105th FoCARS
Foundation Course For Agricultural Research Service

Digital Repository of Course Materials

International and National Agricultural Research System in India
Challenges and Management of Agricultural Extension in the New Millennium
Production Systems Approach
Economic Policies and Agricultural Development
WTO and Agriculture Research and Development

• Intellectual Property Rights in Indian Agriculture
  • Copyrights
  • Designs as Ips
  • Geographical Indicators
  • Patents
  • Trade Secrets
  • Trademarks
  • Application of Bioinformatics in Agriculture
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INTELLECTUAL PROPERTY RIGHTS IN INDIAN AGRICULTURE*

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1. Introduction

Rising population and accelerating economic growth require enhancing intensification of agricultural practices to meet the increasing demands for food. The demands would not only be in terms of the quantity of food produced, but also of its quality. It is increasingly being realized that some of these challenges can be overcome through more innovative approaches for technology development and creating better concerted diffusion systems to benefit more stakeholders. Notwithstanding successes in higher food grain production over the four decades in making India food secure, it is now documented that some of the existing practices have led to stress on natural resources including water and soil. Problems leading to the energy crisis, deterioration of soil health, and declining water resources are some of the critical areas needing more innovations approaches to make agriculture more sustainable (Kalpana Sastry et al, 2010a). Keeping the guiding principle of inclusive growth in view, the current approach at the national level is to rebuild agriculture as an important source of livelihood generation both in the farm and non-farm sectors and ensure that there is adequate and nutritive food for the growing population. For instance, the recent initiative of the Government of India through SETU (Self-Employment and Talent Utilization) under National Institution for Transforming India (NITI Aayog, 2016) is one such step with several opportunities for support of start-up businesses, and other self-employment activities, particularly in technology-driven areas including those impacting agriculture-production systems (PCS).

In India, the concept of commercialization of technology from R&D is relatively new in most sectors; especially in agriculture. The Government of India has recently announced the “National Intellectual Property Rights (IPR) policy (GoI, 2016a). The policy advocates promotion of a holistic

1 Joint Director, NAARM
and conducive ecosystem for catalysing the intellectual property for economic, socio-cultural development and protecting public interest. The policy document put forth seven objectives namely i) IPR awareness: outreach and promotion, ii) generation of IPRs, iii) legal and legislative framework, iv) administrative management, v) commercialization of IPR, vi) enforcement and adjudication and vii) human capital development. The policy aims at strengthening the national initiatives such as “Make in India” (GoI, 2016b), “Skill India” (GoI, 2016c), “Start Up India” (GoI, 2016d), “Smart Cities” (GoI, 2016e), “Digital India” (GoI, 2016f). The flagship programme of the Government like Start Up India aims at building a strong ecosystem for nurturing innovations and Start-ups in the country (GoI, 2016d). Under this, Atal Innovation Mission (AIM) is the action plan envisaged with the focus on promotion of entrepreneurship and innovation in sectors such as manufacturing, agriculture, health and education (GoI, 2016d).

2. Current Statutory IP Laws in India vis-vis Agri-based Technologies in India

The WTO-TRIPS agreement of 1995 (WTO,2016), which is binding on all member countries including India, provided for minimum norms and standards in respect of protection of IPR in several categories: patents, copyrights, trademarks, plant varieties, geographical indications, industrial designs, layout designs of integrated circuits, and trade secrets. This agreement led India to put in place a set of appropriate and compliant mechanisms and instruments. Some of the legal instruments passed by the Indian Parliament as part of compliance process to the TRIPS include The Patents Act, 1970 (39 of 1970), The Patents (Amendment) Act, 1999 (17 of 1999), The Patents (Amendment) Act 2002 (38 of 2002), The Patents (Amendment) Act 2005 (15 of 2005), The Geographical Indications of Goods (Registration & Protection) Act, 1999 (Office of Controller General of Patents Designs and Trade Marks,2016) and The Protection of Plant Varieties and Farmers Rights Act, 2001 (PPV FR Act) (53 of 2001) (PPV&FR Authority. 2016.) Apart from these, the Government of India also enacted an umbrella legislation called the Biological Diversity Act, 2002 (No.18 of 2003). (NBA,2008) as part of the country’s commitment to Convention of Biological Diversity (CBD). There is no specific IPR Act to provide protection for undisclosed information (trade secret). The Indian Contract Act of 1872 and common law have provisions covering this with the Ministry of Law and Justice as the nodal agency (Sudhir Kochhar,2008). A compilation of the major types of IP assets in
agriculture R&D with their qualifying attributes under relevant legislations in India is presented in Annexure. The broad institutional mechanisms, legislative provisions and potential returns to the stakeholders of agri-value chain are also depicted. Considering special nature of use of bio-resources and traditional knowledge (TK) in agriculture, the various provisions and legal mechanisms for protection of these are also enumerated.

