National Intellectual Property Systems, Innovation and Economic Development with perspectives on Colombia and Indonesia

Main Findings
Acknowledgements

This report was prepared and written by Caroline Paunov. Dominique Guellec gave substantial advice and comments. Mineko Mohri contributed significantly to the overall report. Kazuyuki Tanji provided statistical support for the publication. Project support by Marney Crainey, Miranda Dawkins, Hayley Gowen and Stephen Wyber is gratefully acknowledged. Miranda Dawkins and Hayley Gowen also organised the OECD Peer Review and Presentation at the UK IPO on 25 April 2013. Suggestions and comments provided by Sacha Wunsch-Vincent of the World Intellectual Property Organization are gratefully acknowledged. The project benefitted from financial support from the UK Prosperity Fund and the UK IPO.

The framework presented in Chapter 1 benefitted from suggestions provided by Suma Athreye, Shahbaz Balock, Alison Brimelow, Tony Clayton, Agnes Estibals, Christine Greenhalgh, Rachelle Harris, Gernot Hutschenreiter, Duncan Matthews, Dimitrios Pontikakis, Nicola Searle, Piotr Stryszowski, Sacha Wunsch-Vincent, Andrew Wyckoff and participants of the OECD Peer Review at the UK IPO on 25 April 2013.

The country mission to Colombia, which forms the basis of the country review presented in Chapter 2, was organised and conducted by Caroline Paunov with the support of the National Ministry of Planning of Colombia (DNP) and, in particular, Oscar Salazar and Javier Villarreal. The review also benefitted from a one-day workshop organised by Catalina Atehortúa García from TECNOVA. A background report on Colombia’s economic, innovation and social context is based on a comprehensive report prepared by Catalina Martínez Gutierrez. The work also benefitted from background research conducted by Andrés Barreneche. Comments provided by Gernot Hutschenreiter and Andrew Wyckoff are gratefully acknowledged.

Moreover, the OECD team would like to acknowledge the following for their participation in the interview process: Carlos Fonseca, Sonia Monrey Varela, Jorge Alsonso Cano, Sara Araujio Santos, Pablo Javier Patino, María Consuelo Velásquez, Carlos Gordillo, Carlos de Hart, Camilo Montes, Adriana Vargas Saldarriaga, Liliana Ariza Ariza, Pablo Felipe Robledo del Castillo, José Luis Londoño Fernández, Ana Luisa Diaz Jimenez, Juanita del Castro, José Luis Salazar, María José Lamus, Felipe García Pineda, Carlos Andrés Corredor, Carolina Romero Romero, Paula Andrea Rivery Montoya, Andrés Felipe Vasco Carona, María Helena Vivas López, Fernando Montenegro Lizarralde, Mauricio Sanz de Santamaría, María Alejandara Neira M., Wilson Rafael Rios Ruiz, Lina María Jaramillo Saldarriaga, María del Pilar Noriega Escobar, Jairo Navales Cardona, Paola Velásquez Acosta, Luisa Fernanda Calderón España, Maireth Posada Vásquez, Néstor F. Saavedra, Aníbal Ordóñez Rodríguez, Luis Herbert Ramírez Ramírez, Sandra Marcela Porras Arboleda, Juan Ignacio Granados Aristizábal, Beatrice Elena Ramírez Muñoz and Diego Fernando Galeano Montoya.
The country mission to Indonesia, which forms the basis of the country review presented in Chapter 3, was organised and conducted by Mineko Mohri and Caroline Paunov with the support of the Indonesian Ministry of Science and Technology (RISTEK) and, in particular, Ms Alvini Pranoto and her team. Mineko Mohri prepared a comprehensive background document on Indonesia’s IP system. Kazuyuki Tanji provided statistical support. Appendix 1 draws on Chapter 6 of the OECD Review of Innovation in Southeast Asia (OECD, 2013). It also incorporates some of the results from background research conducted by Andrés Barreneche. Comments provided by Piotr Stryszowski and Andrew Wyckoff are gratefully acknowledged.

The analysis also benefitted from the kind support of Prof. Dr. Didik Notsosudjono. Moreover, the OECD team would like to acknowledge the following for their participation in the interview process: Alvini Pranoto, Mr. Amir F. Manurung, Ms. Nungki Indrianti, Ms. Tri Sundari, Dr. Teguh Rahardjo, Mr. Ahmad Dading, Mr. Santosa Yudo Warsono, Mr. Edie Prihantoro, Mr. Jajang Hasyim, Mr. Herwin Heriyanto, Ms. Asizah Nur Hapsari, Dr. Ira Nurhayati Djarot, Dr. Erry Ricardo Nurzal, Dr. Ir. Agus Sediadi, Tiapi P.H., Sri Purmiyanti, Dr. Himawan Hariyoga, Rudy Salahuddin, Dr. Nur Muhammad Sinungan, Dyah Waniyu, Danny R. Ramadhan, Abdul Haleni, Eka Sasurita, Muhammad Fauzy, Puspa Kriselina, Sringin Widati, Dr. Fatimah Padmadinata, Dr. Trina Fizzanty, Ms. Tien Rahmiatin, Dr. rer. nat. Suseno Amien, Dr. Miranda Risang Ayu, Yudy Hendrayana, Dian Narwastuty, Dede Kania, Ita Susanti, Sumiyati, Ismail Wellid, C. Ria Budiningsih, Helitha Novianty, Muhammad Ziaurahman, Ms. Arifia Fajra, Drs. Aswin Nasution and Jemy Soegeng.

Finally, gratitude is due to David McDonald and Brian Henry for editing the report.

For comments and further information write to: caroline.paunov@oecd.org.

Full report forthcoming in January 2014

www.oecd.org/sti/inno/IP-studies.htm
Introduction

Innovation plays a pivotal role in economic development: this is one important lesson of the past decades. The build-up of innovation capacities has been central to successful growth experiences. Emerging and developing countries have recognised that innovation is not just about high-technology products but that innovation capacity has to be built into the early stages of the development process in order to gain the learning capacities that will allow “catch-up” to occur. The adoption of foreign technology requires adaptation to the local context, which in turn means incremental innovation. These countries need also innovation capacity to address developmental challenges specific to local contexts, such as providing access to drinking water or eradicating neglected diseases.

Intellectual property (IP) rights are important for building up those innovation capacities. IP creates exclusive rights for their holders, which can result in substantial monetary rewards if the creation meets with market success. They are aimed at providing incentives to invent, in fields relating to technology (patents), to business (trademarks) and to the arts (copyright). IP can serve innovation not only by providing direct incentives for inventions, but also by a number of other mechanisms: facilitating access to knowledge and inventions (e.g. by providing opportunities for licensing and disclosing information on inventions in patent documents), stimulating innovation by resolving information asymmetries (e.g. trademarks allow firms to signal the quality of their product), facilitating international competitiveness and trade (e.g. by strengthening knowledge transfer from international to local firms) and enhancing opportunities for access to finance (e.g. using IP as collateral for credit). IP is the more so pivotal in the knowledge economy where intangible assets are critical.

National innovation performance depends on a variety of factors and innovation policy choices have substantial impacts. A policy area of potentially significant impact on innovation is the national IP system. The IP system allows a market-based economy to produce innovation while providing solid ground for other types of government intervention to be more effective. IP policy is in many cases a complement to other innovation policy instruments: It can be used to foster the commercialisation of public research, to give guarantees to inventors responding to public procurement (demand-side policies), to support access to soft loans or other public funding. A solid IP system is also critical to accessing international markets.

