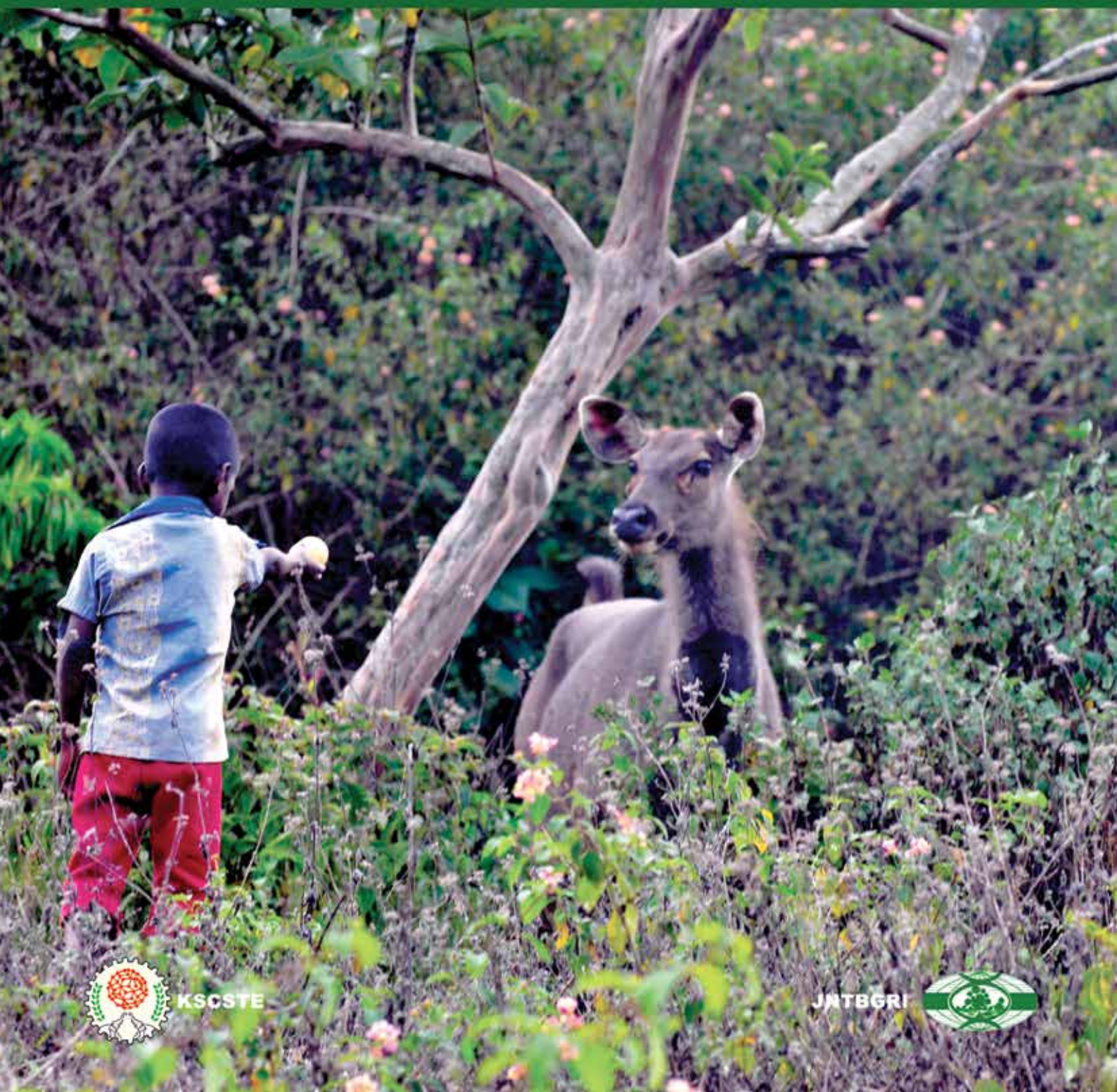
Volume 06 | Number 02 | December 2018

ISSN 2278 - 5906

JOURNAL OF TRADITIONAL AND FOLK PRACTICES



KSCSTE

JNTBGRI

Volume 06 Number 2 December 2018 ISSN 2278 - 5906

JOURNAL OF TRADITIONAL AND FOLK PRACTICES

JTFP online : http://www.jtfp.jntbgri.res.in

KSCSTE JNTBGRI

Volume 06 (2) December 2018, 49-56
ISSN 2278 - 5906
https://doi.org/10.25173/jtfp.2018.6.2.104
http:/www.jtfp.jntbgri.res.in