3. **IP and Technology Management in ICAR System**

The IP&TM scheme launched by the ICAR during 2008 is a driver towards implementation of the policy (ICAR, 2014). Capacity building of the manpower engaged in the scheme formed the primary focus of the initial implementation process leading to series of awareness building and sensitization programmes. These initiatives resulted in emergence of a pool of about 100 trained IP professionals across the system. Notwithstanding initial apprehensions on IP protection towards stimulate investment in research in agriculture (Kumar and Sinha, 2015), these initial steps of ITMU scheme grants led to the building of vibrant IP ecosystem in the NARES. In terms of visible gains, the number of filings under various IP categories have increased significantly in last ten years (ICAR, 2014c). The recent recognition of ICAR as an organisation through grant of the ‘Thomson Reuters India Innovation award 2015’ is yet another testimony to this fact (Thomson Reuters 2016). Thus a viable governance mechanism (ICAR, 2014a) gives a conducive environment for and necessitate an understanding of regulatory and statutory laws in the country for better positioning of technologies and related products and services in markets. Only then can it lead to trigger better opportunities for business in this sector.

Recent reports of agri-start-ups successfully bringing new technologies in markets signify this fact. For example, the success of Barix, a start-up advocating eco-friendly, low cost crop protection methods to increase crop produce and quality at low cost. (Amit Tiwari, 2016) There are other successful start-ups like BIOSAT which uses Biochar based organic Soil Amendment Technology as an soil additive, Nashik-based start-up, MITRA (Machines, Information, Technology, Resources for Agriculture) which works on improving mechanization at horticulture farms with the use of R&D and high quality farm equipment like sprayers (Rashmi Ramesh, 2015). These instances are early-stage successes of technologies in agriculture leading to commercialization and setting of agri-start-ups. In
the current ecosystem, start-up trend in India is picking up in academic and R&D institutions (Raghavi Rao Kodati, 2016), where researchers are looking beyond just publishing or licensing technologies to the industry. This is also relevant for technologies applicable in agri and food sector.

4. **Concluding Remarks**

Summarized below are few points for R&D professionals and technology developers engaged agricultural research in NARES to consider:

i. Current legal framework India affords several opportunities for R&D outputs with applications in agricultural PCS to be protected. Multiple IPs and portfolio building is possible and may be harnessed for building business models for technology developers.

ii. Compliances with regulatory bodies on use of agro-biodiversity and related knowledge is mandatory. These should form part of SOP for due diligence during the entire process of technology development and its transfer.

iii. Capacity building for R&D professionals in IP and technology commercialization should be intensified.

iv. Technology developers or seekers for plant protection technologies should be encouraged through enabling ecosystem and enter as start-ups. These should form part of curriculum at University level in line with National IP Policy.

v. Encouraging the use of IP informatics for research projects proposals and execution as part of due diligence processes for understanding technology push and market–pull forces before R&D investments are made. This would more useful for technology development in SME sector.

Thus, the early successes in transferring technologies as businesses signal positive returns on R&D investments. This is further accelerated through the fillip given by current GOI policies on innovation, incubation including building vibrant ecosystem for triggering start up culture in agriculture sector. Researchers and technology generators in agricultural sector need to recognise these opportunities and re-orient their R&D efforts. Such efforts will not only bring innovation to combat crop losses but also bring a more vibrancy and better returns in agribusinesses engaged in this sector.
5. References and Suggested Further Reading


1. Session on this topic-105 FOCARS. Jan 2017. ICAR-NAARM.
2. To be used as part of academic reading during the course of FOCARS 105 [Jan 5 to Apr 4, 2017 by the scientist-trainees only.
ICAR-National Academy of Agricultural Management. Hyderabad.