This publication addresses the role of national systems of IP in the socio-economic development of emerging and developing countries, notably through their impact on innovation. It presents a framework that identifies the key mechanisms how IP systems can support their innovation and development objectives. This allows country studies to be conducted to identify strengths and weaknesses in national IP systems from the perspective of contributions to national innovation performance. It then enables the formulation of concrete policy recommendations, thereby serving the overall objective of strengthening innovation and growth. The report also discusses two country studies of IP, conducted for Colombia and Indonesia. These are based on an analysis of the national intellectual property systems which draws on country missions to the two countries that gathered detailed information and feedback from more than 100 stakeholders on IP-related priorities and bottlenecks. Concrete policy recommendations are provided for both countries.
1. Analysing the national intellectual property systems of developing and emerging countries

How can policy optimise the contributions of national intellectual property systems to innovation in a development context?

A well-functioning IP system must navigate among multiple constraints and objectives, at the legal and economic level, and find compromises among multiple actors. Maximising the contributions of national IP system to innovation requires policies to take into consideration the challenges that innovators face. If unaddressed, these challenges will reduce or even eliminate the positive impacts of IP systems on innovation. The nature of these challenges varies across countries and, therefore, requires country-specific analyses. However, it is possible to identify a series of stylised weaknesses that characterise developing and emerging countries and identify impacts on IP systems and, in consequence, policy implications.

National IP systems can be defined as the set of institutions, rules and bodies involved in the design, implementation and enforcement of IP in a national economy. Figure 1 illustrates the key dimensions of national IP systems in a “conceptual map”. The nodes indicate the various issues (concepts, mechanisms, actors or policy measures) to be addressed, while the boxes indicate issues that belong to the same theme. The analytical structure is implemented in the Intellectual Property Rights module of the OECD-World Bank Innovation Policy Platform.

It is critical for analysis to start with an assessment of innovation and IP where the key dimensions are the different types of IP and the ways in which they relate to innovation, as well as the rationales for using IP to promote innovation.

The following elements describe the critical dimensions of the IP system:

- **The organisation of IP systems**, whose key issues here are: the legal provisions set for IP ownership (as established by substantive patent law for patents); the operations and procedures of the IP system; the conditions for enforcement of IP rights; international agreements regarding IP that countries have agreed on; and IP skills and training on both the public administration and user side. These are critical for the “legal quality” of the IP system, which determines whether IP ownership rights are indeed guaranteed.

- **IP, markets and diffusion** describe a range of framework conditions that critically shape IP impacts. This includes: the state of competition; conditions for licensing and markets for IP; whether IP can be used to obtain credit on markets for finance; and the roles played by open innovation and open source.

- A key element is also how IP systems support innovation activities and access to knowledge for different types of **IP users in the production sector**, including (in emerging and developing countries): traditional and informal actors; “catching-up” firms; leading “frontier” firms; and universities and public research institutions.
Figure 1. Conceptual mapping for analysing IP for innovation

- Innovation and IPR
  - Types of IPR: Patents, Utility models, Trademarks, Copyrights, Industrial design, Trade secrets, Combined uses of IP, Innovation without IP
  - Rationales of IP for innovation: Incentives for Invention, Access to knowledge and inventions, IP to address social challenges, IP for international competitiveness and trade, Addressing information asymmetries, IP and access to finance
- Organisation of IP systems
  - Legal quality of IP
    - IP operations and procedures, Patent costs, International dimensions, IP enforcement and litigation, IP law, Substantive patent law, Trademark law, Utility model law
- IP, markets and diffusion
  - Open innovation, Open source, Licensing and markets for IP, IP and markets for finance
  - Competition, Standards and IP, Patent pools and antitrust, Patent races, Proliferation of patents
- Intellectual Property Rights
  - IP users: Leading “frontier” businesses, “Catching-up” businesses, Innovators in traditional and informal sectors, Universities and public research institutes
  - Fields of IP use: Innovation in biotechnology and pharmaceuticals, Innovation in agriculture, Creative industries, Innovation in ICT
• The ways in which IP can serve innovation differ across users, and also vary substantially across fields or sectors of activities (including ICT, agriculture and creative industries, as well as biotechnology and pharmaceuticals).

• There is a wider question of how IP policies relate to innovation policies. Critical issues include: how national IP systems are governed; the characteristics of IP policies compared to others; policy design questions (i.e. prioritisation, compatibilities and trade-offs); and relevant governance dimensions for IP policies.

Principles for conducting country analyses

Conducting country analyses of middle-income countries’ national IP systems requires focusing on the comprehensive set of dimensions. The following considerations are critical in that respect:

• National IP systems can have substantial impacts on innovation. By creating exclusive rights for their holders they can provide incentives to invent. Innovation performance of users in the productive sector also depends on their access to knowledge. Therefore, IP policy has to strike the right balance between providing incentives for innovators and facilitating access.

• Such policy focus has to go beyond considering patents only. Utility models, trademarks and design rights are more relevant than patents for most resident inventors in middle-income countries. One indication of this is the fact, although imperfect, that the national-to-foreign application ratio is lowest for patents compared to other types of IP for various developing and emerging countries (Table 1).

Table 1. IP applications by IP office, broken down by resident and non-resident (%), 2011 or latest available year

<table>
<thead>
<tr>
<th>Office</th>
<th>Patent Resident</th>
<th>Non-Resident</th>
<th>Utility model Resident</th>
<th>Non-Resident</th>
<th>Trademark Resident</th>
<th>Non-Resident</th>
<th>Design Resident</th>
<th>Non-Resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia (2009 for design data)</td>
<td>9%</td>
<td>91%</td>
<td>81%</td>
<td>19%</td>
<td>95%</td>
<td>5%</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>17%</td>
<td>83%</td>
<td>56%</td>
<td>44%</td>
<td>45%</td>
<td>55%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Philippines</td>
<td>6%</td>
<td>94%</td>
<td>94%</td>
<td>6%</td>
<td>57%</td>
<td>43%</td>
<td>48%</td>
<td>52%</td>
</tr>
<tr>
<td>Thailand</td>
<td>24%</td>
<td>76%</td>
<td>92%</td>
<td>8%</td>
<td>60%</td>
<td>40%</td>
<td>77%</td>
<td>23%</td>
</tr>
<tr>
<td>Brazil (2010 for all)</td>
<td>12%</td>
<td>88%</td>
<td>97%</td>
<td>3%</td>
<td>82%</td>
<td>18%</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td>Chile</td>
<td>12%</td>
<td>88%</td>
<td>76%</td>
<td>24%</td>
<td>68%</td>
<td>32%</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>Colombia</td>
<td>9%</td>
<td>91%</td>
<td>92%</td>
<td>8%</td>
<td>58%</td>
<td>42%</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>Ecuador (2010 for all)</td>
<td>1%</td>
<td>99%</td>
<td>41%</td>
<td>59%</td>
<td>54%</td>
<td>46%</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>Mexico</td>
<td>8%</td>
<td>92%</td>
<td>89%</td>
<td>11%</td>
<td>71%</td>
<td>29%</td>
<td>46%</td>
<td>54%</td>
</tr>
<tr>
<td>China</td>
<td>79%</td>
<td>21%</td>
<td>99%</td>
<td>1%</td>
<td>92%</td>
<td>8%</td>
<td>97%</td>
<td>3%</td>
</tr>
<tr>
<td>France</td>
<td>87%</td>
<td>13%</td>
<td>42%</td>
<td>58%</td>
<td>92%</td>
<td>8%</td>
<td>95%</td>
<td>5%</td>
</tr>
<tr>
<td>Germany</td>
<td>79%</td>
<td>21%</td>
<td>80%</td>
<td>20%</td>
<td>88%</td>
<td>12%</td>
<td>89%</td>
<td>11%</td>
</tr>
<tr>
<td>Japan</td>
<td>84%</td>
<td>16%</td>
<td>79%</td>
<td>21%</td>
<td>78%</td>
<td>22%</td>
<td>87%</td>
<td>13%</td>
</tr>
<tr>
<td>United States</td>
<td>49%</td>
<td>51%</td>
<td>84%</td>
<td>16%</td>
<td>57%</td>
<td>43%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: WIPO Statistics Database.
These incentives, however, require that national IP systems have legal, administrative and judicial conditions in place to guarantee those rights to potential users of the IP system. Experiences of different IP offices provide principles to strengthen legal and procedural dimensions of IP including notably enforcement. Competition authorities also play a critical role, notably to tame possible abuses of the system.