Journal of Traditional and Folk Practices

Role of awareness creation in enhancing the Intellectual Property output

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Received: 14 Nov 2018 Accepted: 20 Dec 2018

Abstract

This paper analyses the Intellectual Property output of India with special emphasis on the IP output of Kerala and compares the level of IP output with respect to IP awareness. The increasing trend in filing of IP applications in India was observed from 2007 to 2018. The study also showed a steady increase in the number of Indian applicants filing different IPs such as patents, designs, trademarks and copyrights over the past ten years. Among the patent applications filed from Indian applicants during 2007-2017, the contribution from Kerala was only about 0.6%. The IP awareness activities conducted in Kerala State has contributed to a gradual increase in the number of patent applications from the State when compared to the filing ten years ago. The IP output of the State is also improved with the registration of Geographical Indications for several agricultural and handicraft goods. Apart from this, patents filed from grass root innovators also indicate that the IP awareness has also touched the rural and remote areas of Kerala. Thus the paper establishes the relationship between IP output and Awareness.

Keywords: IP Awareness, Intellectual Property Rights, Patent, Geographical Indications, IP Output, IP Literacy, Innovations, IP Industry, Knowledge economy

1. Introduction

Intellectual Property is recognised as a powerful tool for economic growth, and represented as the symbol of a nation's wealth and competitiveness (Saha, 2008). Intellectual Property is the creation of human mind. According to World Intellectual Property Organization (WIPO), these creations include inventions, literary and artistic works, symbols, names, images and designs used in commerce. Intellectual properties are considered as assets, and safeguarded and commercialized through legal rights given to the IP creators which are known as Intellectual Property Rights (IPR). As per the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), there are seven forms of IPR namely; Patents, Trademarks, Copyrights, Industrial designs, Geographical Indications (GI), Layout design of Integrated Circuits and Trade Secrets.

The legal, judicial and administrative standpoints of IPR framework of India are well established and in full compliance with TRIPS. India has enacted and updated laws for the legislation and protection of IPRs at the national as well as international level. The national framework of the Intellectual Property Rights is governed by the Office of the Controller General of Patents, Designs and Trademarks (CGPDTM),

also known as Intellectual Property Office (IPO) of India, under the Department of Industrial Policy and Promotion, under the Ministry of Commerce and Industry (Prasad, 2015). The major IP Acts in force to protect the rights of inventors/creators include Patent Act, 1970 (last amended in 2005), Designs Act 2000, Trademarks Act 1999 (last amended in 2010), Copyright Act 1957 (last amended in 2012), The Geographical Indications of Goods (Registration and Protection) Act, 1999, The Protection of Plant Varieties and Farmer's Right Act, 2001 and Biological Diversity Act, 2002.

As India becomes a knowledge-based economy (Swenson, 2005), a broader understanding of IP and its value in improving competitiveness is very essential. Therefore, building IP awareness became the key priority of the nation. Among the Indian States, Kerala has high literacy rate (93.91%) and having many Research and Development institutions and educational institutions. The abundance of intellectual minds in Kerala is highly capable of developing the innovative products, utilizing the technical resources and rich biological diversity existing in the state. Therefore, proper guidance in consonance with science and technology education is indispensable for maximizing the generation and protection of intellectual property.

The objectives of the study were:

- To make an empirical study of IP output of India.
- To study the IP filing in India with emphasis on filing from Kerala.
- To make an account of the IP output of India on global scenario.
- To analyse the impact of IP awareness in enhancing the IP output.

