

**8TH GLOBAL CONFERENCE ON  
GENDER IN AQUACULTURE & FISHERIES**

**“GENDER BASED INFORMATION ON  
PATENTING ACTIVITIES  
IN THE INDIAN FISHERIES SECTOR”**

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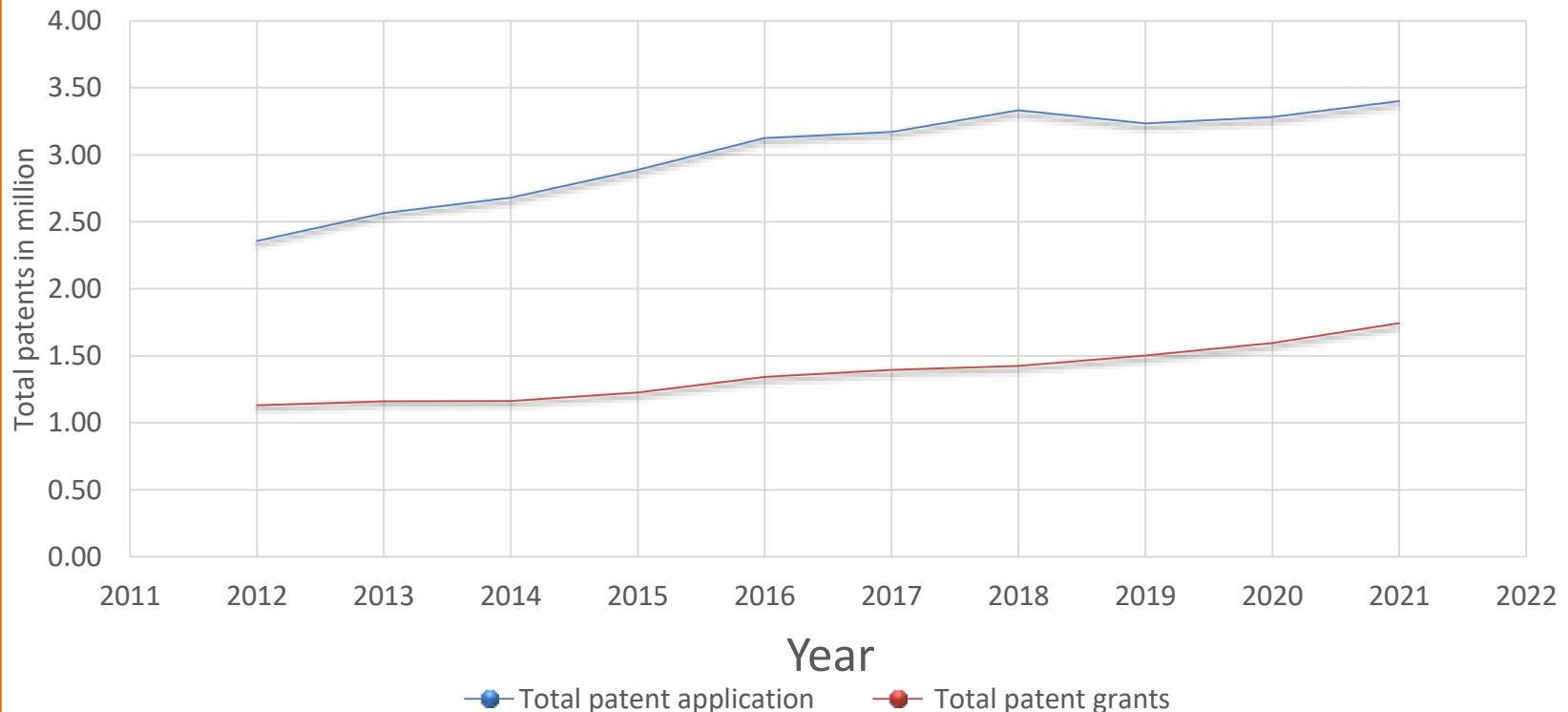
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# World Patents at a glance