The resources allocated to the IP system by government must keep to reasonable levels as the IP system partly competes with the innovation system for some of these resources, like engineers (who can work as researchers in industry or as patent examiners). In order to ensure quality of the system while reducing its cost, countries should seek to enhance international co-operation (e.g. common search and examination in patent offices of several countries).

In a development context potential innovators face multiple challenges: these include substantial heterogeneities in productive sectors, that is, a few “islands of excellence” – leading innovative firms, universities and/or sectors – coexist with an often substantial informal sector and a large number of firms with low innovation capacities. Moreover, institutional weaknesses, scarcity in knowledge assets and multiple market failures characterize the context for innovation. These factors also shape the impacts of IP systems on innovation (Table 2).

Complementary policies adapted to specific development contexts are, therefore, critical to maximize IP systems’ contributions. Such policies may include, for instance, providing capacity-building training or funding of joint firm-university research projects. Adapting national IP systems requires taking into account specific characteristics and needs of informal and traditional sectors, “catching-up” and “frontier” businesses and universities and public research institutes (PRIs). In order to support innovation, it is important all groups have opportunities to effectively benefit from the national IP system.

This means that priorities cannot be set in such a way that only legal and administrative conditions or complementary IP policies are implemented. Both are critical. Policy can initially target specific users and/or types of IP focusing on those with highest potential payoffs from IP. This, however, should not lead to fully excluding groups from the IP system. Policy is critical to avoid the IP system’s outcomes are biased towards larger businesses and, thus, other types of actors contribute less than would be possible to innovation.

Designing and co-ordinating the implementation of IP policies in support of innovation can be facilitated by a high-level co-ordination body with a clear “IP for innovation” agenda. It should be composed of both the various public institutions of the national IP system and its users including also private firms and businesses from different groups. Buy-in at the highest policy level is critical as is the requirement for participating institutions to implement decisions taken.
There are institutional weaknesses and missing institutional settings. 
- National markets to provide finance for innovation development are weakly developed, as are markets for trading technology. 
- Complementary IP institutions, such as TTOs, may be inexistent or less well equipped. 
- Competition authorities might be less well prepared to regulate markets. 
- IP office capacities might suffer from limited human capital, resources and productivity. 
- Governance co-ordination challenges are potentially substantial, not only for IP policy, but also for innovation policy. 
- There are potential challenges regarding trust in institutions and corruption.

Private sector capabilities are weak with major capacities in research institutions. 
- Opportunities for national university-firm network cooperation are weak. 
- Private sector capacity to absorb S&T from universities, research institutes and abroad is limited, given lack of access to skills and resources.

There are potential challenges regarding trust in institutions and corruption.

- Actors place very different demands and needs on the IP system (e.g. some seek international IP, while others have more to benefit from access to the information contained in IP applications). 
- Potential policy pressures might influence IP policies in a way that does not serve all actors. 
- Incumbents with strong monopoly powers might not substantially increase innovation efforts with IP, and rather use IP ownership to fight potential incumbents. 
- Specific types of IP will be most important for leading sectors.

Increased university IP will have only a limited impact on the commercialisation of inventions generated by universities and PRIs, as the business sector does not have the capacity to exploit them. 
- Patents will remain out of reach for many businesses, as they lack the inventive capacity and the resources for needed investments. 
- The potential benefits to be had from IP differ substantially (e.g. lack of access to finance constrains opportunities for businesses to commercialise inventions, even if they possess the corresponding IP titles). 

- Universities and PRIs with research capacities can provide substantial contributions to successful IP strategies. As such, they should be a target group for these policies. 
- IP policies for universities and PRIs need to be complemented by a strategy to establish active links with businesses and develop their capacities for successful commercialisation. 
- Lack of access leads to limited returns from IP. It is necessary for complementary policies to compensate for such lack of access to resources (e.g. by supporting access to finance for innovation).

- Ensuring the “legal quality” of IP systems is challenging. 
- Enforcement is often weak, reducing the value of IP ownership rights. 
- Complementary policies in addition to core IP system policies are weaker with more limited funding and constraints on governance. 
- IP systems will have only weak impacts on financing for innovation unless institutional barriers are overcome to enable such market developments.

- Institutional reforms at various levels remain critical for the legal and administrative framework of IP to operate. Trust is critical and would, if absent, lead to the failure of administrative and legal conditions. 
- Public policy efforts on finance are necessary for IP systems to positively impact innovation financing. 
- Seeking economies of scale in the provision of services, for example, by co-operating internationally to automate and improve the efficiency of IP application procedures or setting up regional TTOs to address weaknesses is critical.