2. Materials and Methods

The study made use of secondary data from Annual Reports of the Office of the Controller General of Patents, Designs and Trade Marks (accessed from the website: www.ipindia.nic.in) for the past 10 years from 2007 to 2017. The data include details on total IP applications (Patents, Designs, Trademarks, Copyrights, Geographical Indication) filed in the Country. The list of States with maximum GI registrations was accessed from the website of Geographical Indications Registry (http://www.ipindia.nic.in/gi.htm). The data from Patent Information Centre - Kerala for the period from 2007 to 2018 (till Dec 31), was also used for analysing impact of IP awareness on IP output. Statistical analysis was predominantly used for data analysis.

3. Results and Discussion

3.1. IP Output - Global Scenario

The global filing of Intellectual Property applications reached record heights in 2017, with China at top in filings of patents, trademarks, industrial designs and other IPs. Innovators across the globe filed 3.17 million patent applications in 2017, up 5.8% for an eighth straight yearly increase, according to WIPO's annual World Intellectual Property Indicators (WIPI) report. Global trademark filing totalled 12.39 million, where as for industrial designs it reached 1.24 million. Worldwide plant varieties applications raised by 11.7% to reach 18,490 applications in 2017, while data received from 82 national and regional authorities show the existence of around 59,500 protected Geographical Indications (GIs) in 2017.

China's IP office received the highest number of patent applications in 2017, a record total of 1.38 million. It was followed by the offices of the United States of America (6,06,956), Japan (3,18,479), the Republic of Korea (2,04,775) and the European Patent Office (1,66,585). The top five offices accounted for 84.5% of the world total. Germany (67,712), India (46,582), the Russian Federation (36,883), Canada (35,022) and Australia (28,906) also featured among the top 10 offices. Asia has strengthened its position as the region with the greatest activity in patent filings. The top 10 patent filing Countries in the year 2017 is shown in Fig.1.

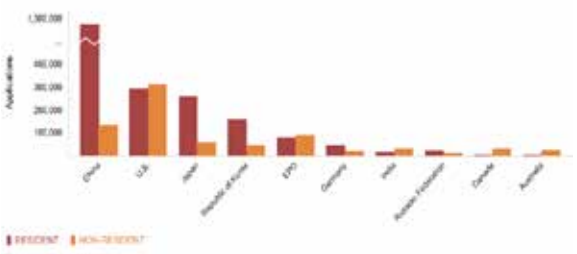

Fig. 1. Top 10 Patent filing Countries in 2017

An estimated 9.11 million trademark applications were filed worldwide in 2017. The IP office of China had the highest volume of filing with a class count of around

5.7 million, followed by the U.S. (613,921), Japan (560,269), the European Union Intellectual Property Office (EUIPO; 371,508) and the Islamic Republic of Iran (358,353). An estimated 945,100 industrial design applications containing 1.24 million designs were filed worldwide in 2017. The office of China received applications containing 628,658 designs in 2017, corresponding to 50.6% of the world total. It was followed by the EUIPO (111,021), the KIPO (67,357), Turkey (46,875) and the U.S. (45,881).

3.2. IP output of India

During 2017-18, the total applications filed in the Indian IP Offices are 355920, which show a significant rise of 44.5% as compared to the filing five years ago in 2012-13 (246251). The breakup of IP applications filed in 2017-18 is shown in **Fig. 2.** India's IP is mainly constituted by the trademark (76.7%) applications, followed by patent (13.4%), copyright (6.5%) and design (3.3%) applications. The total IP applications filed in the Country from 2007 to 2018 is analysed and is represented in **Fig. 3.** Figure shows that there is steady increase in the filing of IPs during the last 11 years. This shows that people has realised the significance of IPR and the necessity of protecting their intellectual creations. During the last 11 years, total applications filed in IP Offices in the Country are 2811236.