6. Task for the Class

i. The class is divided into groups of 5-6 members.

ii. Each group will be given a set of base documents relevant to area allotted to that group.

iii. Your task is to discuss among each member the documents given for 30 minutes and make a group presentation on the learnings gained by the group.

iv. After this and based on the class discussion, the group has to complete the list of prospective technologies from R&D which can under that specific IP form.

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Annexure
Current Statutory IP Laws in India vis-vis Agri-based Technologies in India

Table 1 - Institutional mechanism(s), legislative provisions for specific IP and related forms of knowledge and resources for agricultural technologies

<table>
<thead>
<tr>
<th>S. No</th>
<th>IP</th>
<th>Legislation</th>
<th>Administration authority</th>
<th>Qualifying attributes</th>
<th>Indicative list of prospective technologies in agricultural sector*</th>
<th>Potential stakeholder(s) to benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Patent</td>
<td>Patents Act, 1970 and amendments thereon</td>
<td>Controller General of Intellectual Property Rights</td>
<td>Novel, non-obvious, capable of industrial application and not fall within the provisions of Section 3 and 4 of the Patents Act, 1970; Also Statutory Compliance with Section 10 for those innovators based on biological resources</td>
<td>Inventors, traders, economy</td>
<td></td>
</tr>
<tr>
<td>Meeting</td>
<td>Topic</td>
<td>Meeting Details</td>
<td>Legal Protection</td>
<td>Industry/SMEs</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2.</td>
<td>Design</td>
<td>Design Act, 2000 and amendments thereon</td>
<td>Controller General of Intellectual Property Rights</td>
<td>New or original; significantly distinguishable from known designs or combination of known designs</td>
<td>Industry; SMEs</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Trademark</td>
<td>Trade Marks Act, 1999 and amendments thereon</td>
<td>Controller General of Intellectual Property Rights</td>
<td>Capable of distinguishing features of goods and services, capable of graphical representation, used or proposed to be used to identify goods/services</td>
<td>Industry/SME: products and service sector</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Geographical indication</td>
<td>Geographical Indications (Registration and Protection) Act, 1999</td>
<td>Controller General of Intellectual Property Rights</td>
<td>Specific geographical origin, possessing qualities, reputation or characteristics that are essentially attributable to that place of origin</td>
<td>Communities, traditional practitioners, knowledge holders</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Copyright</td>
<td>Copyright Act, 1957 and amendments thereon</td>
<td>Controller General of Intellectual Property Rights</td>
<td>Original expressions of ideas, creations</td>
<td>Creators of all works</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Integrated circuit design</td>
<td>Semiconductor Integrated</td>
<td>Controller General of Intellectual Property Rights</td>
<td>Original; not commercially exploited</td>
<td>Electronic industry, traders, SMEs</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Circuits Layout-Design Act, 2000</th>
<th>Property Rights</th>
<th>anywhere in India or in a convention country; inherently distinctive; inherently capable of being distinguishable from any other registered layout-design</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Plant varieties</td>
<td>Protection of Plant Varieties and Farmers’ Rights Act, 2001</td>
<td>Chairperson, Protection of Plant Varieties and Farmers’ Rights (PPV&amp;FR) Authority/Registry</td>
<td>New, distinct, stable and uniform</td>
<td>Plant breeders, farmers, industry</td>
</tr>
<tr>
<td>8.</td>
<td>Biodiversity</td>
<td>Biological Diversity Act, 2002</td>
<td>Chairperson, National Biodiversity Authority (NBA)</td>
<td>Biological resources, herbal remedies, associated traditional knowledge</td>
<td>Knowledge holders, farmers, communities, researchers, etc.</td>
</tr>
<tr>
<td>9.</td>
<td>Traditional knowledge</td>
<td>None</td>
<td>Secretary of the concerned Ministry (ies)</td>
<td>Traditional knowledge/genetic resources</td>
<td>Knowledge holders in communities by sharing of accrued knowledge</td>
</tr>
</tbody>
</table>

*Adapted from Samuel et al, 2014 and also on based on data collected by the author from various sources.*