### Table 2. Innovation system challenges, their impacts on IP systems and policy implications

<table>
<thead>
<tr>
<th>Innovation system challenges</th>
<th>Impacts on IP systems</th>
<th>Policy implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>The productive sector is characterised by inequality with few leading sectors (“islands of excellence” co-exist with low-productivity firms and a large informal sector). Lack of competition is a challenge. Polarising policy pressures can be substantial. Growth/economic performance is often skewed towards a few sectors with agricultural and services, and in some cases, natural resource-based industries, playing a particularly important role.</td>
<td>Actors place very different demands and needs on the IP system (e.g. some seek international IP, while others have more to benefit from access to the information contained in IP applications). Potential policy pressures might influence IP policies in a way that does not serve all actors. Incumbents with strong monopoly powers might not substantially increase innovation efforts with IP, and rather use IP ownership to fight potential incumbents. Specific types of IP will be most important for leading sectors.</td>
<td>IP policies have to consider a variety of actors and ensure their involvement and participation in policy consultations. Accountability and transparency of IP policy systems can help to reduce the dominance of powerful players over policy decisions. Competition policy has to ensure that all firms, including leaders, have incentives to innovate and do not make use of IP to fight incumbents. IP policies should explicitly focus on those types of IP that serve leading sectors best.</td>
</tr>
<tr>
<td>Private sector capabilities are weak with major capacities in research institutions. Opportunities for national university-firm network cooperation are weak. Private sector capacity to absorb S&amp;T from universities, research institutes and abroad is limited, given lack of access to skills and resources.</td>
<td>Increased university IP will have only a limited impact on the commercialisation of inventions generated by universities and PRIs, as the business sector does not have the capacity to exploit them. Patents will remain out of reach for many businesses, as they lack the inventive capacity and the resources for needed investments. The potential benefits to be had from IP differ substantially (e.g. lack of access to finance constrains opportunities for businesses to commercialise inventions, even if they possess the corresponding IP titles).</td>
<td>Universities and PRIs with research capacities can provide substantial contributions to successful IP strategies. As such, they should be a target group for these policies. IP policies for universities and PRIs need to be complemented by a strategy to establish active links with businesses and develop their capacities for successful commercialisation. Lack of access leads to limited returns from IP. It is necessary for complementary policies to compensate for such lack of access to resources (e.g. by supporting access to finance for innovation).</td>
</tr>
<tr>
<td>There are institutional weaknesses and missing institutional settings. National markets to provide finance for innovation development are weakly developed, as are markets for trading technology. Complementary IP institutions, such as TTOs, may be inexistent or less well equipped. Competition authorities might be less well prepared to regulate markets. IP office capacities might suffer from limited human capital, resources and productivity. Governance co-ordination challenges are potentially substantial, not only for IP policy, but also for innovation policy. There are potential challenges regarding trust in institutions and corruption.</td>
<td>Ensuring the “legal quality” of IP systems is challenging. Enforcement is often weak, reducing the value of IP ownership rights. Complementary policies in addition to core IP system policies are weaker with more limited funding and constraints on governance. IP systems will have only weak impacts on financing for innovation unless institutional barriers are overcome to enable such market developments.</td>
<td>Institutional reforms at various levels remain critical for the legal and administrative framework of IP to operate. Trust is critical and would, if absent, lead to the failure of administrative and legal conditions. Public policy efforts on finance are necessary for IP systems to positively impact innovation financing. Seeking economies of scale in the provision of services, for example, by co-operating internationally to automate and improve the efficiency of IP application procedures or setting up regional TTOs to address weaknesses is critical.</td>
</tr>
</tbody>
</table>
Table 2. Innovation system challenges, their impacts on IP systems and policy implications (cont’d)

<table>
<thead>
<tr>
<th>Innovation system challenges</th>
<th>Impacts on IP systems</th>
<th>Policy implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge is scarce.</strong></td>
<td><strong>Policy implications</strong></td>
<td></td>
</tr>
<tr>
<td>– The skills base for innovation is weak. Skills are more concentrated, and research capacities, IP knowledge, managerial capacities and absorptive capacities from abroad are low.</td>
<td>Patents are not a realistic target for many actors because they lack the needed research capacities. Tapping into knowledge provided by IP will be extremely relevant, but limited absorptive capacities can lower potential spillovers.</td>
<td>Building up knowledge and research capacities must be a constant objective so as to increase the number of potential users of IP. It should include, in particular, patents and opportunities for tapping into foreign knowledge. With limited skilled resources to support the innovation system the IP system should avoid absorbing a large share of engineers as examiners.</td>
</tr>
<tr>
<td>– Foreign knowledge is critical, but limited absorptive capacities challenge opportunities for local industry to benefit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Levels of S&amp;T activities are low.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Market failures are prevalent.</strong></td>
<td><strong>Policy implications</strong></td>
<td></td>
</tr>
<tr>
<td>– Markets for finance are weakly developed including for innovators.</td>
<td>While IP can provide powerful incentives, the reality is that incentives will only arise for inventors who have successfully commercialised their products. This translates into IP systems that will, in the absence of addressing those challenges, only provide innovation to those less affected by market failures.</td>
<td>IP policies alone are not sufficient to facilitate innovation, particularly for actors confronted with market failures. Policy complementarities should play a critical role in addressing and providing them with opportunities. Regional IP offices can play an important role in providing access to users in remote locations.</td>
</tr>
<tr>
<td>– Infrastructure challenges are substantial and constrain business activities, particularly for smaller businesses. Transportation costs limit market size.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Study of Colombia’s national intellectual property system

Since 2006, policy makers in Colombia have developed an IP strategy oriented towards supporting innovation and national competitiveness. This has resulted in various reforms that have helped to improve the legal and administrative conditions of the IP system, and thus have created opportunities for the IP system to play a more prominent role in support of innovation. In light of these developments and with the current re-orientation of Colombia’s innovation policy, this report provides recommendations to help support Colombia’s IP policy for innovation at this critical stage.

The socio-economic and innovation context of Colombia and IP policy

In Colombia, recent years have seen the end of two consecutive decades of slow economic growth and an emerging middle-income market. Since 2000, average GDP growth has been 4.27% per year. Nevertheless, the country still faces many structural challenges. It remains one of the most unequal countries in the world and has suffered from ongoing internal conflict for more than 60 years. Productivity remains low because of poor quality of education, weak infrastructure, persistent informality and low governance levels. These factors also hinder innovation system performance. However, the current mineral sector boom provides new opportunities in this regard as 10% of royalties will be dedicated to building up the innovation system, providing resources to strengthen skills, business-framework conditions, interactions and linkages. Meanwhile, large commodity-related foreign direct investment (FDI) inflows and exchange-rate appreciation are increasingly generating worries of Dutch disease. Table 3 provides a summary of the strengths, weaknesses, opportunities and threats to Colombia’s innovation system.

Table 3. Summary SWOT analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Strong economic performance over most of the last decade.</td>
<td>• Improved security and framework conditions for innovation and commitment to further integration of Colombia in the global economy.</td>
</tr>
<tr>
<td>• Strong political commitment to education and increasing participation rates.</td>
<td>• To focus policies on making business the main driver of the innovation system.</td>
</tr>
<tr>
<td>• Strong commitment to strengthen innovation as a sustainable and inclusive driver of development.</td>
<td>• The prospect of rising levels of royalty-derived funding for STI activities. Inclusion of a wider spectrum of stakeholders in the allocation of resources and capability development across regions.</td>
</tr>
<tr>
<td>• Some research institutions with strong research capacities and international linkages.</td>
<td>• To provide incentives for companies to enhance local development of operating skills and innovative capabilities.</td>
</tr>
<tr>
<td>• Confidence, enthusiasm and willingness to innovate among the national STI policy leadership. Similar qualities at departmental and municipal levels in some areas.</td>
<td>• To establish an infrastructure of strong government laboratories, research and technology organisations and universities with evolving interaction with business.</td>
</tr>
<tr>
<td>• Strong political commitment to grow the Colombian digital economy and the deployment of a fibre backbone throughout the country.</td>
<td>• Recent initiatives to raise the quality and capability of Colombia’s IP system to encourage innovation.</td>
</tr>
</tbody>
</table>
Table 3. Summary SWOT analysis (cont’d)