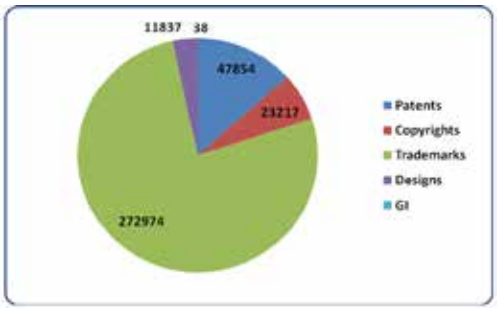

Fig. 2. Total IP applications filed in India during 2017-18

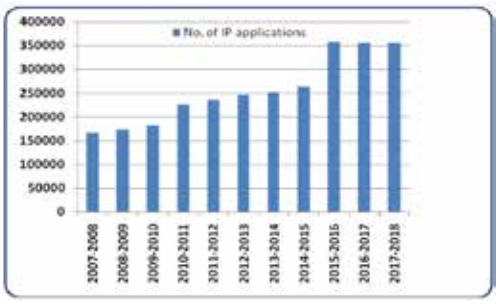

Fig. 3. Total IP applications filed in India from 2007 to 2018

Patents: During 2017-18, 47,854 patent applications were filed showing a rise of 9.5% as compared to the filing in 2012-13 (43674). The trends in patent filing during 2007 – 2018 is analysed and is shown in **Fig.4.** Figure shows that there is steady increase in the patent filing from 2009 onwards. The total number of patents filed during the period 2007-2018 is 458504.

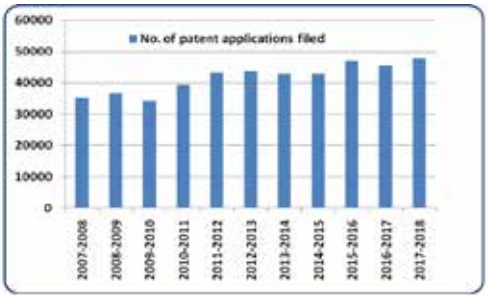

Fig. 4. Patent applications filed in India during 2007 to 2018

During 2016-2017, out of 45444 patent applications filed, the number of applications filed by Indian applicants was 13219 which is 29.2% of the total applications filed and shows 1.2% increase over the previous year. This is in tune with the increasing trend in domestic filing during past years. The total number of patents granted during the year was 9847 out of which 1315 were granted to Indian applicants. Out of total number of ordinary applications filed by Indian applicants during the year, Maharashtra continued in the first position, followed by Tamil Nadu and Karnataka. Kerala occupies the 11th position with 276 applications under its belt. The State / Union Territory wise break up is shown in **Fig. 5.**

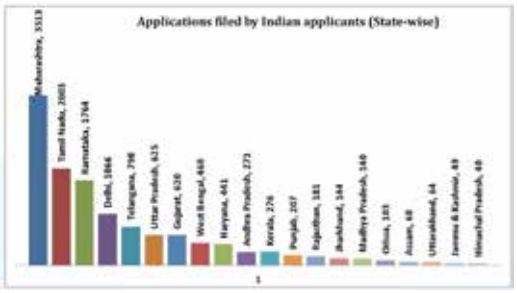

Fig. 5. Patents filed in India (state wise) during 2016-17

During 2016-17, Indian Institute of Technology (IIT) collectively filed the maximum patents (400), followed by WIPRO Ltd. (226), Council for Scientific and Industrial Research (225), Mahindra and Mahindra Limited (205) and Bharath Heavy Electricals Ltd.

(174). The top 5 Indian applicants for patents from Scientific/R&D Institutions and from Universities/ Institutes are shown in Table 1 and Table 2 respectively. 12

Table 1. Top 5 Indian Patent applicants from Scientific/R&D Institutions

Sl No	Name of Scientific and Research & Development Organizations	Applications filed
1	Council of Scientific and Industrial Research	230
2	Defence Research & Development Organisation	58
3	G.H.R. Labs And Research Centre	50
4	Indian Council Of Agricultural Research (ICAR)	41
5	Hetero Research Foundation	23

Table 2. Top 5 Indian Patent applicants from Universities/Institutes

Sl No	Name of Institutes/Universities	Applications filed
1	Indian Institute of Technology (Collective)	400
2	Amity University	106
3	Indian Institute of Science	
4	Veltech High/Multi Tech Dr. Rr & Dr.Sr (College And University)	50
5	G.H. Raisoni College of Engineering	49

Designs: During 2017-18, 11837 applications for design registration were filed which is 42% more than filing during 2012-13. Also, 10,020 applications were registered against the registration of 7252 designs during 2012-13. During 2016-2017, Maharashtra filed maximum applications for design registration (1659) followed by Delhi (1013), Gujarat (934) and West Bengal (522). Kerala occupied the 10th position with 89 applications. During the last eleven years, 94368 applications for design registration were filed in the Design Registry, out of which 79298 were granted registration.