- Patent filings around the world exceeded 3.4 million in 2021.
- More than 85% of all patent occurred in China, the US, Japan, the Republic of Korea and the EPO. China accounted for 46.6% of the world total. (WIPO 2022)

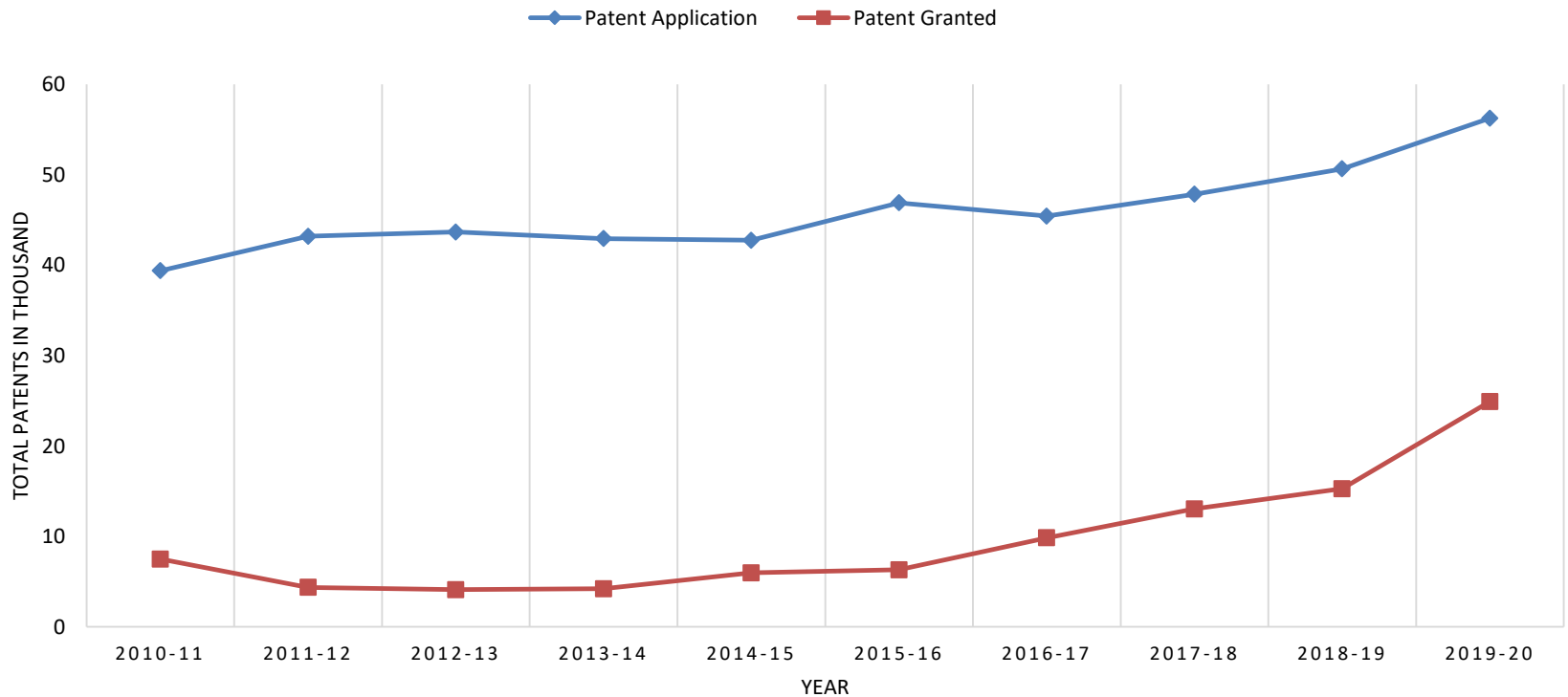
## Total patent applications and patent grants



# Trends in Patent application and patent granted in India

- A total number of patent application : **56,267**
- A total number of patent granted : **24,936**