<table>
<thead>
<tr>
<th>Weaknesses:</th>
<th>Threats:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Low levels of business innovation capabilities and productivity, with a long “tail” of weak companies.</td>
<td>• Failure to diversify and move into higher-value segments, to exploit the up- and down-stream opportunities of the minerals boom.</td>
</tr>
<tr>
<td>• Increasing reliance on mineral commodities and slow diversification into new economic activities.</td>
<td>• Failure to embed innovation pervasively in businesses and in the fabric of society.</td>
</tr>
<tr>
<td>• High levels of inequality in income and opportunity, in particular in access to tertiary education.</td>
<td>• Failure to reorient STI policy towards addressing a broader range of firms with different needs and to provide support more directly.</td>
</tr>
<tr>
<td>• The small scale of the formally organised innovation system and its concentration in an “island” of academic and research institutions.</td>
<td>• Cumbersome project application and lengthy decision procedures that weaken resource mobilisation and project impacts.</td>
</tr>
<tr>
<td>• Resource and human capital constraints in research-performing institutions resulting in a small (although rising) research output of variable quality.</td>
<td>• Insufficient mobilisation of human capital and capacity to exploit the window of opportunity offered by the STI royalties fund.</td>
</tr>
<tr>
<td>• Shortcomings in technological, technical training and learning in production enterprises.</td>
<td>• Inability to upgrade skills and quality sufficiently to support the needs of the wider innovation system for human capital and knowledge.</td>
</tr>
<tr>
<td>• High levels of social need for innovation that are insufficiently articulated in demand and poorly linked to innovation.</td>
<td>• Failure to pursue agendas that serve wider societal and economic needs.</td>
</tr>
<tr>
<td>• An unbalanced STI policy mix overly focused on a narrow range of innovation modes of limited relevance to most businesses and to social innovation.</td>
<td></td>
</tr>
<tr>
<td>• Limited policy co-ordination among ministries and across regions.</td>
<td></td>
</tr>
</tbody>
</table>

Source: OECD (forthcoming), OECD Review of Innovation Policy of Colombia, Paris, OECD.

The socio-economic context of Colombia and the characteristics of its innovation system are crucial to the capacity of IP to support innovation in Colombia, as the following points make clear:

• Colombia’s good economic performance in the last decade, its strong macroeconomic discipline, its well-integrated trade environment and its increased national security, provide the right context for strengthening its innovation system, including its IP system, to enhance its contributions to innovation. Colombia has also substantially reduced tariffs and barriers to FDI and signed various free trade agreements including with the European Union (EU) and the United States. This has raised opportunities for accessing and tapping into knowledge from abroad. The incentives of foreign companies to engage in knowledge transfers will also depend on whether they perceive Colombia’s IP system as one that provides them with sufficient “legal quality” to protect their intellectual property.
• A small number of well-known universities produce qualified scientists and conduct research in an expanding higher education sector, while in the private sector a small cadre of innovation-oriented companies have grown to appreciate the benefits of innovation. A key implication for IP policies, particularly those based on patents, is that a focus on leading research institutions offers the greatest opportunities for success. This will also require engaging private actors in fostering commercialisation and engaging in efforts to develop licensing and markets for IP, as research institutions do not have the capacity for commercialisation. Given the weaknesses of private sector activities in innovation, foreign markets for IP might be particularly attractive outlets.

• Colombia has a low-technology base and declining exports of high-technology products. Many private sector actors in low-technology manufacturing and services have been only modestly engaged in innovation activities and only slightly engaged in technology-based innovations. With such a low-skills base, patents will not be attainable for many actors in the innovation system.

• Colombia’s biodiversity offers potential opportunities for inclusive economic development, in particular with increasing demand on international markets for natural products and developments in biotechnology. A focus on ownership and the access rights of genetic resources can be important in this specific context, as they determine how benefits are shared and enable their use for commercial purposes.

• Colombia has low levels of industrial innovation, which need to be addressed. However, some sectors outside those traditionally considered as innovation-intensive can provide opportunities for developing innovation capacities. This includes extractive industries, which require innovation-based services adapted to local conditions. In fact, Colombia’s most active patenting company is the state-owned firm, Ecopetrol. IP policy that is relevant for different actors in these sectors can be useful as a way to raise the contributions of IP to innovation, especially in conjunction with corresponding innovation policies. A focus on IP for industrial innovations in manufacturing alone might not be as useful.

• Inequality is an important challenge for Colombia. Given that the informal sector employs about half of the labour force, the question of how to integrate groups commonly excluded from innovation cannot be easily dismissed. While IP policies are certainly not the primary solution, their importance demands that attention be paid to ways in which IP can support innovators in informal and traditional sectors, and provide a contribution to addressing this social challenge.

• Several types of market failure constrain the performance of innovators in Colombia. These include limited access to capital for innovation and high barriers to business entry. While IP can provide powerful incentives, returns such as royalties will only arise for inventors who have successfully commercialised their inventions. This means that IP will only be used by those who are least affected by market failure, including access to capital and other barriers to entry, unless complementary policies can address these issues. Small entities such as universities and small businesses will face difficulties in obtaining returns from their inventions on domestic markets.
Key recommendations

Main lines of policy action

The national IP system in Colombia can help to strengthen the country’s innovation system; however, it must be accompanied by a range of complementary policies. These include policies to encourage interaction among actors in the innovation system, address the weak skills base, and contend with shortcomings in the business framework, such as the limited opportunities for innovators to obtain external financing and the substantial transportation costs to reach markets given inadequate infrastructure.

Substantial delays in processing IP litigation and a lack of relevant knowledge on the part of judges have acted as constraints on the effectiveness of the IP system. To help remedy this weakness, IP offices were granted judicial powers in 2012, but this approach must be complemented by corresponding resource decisions and continued efforts aimed at improving efficiency if it is to be effective. Efforts aimed at improving the quality of IP examinations while reducing delays in processing should continue, so as to reinforce recent achievements by Colombia’s industrial property office, the Superintendency of Industry and Commerce (SIC). In addition, provision of regional IP services, particularly in regions where industrial capacities are strong, can encourage use of the IP system outside of Bogotá. Furthermore, provision of information online on IP application procedures and effective use of IP by businesses can support these efforts, but should be complemented by capacity-building efforts, otherwise uptake is unlikely to increase substantially.

Colombia’s private and public universities have begun to define IP policies to support commercialisation efforts. However, the fact that public sector officials cannot operate spin-offs impedes the ability of public universities to engage fully in commercialisation activities. This restriction is of particular relevance, as researchers do not receive substantial rewards as part of their salaries for obtaining or commercialising IP. Similarly, public programmes aimed at supporting the use of IP have to be streamlined to allow them to play their intended role.

Focusing IP awareness and capacity-building initiatives on national actors with the strongest potential for obtaining revenue-generating IP can bring the highest payoffs for Colombia’s innovation system. Moreover, geographical indication (GI) and trademarks have formed the basis of the successful “Juan Valdez’ brand. Replicating its success for other products requires complementary policies aimed at building effective collective associations. Engaging in such efforts for a selected set of products is preferable to expanding the number of GIs with the limited support of such associations. Moreover, support for specialised services such as TECNNOVA, which conducts technology screening, is important as it enables Colombia’s innovators to take advantage of information on technologies contained in patent application files, and thus promotes the “catching up” process.

Finally, the success of Colombia’s IP co-ordination body, the Intersectoral Commission for Intellectual Property of Colombia (CIPI), in co-ordinating enforcement issues should be capitalised upon with the creation of an institutional setting that would empower the CIPI to implement an “IP for innovation” agenda. Regarding the institutional context for Colombia’s IP policy, the proposal to create an autonomous industrial property institute that deals exclusively with industrial property is an attractive option. Such a body could work to ensure that IP questions are given sufficient focus and that the roles of competition and IP granting authority are clearly separated as would be the case if implemented by separate institutions.
**Detailed recommendations**

**Connecting IP policies to innovation policies**

1. IP can be a powerful support for innovation system, but it is critical for Colombia to implement complementary innovation policies to strengthen its innovation performance.

Low levels of R&D investments in Colombia are a proxy indicating that inputs into innovation activities are still limited and thus the ability of the system to generate patentable inventions is low, independent of the country’s IP system. Figure 2 shows that the number of Colombian patent applications is highly correlated with the level of R&D investment.