Trademarks: During 2017-18,272974 applications for trademark registration were filed at Trademark Registries and it accounted an increase of 40.5% as compared to the filing in 2012-13 (194216). Also, 300913 applications were registered during the year against the registration of 44361 in 2012-13. During 2016-17, Maharashtra occupied the first position with 63070 applications, followed by Delhi (51563) and Gujarat (24208). Kerala occupies 12th position with 7730 applications. During the period from 2007 – 2018, 2197460 trademark applications were filed and 1207579 were granted registration.

Geographical Indications: During 2017-18, 38 applications were filed for GI registration in GI Registry which shows a decent rise of 58.3% from the filing in 2012-13. Also, 26 GIs were registered during the period against the registration of 21 GIs during 2012-13. During the last eleven years, 526 applications for GI registration were filed and 291 applications were granted registration. So far, 330 GI registrations were granted in the Country. Karnataka has got maximum GI registered products (39) followed by Maharastra (30) and Tamil Nadu (28). Kerala occupied 4th position in the GI registration with 27 GI registrations.

Copyrights: During 2017-18, 23217 applications for Copyright registration was filed, out of which 26,195 applications were examined and 19997 were registered. The filing trend shows a good increase in the filing in the previous year in terms of filing (16,617), examination (16,584) and registration (12988).

3. 3. IP output of Kerala

Kerala occupied 10th position among the state-wise Indian applicants of the patents filed during 2016-2017. Out of 13,219 applications from Indian applicants during 2016-2017, the contribution from Kerala is 276 applications that accounted for 2.1 percent of the total. The filing trend of patent applications from Kerala from 2007 to 2017 is shown in **Fig. 6.** Altogether 2405 patents were filed from Kerala during the period of ten years from 2007-2017 (average of 240 per year). Maximum patents was filed during 2011-2012 (337) followed in 2013-2014 (315). During the period 2007-2017, out of 2405 patents filed from Kerala, 54 patents were granted. The year wise grant of patents filed from Kerala is shown in **Fig. 7.** When the ranking of Kerala among the States in the Country in patent filing is analysed, it can be seen Kerala occupied its highest

ranking of 8 during 2007-2008 and the lowest ranking is 11 (2014-2015). During the other years, Kerala stood at 10th position. The position of Kerala in Patent filing during the period 2007-2017 is shown in **Fig. 8.**

The major Intellectual Property tapped by Kerala is Geographical Indications. Kerala has got variety of unique products which has the potential of getting GI registration. Kerala could also harness the potential commercial benefits out of GI registration in India. Many famous craft products and agricultural goods were qualified as GI goods from the state. As on December 31, 2018, Kerala has registered 27 Geographical Indications that include 12 agricultural goods, 12 handicraft goods and logo for three handicraft goods. The list of GI registered products from Kerala is shown in Table 3. Karnataka has got maximum GI products (39) followed by Maharastra (30) and Tamil Nadu (28). Kerala ranks 4th in the GI registration. Out of 330 GI registered products, 27 products are from Kerala which accounted around 8%.

During 2016-17, 7730 trademark applications were filed from Kerala and was in 12th position in the filing list. 89 applications for design registration were also filed during the above period and was standing in the 10th position.