TRENDS IN PATENT APPLICATION AND GRANTED IN INDIA



# Introduction

- **It is reported that women make up only 28% of the workforce in Science, Technology, Engineering and Math (STEM) and men vastly outnumber women majoring in most STEM fields in college.**
- **Sugimoto et al (2015) revealed that women's patenting remains lower than would be predicted given their representation in science, technology, engineering, and mathematics fields and professions and their authorship of scientific papers.**
- **The women scientists are less likely to disclose inventions, to patent, and to engage in entrepreneurial activities, as confirmed by the rapidly growing literature on gender gap in science, entrepreneurship and innovation (Ding et al., 2006; Ding et al., 2012; Giuri et al., 2007; Frietsch et al., 2009; Stephan & El-Ganainy, 2007; Sugimoto et al., 2015).**

# Introduction

- **Murray and Graham (2007) found that female academic scientists continue to lag their male counterparts in engaging in commercial science, i.e., patenting.**
- **Samandar and Bagheri (2015) reviewed that there is a wide gender gap among patentees in the developed countries which has slightly decreased over time.**
- **Mili et al. (2016) found that women hold an extremely small share of patents, and that at the current rate of progress, gender patent equity is more than 75 years away.**

# Introduction

- **The participation of women in science and technology has been increasing; however, it still remains low particularly in innovative activities (Sifontes and Morales, 2020)**
- **As per World Intellectual Property Organization (WIPO), gender gap persists in the status of women in patenting and with reference to India women inventors had 28.33 % share of Patent Cooperation Treaty (PCT) applications in 2017.**
- **However, there is no gender disaggregated information about inventors who were granted patents in the Indian fisheries sector and this paper addresses this research gap.**

# Methodology

- **Patents granted in the Indian fisheries sector since last 10 years were mined from the official journal of the patent office published weekly by the Indian Patent Office and available online.**
- **Patent title and abstract were read manually and patents related to fisheries and aquaculture were extracted and data was collated.**
- **In addition, this information was also corroborated from websites/annual reports of ICAR fisheries institutes, College of Fisheries, published articles/database wherever possible.**
- **However, it was seen that in the official journal of the patent office, gender of the inventors was not mentioned.**
- **So, based on discussion with experts and verification by searching the inventors from their respective organizations' portals, judgements were made.**

# Result and discussion

- The study revealed that 61.86% of patents were granted to Indian applicants while foreign applicants accounted for 38.14%.
- It was found that out of total Indian inventors 80.54% were male and 19.46% were female inventors and there was a statistically significant difference. The ratio of female to male inventors was about 1:4.
- McMillan (2009) reported identical findings that out of total 5,156 inventors identified in the 1,903 patents 17% were female and 83% were male inventors.
- Similarly, Mauleon and Bordon (2017) reported 15.9% women researchers and 84.1% men researchers out of total Spanish inventor applied for patent at the EPO during the 1999–2007 period.
- Some studies have also indicated that the women who are in STEM fields engage in the patent system far less frequently than their male counterparts and women hold only small share of patents.



# Result and discussion

- The number of granted patent in Indian fisheries with female involvement were 48.33% and without female involvement were 56.67%.
- Mauleon et al (2013) Reported that at least one female inventor is present in 18% of the Spanish patents applied to the EPO during 1990–2004.
- Mauleon and Bordon (2017) reported that 24% of the patents applied at the EPO during the 1999–2007 period had at least one female participant.
- Sifontes and Morales (2020) reveals that the number of US patent granted with female involvement to the countries is only 22%.
- Involvement of female inventor in number of granted patent is nearly double as compared to other countries. It may be due to Government of India has schemes and interventions to encourage participation of women in science and technology so as to reduce the gender gap in patenting activities, to promote innovation amongst women.

# Conclusion

- **The number of female inventor is less as compared to male inventor in granted patents of Indian Fisheries Sector.**
- **The involvement of at least one female inventor in number of granted patent is nearly double as compared to other countries.**

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*Thank You...*