**Figure 2. Resident patent applications and gross domestic expenditure on R&D (GERD), 2011 or latest available year**

Notes: 1. A resident application is an application filed with an IP office by an applicant residing in the country/region in which that office has jurisdiction. 2. Countries were selected if they had a GERD greater than USD 500 million PPP (in constant prices, 2005) and more than 100 resident patent applications. 3. Resident patent application data are for 2011 and 2010 for GERD, except for Belarus, Brazil, China, Egypt, Hong Kong, Indonesia, Mexico, New Zealand, Pakistan, Serbia, Slovenia, South Africa and Ukraine, (2010 and 2009 for GERD); for Switzerland (2009 and 2008 for GERD); and for Argentina, Greece, India and Thailand, (2008 and 2007 for GERD). 4. A ranking of “a resident patent applications-per-GERD” out of 50 offices for which data are available is displayed in parentheses.


Indeed, a large number of universities, research institutions and companies lack the necessary research capacity to produce patents. Moreover, innovation capacities are generally low. This is related to a variety of challenges affecting Colombia’s innovation system, which IP policies alone cannot address. This
requires the implementation of policies aimed at enhancing the availability of skills and at strengthening connections between actors such as universities and private businesses. The OECD Review of Innovation Policy of Colombia provides a comprehensive set of recommendations aimed at supporting innovation performance. Improvements will in turn allow the IP system to contribute even more substantially to innovation; for instance, better university-firm linkages help to improve opportunities for the commercialisation of IP at universities. In combination with such policies, the national IP system can be a powerful tool to help strengthen Colombia’s innovation performance.

2. Colombia’s Intersectoral Commission for Intellectual Property (CIPI) could play a significant role in pushing the “IP for innovation” agenda forward. Success will require an explicit focus on innovation, involvement of the private sector, high-level policy buy-in and the implementation of decisions by the relevant public entities.

The various participants in CIPI have acknowledged the Commission’s valuable contributions to improving co-ordination among actors of the IP system. Significant progress has been made on the operational side; however, there is currently no formal connection between CIPI and co-ordinating bodies responsible for competitiveness and innovation. This needs improvement. The role of CIPI will need to be adapted if it is to take the necessary steps to stimulate IP policy for innovation including: i) high-level policy engagement, as is the case in leading innovating countries (e.g. in Japan, the Prime Minister heads the country’s IP co-ordinating body); ii) the adoption of an “IP for innovation” agenda, which would define specific targets and their periodic evaluation mechanisms; iii) a requirement for participating institutions to implement these decisions; and iv) the involvement of the private sector, including different types of actual and potential users (e.g. representatives from traditional industries). The latter are critical to effectively negotiating challenges to turning IP into an instrument for innovation.

3. Colombia should consider creating an autonomous industrial property institute to deal exclusively with industrial property.

The SIC is responsible for IP operations and procedures regarding industrial property. At the same time it acts as Colombia’s consumer protection agency and its competition authority. With increased uses of IP by local entities, these multiple roles may result in a conflict of interest. Moreover, the variety of tasks do not help the SIC to focus on IP and its role to support Colombia’s innovation system. The proposal to create an autonomous institution, formulated in SIC’s document Propiedad Industrial 2020, is therefore an attractive option.

Legal and administrative conditions of IP systems

4. Colombia’s IP offices will need adequate resources and staffing to carry out their new jurisdictional powers and must seek efficiency improvements where possible.

Users of the IP system in Colombia agree that the legal system is not equipped to efficiently support the enforcement of IP rights. Judges are often insufficiently trained on matters regarding IP and are not best prepared to pronounce on IP matters. The delays inherent in the judicial system constitute a more fundamental
challenges; one caused by insufficient resources relative to the amount of cases presented to the courts. As criminal law cases have priority over civil law cases, IP law cases face even more substantial delays. For this reason, in 2012, Colombia’s three IP offices received jurisdictional power allowing them to act as a court of first instance over IP conflicts. The effectiveness of this decision, however, depends on the allocation of necessary resources and staff, as well as the ability of IP offices to raise the efficiency of their operation. Needs will become clearer once the effective demand for these services becomes clearer.

5. Efforts aimed at reducing backlogs need to continue.

Delays in processing IP applications can impede the effectiveness of the system. The SIC therefore decided to invest in reducing backlogs, increasing the quality and speed of examination processes also by seeking further automation of processes. The result was a reduction in processing times for different types of IP (Figure 3). However, continued efforts will be needed to keep the backlog under control. This also requires flexibility in the allocation of resources to allow the SIC to respond adequately to shifts in application numbers, as it does not have an autonomous budget. This question is particularly relevant in the current context with the new jurisdictional powers granted to the SIC. Colombia’s SIC is well connected to other IP offices in the region, with which it continues to co-operate, and with the World Intellectual Property Organisation (WIPO), on initiatives to improve performance. These efforts help to maintain the effectiveness of the system and help avoid over usage of skilled workers needed elsewhere in the economy, notably to drive innovation.

Figure 3. Time required for processing IP applications, averages in months for 2005-11

Note: Data for 2013 are provisional reflecting processing times for January–June 2013.

Source: Data provided to the OECD by the SIC in July 2013.
Adapting IP systems to users

6. Simplified IP application procedures and fee discounts can have more substantial effects if combined with innovation support policies.

Applicants from micro and small companies and inventors with low incomes received specific discount rates for IP applications to the SIC, contributing to a rise in applications among those groups. Another approach taken to improve both efficiency and access has been the introduction of simplified application procedures. The use of IP as part of a business’s innovation processes, however, needs to go beyond the application stage. Most firms lack the expertise required to successfully exploit IP. This raises the risk of failed IP strategies and in reaction to failure potentially to firms’ resistance to IP use in the future. The provision of adequate training courses and export support services for these users is, therefore, critical. Other useful approaches include the establishment of networks of firms to create mutual learning opportunities and support for expert advisory services. The initiative taken by the SIC to provide those participating in training activities with additional application discounts is a useful incentive-scheme to effectively increase uptake.

7. It is important to create regional IP services to incentivise the wider use of IP and to help enhance the role IP can play in plans aimed at fostering regional S&T and innovation capacities.

At present, IP offices in Colombia are based exclusively in Bogotá. Given the complex geography and substantial regional differences, far higher costs to access IP services are incurred by users not based in the capital. About 80% of patent applications and 75% of other IP applications come from Bogotá. This concentration can only in part be explained by a strong concentration of economic activities in Colombia’s capital. Providing regional IP services would be particularly useful in regions such as Antioquia with a high potential of benefiting from the use of IP. Different possibilities are discussed in the SIC document Propiedad Industrial 2020 (2012). One possible option to reduce the upfront costs of opening new offices is to co-operate with institutions such as regional Chambers of Commerce among others. Online services could help to reduce IP application costs for those located outside of Bogotá, but will be insufficient to strengthen IP use among those with no prior experience.

8. IP policy should address regulatory constraints faced by researchers in public universities and support services provided by external institutions such as TECNNOVA to help universities reach out to the private sector.