Fig. 6. Patent applications filed from Kerala during 2007-2017

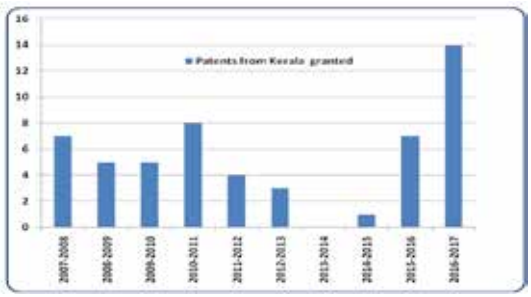

Fig. 7. Patents (filed from Kerala) granted during 2007-2017

Fig. 8. Position of Kerala in Patent filing during 2007-2017

Table 3 . List of GI registered products from Kerala

GI registered products from Kerala	
Aranmula Kannadi	Kuthampally Sarees
Navara Rice	Central Travancore Jaggery
Palakkadan Matta Rice	Wayanad Gandhakasala Rice
Malabar Pepper	Wayanad Jeerakasala Rice
Alleppey Coir	Kaipad Rice
Brass broidered Coconut Shell Crafts of Kerala	Chendamangalam Dhoties & Set Mundu
Screw Pine Craft of Kerala	Payyannur Pavithra Ring
Maddalam of Palakkad	Chengalikodan Nendran Banana
Alleppey Green Cardamom	Kuthampally Dhoties & Set Mundu
Pokkali Rice	Maddalam of Palakkad(Logo)
Vazhakulam Pineapple	Screw Pine Craft of Kerala(Logo)
Cannanore Home Furnishings	Brass Broidered Coconut Shell Craft of Kerala (Logo)
Balaramapuram Sarees and Fine Cotton Fabrics	Nilambur Teak
Kasargod Sarees	

3.4. IP Awareness in Kerala

Kerala is well known for its high literacy rate. However, the intellectual property output of the State is very low when compared to other States in the Country. One of the reasons is the lack of awareness about the importance of IPR among the people in the State. In order to provide IPR related services to the people in the Sate, with the support of Dept. of Science & Technology, Govt. of India, Patent Information Centre – Kerala (PIC-Kerala) was established in May, 2003. PIC-Kerala has been conducting IPR awareness Seminars, Workshops, Lectures, Talks, Exhibitions, etc, throughout the State, in association with Educational Institutions, Govt./University Departments, Research and Development Institutions, Industries and Non-Governmental Organizations. So far, PIC Kerala organized 394 IPR awareness programmes in the State targeting students, researchers, scientists, entrepreneurs, professionals, technocrats, industrialists, grass root innovators and general public. The awareness programmes organized by PIC-Kerala year wise **(Fig. 9)** shows that good number of awareness programmes has been conducted in the State for the past 10 years. 62% of such awareness programmes were conducted in Colleges, 10% in R&D Institutions, 4% in Universities and 23% for the general public. During these awareness programmes, study materials on IPR have been distributed to the participants to disseminate awareness on the basics of IPR. Apart from the awareness activities, PIC-Kerala also facilitates the patenting activities from the State. As part of patent facilitation, PIC-Kerala so far has processed 831 patent facilitation applications, out of which engineering inventions contributed the large share (74%), whereas 26% were science inventions. **Fig. 10** shows that since 2012, applications for patent facilitation received have been increasing steadily and it is because of the awareness activities carried out in the State. It is interesting to note that majority of the applications received in PIC-Kerala for patent facilitation are from grass root innovators/individuals (72%), whereas Colleges, R&D Institutions and Universities constituted about 16%, 6% and 6% respectively **(Fig. 11)**. PIC is the only Government Agency in the State which provides IPR related services to the public.

While comparing the awareness programmes conducted in the State with processing of patent facilitation applications and filing of patents from the state (**Fig.12**), a gradual increase in the filing of patent applications from Kerala can be seen. This indicate that IP output of Kerala has strengthened as a result of the persistent awareness activities and, in the very near future the IPR ecosystem will develop to its full potential in Kerala.

Fig. 9. IPR Programmes organized by PIC-Kerala since 2008

Fig. 10. Patent applications processed by PIC since 2008

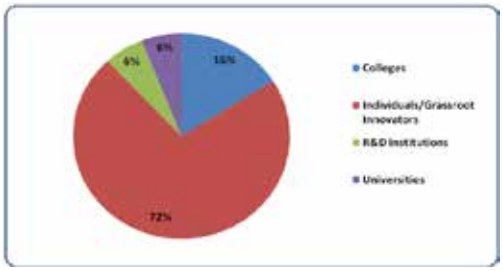

Fig. 11. Category wise applications processed by PIC

Fig. 12. Analysis of Awareness Programmes, Patent applications processed and Patents filed

3.5 National IPR Policy

Realising the fact that even though India has been an innovative society always, much of the intellectual property (IP) created remains unprotected due to the lack of awareness about the significance of IPR, the Government of India has brought out the National IPR Policy in May, 2016. The rationale for the National IPR Policy lies in the need to create awareness about the importance of intellectual property rights (IPRs) as a marketable financial asset and economic tool.

