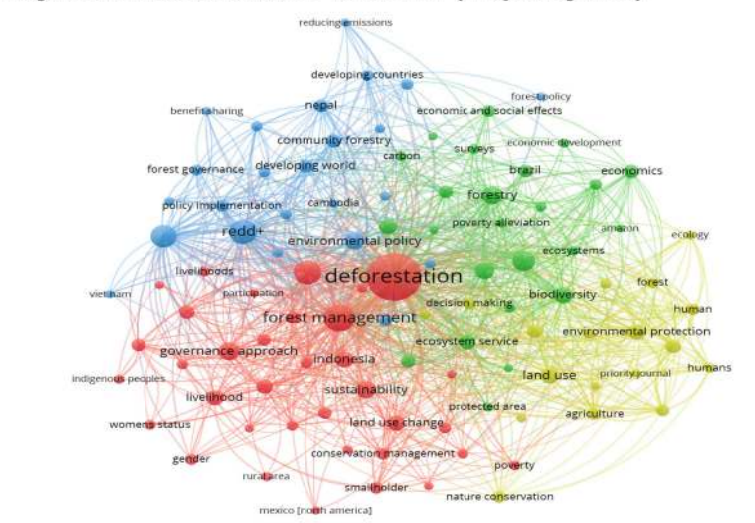


Figure 4. Keyword Evolution in Three Periods

KEYWORD ALL 1995-2021	SDGs (2015-2021)	MDGs (2000-2014)	BPTA (1995-1999)
1 Deforestation	279	197	82
2 Forest Management	95	69	32
3 REDD+	78	63	19
4 Climate Change	75	56	15
5 Emission Control	64	49	15
6 Sustainable Development	50	35	15
7 Forestry	45	33	15
8 Governance Approach	45	32	14
9 Environmental Policy	41	32	13
10 Sustainability	40	32	13

Figure 5. The network of the 160 most frequently occurring keywords in DGG research 1995-2021 (frequency ≥ 10)



The search results on the Scopus page found 467 publications. Besides deforestation, REDD+ and forest management were the most discussed topics in DGG's research. The evolution of keywords in the MDGs period to the SDGs period in the most prominent research is on the theme of REDD+. DGG research has an upward trend and US was the most active country in publishing the articles. To find the novelty of the research, it can be found by utilizing the keywords, which is obtained through the VOSviewer application.

**Governance with a gender perspective is very crucial in reducing deforestation. This article is a bibliometric analysis using VOSviewer application to identify and explore DGG research with data sources from Scopus. A total of 467 publications from 1995 to 2021 were obtained for analysis. The findings showed that there had been an increase in DGG research and about 84 countries were involved in this study. There shifts in themes and diversity themes in research in each country, indicating that DGG research has changed with the scale of research that is developing gradually. Deforestation, gender and governance issues have captured the attention of world leaders especially since the SDGs were established in 2015, so it can be concluded that DGG research has high potential to be developed in the future. Besides conducting DGG research with a different perspective, for example linked to sustainability, conservation or leadership. We suggest further DGG researches, for example by conducting an in-depth literature review of whether DGG researches have used gender analysis tools. This is one of the campaigns in reducing deforestation and realizing sustainable forests.**

## Conclusion