Public sector officials are not permitted to create spin-offs because of regulation prohibiting additional revenues outside their salaries. In 2013, Colciencias, the Universidad de Antioquia and the Colombian Association for the Progress of Science (ACAC) took steps to identify a legal alternative that would allow researchers to engage in such ventures. Possible approaches include more flexible work contracts providing researchers with the option to take leave if they wish to create a spin-off.
The financing of TTOs is a challenge for a large number of universities, not only those in emerging economies. Reaching sufficient economies of scale is important for sustainable business models for TTOs. Since individual institutions might not have sufficient scale, promoting support services for several institutions is of interest. It is particularly worth supporting services that help to establish links with the private sector, in particular for universities with the capacity to produce patents of potentially high commercial value. Institutions such as TECNNOVA are good examples of this approach. In cases where the private sector is not well prepared to co-operate with universities, advisory services can play a key role in strengthening capacities to engage in co-operation. Those steps are the more so relevant as they figure prominently among top Colombian patent applicants; four universities are the top 10 ranking for 2007-12 (Figure 4).

**Figure 4. Number of patent applications for the top 10 Colombian entities for 2007-12**

<table>
<thead>
<tr>
<th>Entity</th>
<th>Patents</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECOPETROL S.A</td>
<td>30</td>
</tr>
<tr>
<td>UNIVERSITY OF ANTIOQUIA</td>
<td>11</td>
</tr>
<tr>
<td>POCH FIGUEROA PABLO</td>
<td>9</td>
</tr>
<tr>
<td>UNIVERSITY DEL VALLE</td>
<td>8</td>
</tr>
<tr>
<td>NATIONAL UNIVERSITY OF COLOMBIA</td>
<td>8</td>
</tr>
<tr>
<td>BALLESTEROS CAMELO CARLOS JULIO</td>
<td>6</td>
</tr>
<tr>
<td>ELÉCTRICOS INTERNACIONAL LTDA</td>
<td>6</td>
</tr>
<tr>
<td>INDUSTRIAL UNIVERSITY OF SANTANDER</td>
<td>5</td>
</tr>
<tr>
<td>SERINPET LTDA REPRESENTACIONES Y SERVICIOS DE PETRÓLEOS</td>
<td>5</td>
</tr>
<tr>
<td>CASTRO PULIDO HERIBERTO</td>
<td>5</td>
</tr>
</tbody>
</table>

*Source: Data provided to the OECD by the SIC in July 2013.*

9. **IP awareness and capacity-building initiatives should focus on national actors with the strongest potential for obtaining revenue-generating IP, as these can bring the highest pay-offs for the innovation system.**

Successful IP uptake will depend on realisation among businesses of the value that IP can offer them. IP offices in Colombia have engaged in awareness-raising campaigns to this effect; however, specifically targeted services that provide firms with advice on the IP most useful to them (as proposed by the project *Propiedad Intelectual Colombia*) can optimise their impact on innovation systems (Box 1). Such services should target first national actors with the greatest potential for useful contributions to innovation.
Box 1. Propiedad Intelectual Colombia

The project Propiedad Intelectual Colombia, funded by the IADB (USD 1.4 million) and Chambers of Commerce (USD 1.3 million), aims to foster the use of IP by micro, small and medium-sized Colombian firms. The project has a regional focus covering Antioquia, Bogotá, Cali, Cartagena and Barranquilla. The IADB via its Multilateral Investment Fund (FOMIN), the Chamber of Commerce of Medellin and the SIC jointly implement the project over an initial period of four years.

The project supports the development of simplified IP application procedures and online modules for trademarks and patent applications. It has also developed various tools to inform businesses about the strategic value of IP, with the aim of overturning the widespread view of IP as a purely legal tool of little value to businesses.

The project’s most ambitious service consists of providing specialised IP consulting services to around 400 companies, for which 150 national consultants have been trained. The process involves four steps. The first involves a detailed diagnostic of individual firms’ use and management of IP from the perspective of innovation. The second step comprises practical courses to support innovation, help companies identify sources of financing for innovation activities, and train firms about useful information provided by publicly available IP databases. The third step involves the development of recommendations, based on inventory of intellectual assets, for better management of a firm’s intangible assets. Finally, the fourth step takes the form of a concrete plan detailing which IP the firm should apply for, how to conduct enforcement, and what strategic priorities to set regarding IP.

Initial feedback from participating firms has been positive. However, further evaluation in the future could reveal which long-term benefits were derived from the project and, in particular, whether the training has provided firms with the opportunity to manage their IP effectively beyond the project’s support.

Source: Presentation at one-day workshop in Medellín as part of an OECD mission to Colombia, www.propiedadintelectualcolombia.com/site/.

10. Colombia should support “technology screening” services that help firms and universities to take advantage of information on technologies contained in national and international IP application documents in support of research with higher potential economic payoffs.

Using information provided by nationally and internationally registered IP more systematically can strengthen efforts aimed at obtaining revenue-generating IP. Institutions such as TECNNOVA, which provide technology-screening services, are useful to orient research from the outset towards the highest possible future rewards. They play a crucial role in “catching-up” by allowing researchers to access the state of the art rather than replicating work that already exists. Continued efforts by the SIC to provide easy online access to IP information and technology information services for users are also helping to take better advantage of IP information.

11. Colombia should continue efforts to support GIs by investing in building associations for selected high-potential GIs, rather than expanding the number of GIs.

GIs and trademarks can usefully assist not only Colombia’s coffee producers, but also its handicraft workers, and in this way can support marginalised groups. Colombia’s “Juan Valdez” (Box 2) is a local example that has demonstrated the potential benefits from GIs, but replicating its example has proved challenging in spite of the increase in number of Colombian GIs. This is due to a lack of associations capable of ensuring product quality and of GI marketing to reap commercial benefits. Policy has to address these issues.
Box 2. Juan Valdez

Perhaps the most successful case of IP use in Colombia relates to the careful and strategic use of IP by the Colombian Coffee Federation (FNC). Starting in the 1950s, this strategy successfully differentiated and added value to one of the country’s most important products, through the use of certification marks, trademarks and GI.

During the 1950s coffee prices plummeted due to an excess supply on the world market. In response, the FNC started a campaign to differentiate Colombian coffee by creating Juan Valdez®, the image of an archetypical Colombian coffee grower with a traditional hat and a faithful mule, carefully growing coffee in the Colombian mountains. Origin awareness and demand for Colombian coffee increased from 4% in the United States in the 1950s to 91% in Canada, Spain and the United States in 2004. Since its creation, Juan Valdez coffee has existed at a premium of 20% over other coffees worldwide. In 2005, “Café de Colombia” became the first non-European product to be a protected geographical indication under the European Union system.

To obtain a license to use the Juan Valdez trademark, the product must consist of 100% Colombian coffee and meet quality standards stipulated by the FNC. The FNC has made extensive investments in R&D and training programmes to ensure this quality mark. In particular, it had to invest considerably in appropriate technology to ensure that the coffee marketed worldwide as Colombian is indeed 100% Colombian.


12. In order to create opportunities for economic development based on its biodiversity, Colombia should not only focus on ownership rights and access conditions, but should also seek to support the development of a sufficiently articulated domestic industry capable of exploiting those opportunities.

Colombia’s biodiversity provides additional important opportunities for inclusive economic development across various regions. These opportunities are recognised by the National Development Plan 2010-2014. With the legal framework regarding access to genetic resources in place, Colombia has to develop a sufficiently articulated domestic industry capable of exploiting such potential. The Colombian National Economic and Social Policy Council’s (CONPES) document 3697 (2011) explicitly acknowledges the need for a wider policy approach to develop economic opportunities based on the country’s biodiversity and should be actively pursued, taking advantage of existing research capacities.