The Policy lays down seven objectives to be achieved to stimulate the IP system in the Country. The objective of 'IPR Awareness: Outreach and Promotion' aims to improve awareness about the benefits of IPRs and their value to the rights-holders and public. It aims to reach out to the less-visible IP generators and holders, especially in rural and remote areas and emphasis would be laid on creating awareness regarding the rich heritage of India in terms of our Geographical Indications, Traditional Knowledge, Genetic Resources, Traditional Cultural Expressions and Folklore. The clarion call of the program would be the holistic slogan "Creative India; Innovative India".

Generation of IPR is another objective in which it is aimed to tap the knowledge resources of scientific/ technological talents in R&D institutions, enterprises, universities and technical institutes and stimulate the creation of IP assets. The Policy also aims to have strong and effective IPR laws, which balance the interests of right owners with larger public interest. Another objective is to modernize and strengthen service-oriented IPR administration. Commercialisation of IPs is another major objective which aims to connect the IP creators and investors and to encourage entrepreneurship to capture the value of IPRs. The Policy also aims to strengthen the enforcement and adjudicatory mechanisms for combating IPR infringements. Human Capital Development is another objective which aims to strengthen and expand the human resources, institutions and capacities for teaching, training, research and skill building in IPRs.

The IP Policy aimed to integrate IP as a policy and strategic tool in national development plans. It foresees a coordinated and integrated development of IP system in India and the need for a holistic approach to be taken on IP legal, administrative, institutional and enforcement related matters. The Department of Industrial Policy and Promotion has been entrusted as the nodal point to coordinate, guide and oversee implementation and future development of IPRs in India. The responsibility for actual implementation of plan of action will remain with the Ministries/ Departments concerned in their assigned sphere of work. Public and private sector institutions and other stakeholders, including State governments, were also involved in the implementation process.

4. Conclusion

The Government of India has given due importance to IPR and its dissemination during the past several years. India stands seventh in the top 10 Patent filing countries globally. The Government through its National IP Policy envisages to propagate awareness on intellectual property rights among the public, as well as to improve the legal and technical capabilities of examiners and controllers. The extensive outreach programs for promoting intellectual property rights inevitably helped in enhancing the IP output of the country. According to the Global Innovation Index (GII) 2018, co-published by the World Intellectual Property Organization (WIPO) and Cornell University, India ranks 57th out of 126 countries as compared to 60th rank on GII 2017. India's position on the GII has been keenly monitored by the Indian Government for the past few years. India is the only economy from the Central and Southern Asia region in the top half of the GII, gaining positions since 2016. At the indicator level, India ranks well in a number of important indicators, including graduates in science and engineering, productivity growth and ICT services exports, where it ranks number 1 in the world.

Considering the vast potential of Intellectual Property generation in the State, IPR awareness programmes has been conducted throughout the State covering a wide spectrum of sectors including Academic Institutions, Universities, Industries, Government Departments, Non Government Organizations and Professional Bodies. Kerala invested in IPR related activities based on a long-term perspective. Patent Information Centre – Kerala (PIC-Kerala) functioning in KSCSTE has been implementing many programmes to promote and propagate IPR in the State of Kerala.

Kerala is the first State in the Country to come up with an Intellectual Property Rights Policy in the year 2008, which shows the importance given by the State to IP

related matters. Even though the number of patent applications filing from Kerala is low when compared to the nearby States, the awareness level has been increased during the past 10 years. While analysing the patents filed by grass root innovators, it is obvious that awareness creation activities has also reached out to the less-visible IP generators, especially in rural and remote areas. Apart from patents, the increase in filing of other IPs such as trademarks, designs and geographical indications in these years also indicates that IP awareness could enhance the IP output of the State and thereby the socio- economic development of the nation. It can be concluded that IPR awareness mission in the Country has improved the intellectual property literacy among the public over a period of last ten years and yielded positive results in IP generation directed towards national strategic goals.

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