13. It is useful to consider how policy can support the use of IP in sectors where Colombia has comparative strengths, including extractive industries.

Such support could take the form of networks, which would seek to expand the capacities of smaller players in those sectors to take advantage of IP and develop innovation capacities on their basis.

14. Colombia’s IP policy should not only focus on patents, but also, depending on the business activity, on trademarks, design and utility models. Colombia should address the weak use of utility models.

While patents play a crucial role supporting innovations, other types of IP can contribute meaningfully to innovation performance. Since they set a lower bar than patents, these other types of IP provide opportunities for a wider group of innovators in Colombia, including across the country’s different regions. Such an approach will help IP systems to support current regional S&T capacity-building efforts. At present, use of trademarks in Colombia is weak compared to other countries in the region. Promoting their use among firms can potentially support quality improvements in different sectors.
Use of utility models by residents is also limited in Colombia (Figure 5), whereas in other upper middle-income countries, such as Thailand, utility model applications outnumber those for patents. This should be investigated as utility models play a critical role in catching-up stages of development. Utility models currently provide a more affordable fee compared to patents and, with recent reductions in backlogs, are processed within a reasonable and shorter timeframe. The low use of utility models among local entities might be a reflection of long processing times in the recent past. If uptake does not rise, however, other factors such as limited awareness among potential users of the potential value of utility models might be a constraining factor. The novelty requirement applied is also worth investigating.

**Figure 5. Resident utility model applications for selected IP offices, 2011***

![Bar chart showing utility model applications for selected IP offices, 2011](image)

*Note: *2010 is displayed in parenthesis when different from 2011. The number displayed in square brackets represents a ranking of the number of applications out of 55 offices for which data are available.


**15. Opportunities for filing and exploiting IP abroad for some leading inventions should be supported further, as this can encourage funding (foreign income and capital) to support innovation in Colombia.**

To date, only Colombian residents have filed only a handful of applications at the three major IP offices, the European Patent Office (EPO), the United States Patent and Trademark Office (USPTO) and the Japan Patent Office (JPO), while most applications were filed at USPTO (Figure 6). PCT applications are moderately similar to those deposited by nationals of regional neighbours, although much lower compared to those in Brazil and Mexico. Given the weaknesses of private
sector activities in innovation, foreign markets for IP might be particularly attractive outlets for some selected leading technical inventions. At present, Colombia has only limited experience with seeking foreign IP (Figure 6). However, with support more could be done to obtain IP abroad.

Figure 6. Patent applications by an applicant residing in Colombia at EPO, USPTO and JPO


16. Simplifying and shortening application procedures and accommodating concerns over sharing critical information about inventions in information requirements could heighten the impact of support schemes aimed at encouraging the use of IP.

Several policies are in place to support use of IP by national actors, including programmes offered by Colciencias. However, users note that the procedures take a long time with the result that the technology may be outdated by the time a decision is taken. Several potential users of such grant schemes stated that requirements on information were sometimes problematic since some require the disclosure of substantial information regarding inventions, which they are reluctant to share in the absence of IP protection. Such rigour in the support-granting process is understandable given governmental concerns over corruption in the use of public funds. Yet, the overall effect can reduce the desired impacts of grant schemes by failing to attract potentially valuable projects. This needs to be addressed by designing simpler but also rigorous processes.
3. Study of Indonesia’s national intellectual property system

Indonesia’s policy makers recognise the importance of the IP system and have begun implementing multiple policy initiatives to strengthen the role that IP plays for Indonesia’s research organisations and businesses. This report on Indonesia’s IP system contributes to these initiatives.

Implications of Indonesia’s socio-economic and innovation context for IP policy

Indonesia is the fourth most populated country in the world with 237 million inhabitants. Its GDP places it among the top 20 countries in the world. In 2001-12, a timeframe which includes the Global Financial Crisis, the country’s average annual growth rate was 4.3%, compared to a much lower average of less than 1% for OECD countries during the same 11-year period. Moreover, its growing domestic market and solid base in one of the world’s most dynamic regions offers many opportunities for further growth. This, however, requires addressing a series of challenges, including huge infrastructure gaps, substantial pockets of poverty, and a weakly articulated and poorly performing innovation system (OECD, 2013). Table 4 provides a summary of the strengths, weaknesses, opportunities and threats of Indonesia’s innovation system.

The socio-economic context of Indonesia and the characteristics of its innovation system are crucial to the capacity of IP to support innovation in the country, as the following points make clear:

- Southeast Asia is one of the world’s most dynamic regions, exceeded only by East Asia. Europe, Latin America and North America have lagged behind, especially since the onset of the Global Financial Crisis. Indonesia’s recent growth experience follows this dynamic, regional trend, while its huge, growing domestic market offers significant opportunities for future national growth (Oberman et al., 2012). This performance will continue to attract foreign companies to the Indonesian market and, thus, provide opportunities to draw on their technological expertise (e.g. by seeking licensing arrangements). However, incentives for foreign companies to engage in transfers will depend on their perception of the local IP system and the level of legal certainty it offers them.
While innovation has played little role to date in Indonesia’s growth, there has been an improved contribution of total factor productivity (TFP) to output growth. In addition, there are indigenous pockets of concentrated S&T and R&D expertise, especially in the public sector where most expenditure on research occurs. A small number of well-known universities produce qualified scientists and conduct research in an expanding higher education sector, while in the private sector a small cadre of innovation-oriented companies have grown to appreciate the benefits of innovation. A key implication for IP support policies, particularly those based on patents, is that a focus on leading public research institutions offers greater opportunities for success in Indonesia. This will also require engaging with private actors for commercialisation. Given the weaknesses of established private sector activities in innovation, commercialisation of the most advanced technical inventions produced by public research institutions should go hand-in-hand with entrepreneurship policy (e.g. science parks), and might sometimes target foreign markets.
• Indonesia is very slowly moving away from a low technology base with declining exports of high-technology products and an increasing reliance on imports of these goods. Many private sector actors in low-technology manufacturing and services have, to date, only been modestly engaged in innovation activities and very few are involved in technology-based innovations. This means that patents will not be attainable for many actors in Indonesia’s innovation system, as they lack the needed research capacity. However, this is less the case for utility models, design rights and trademarks.

• Poverty and inequality are key challenges for Indonesia. Given that the informal sector in Indonesia employed 68% of the population in 2009, the question of how to integrate the contributions of this sector, which are commonly excluded from innovation, cannot be easily dismissed. While IP policies are not a solution to poverty and inequality, addressing these challenges can be facilitated by mobilising IP, which offers potential opportunities for innovators in informal and traditional sectors.

• Several forms of market failure affect innovation performance in Indonesia: weak infrastructure, bureaucratic inefficiencies and limited access to capital for innovation. While IP can provide powerful incentives, in practice, incentives are provided to inventors who have successfully commercialised products. This translates into IP systems that only provide innovation to those less affected by market failures, such as large companies, unless complementary policies are used to address market failures. It is important, therefore, to focus on how IP support policies can ensure benefits for “catching-up” firms.

• Indonesia has multiple traditional industries and a rich repository of traditional knowledge, some of which (e.g. bhatik, handmade furniture and traditional medicines) can offer opportunities for developing innovative markets with additional opportunities on international markets. Developing these industries can also provide opportunities for a more inclusive development strategy in Indonesia. IP policy needs to focus on the requirements of these sectors, as well as on potential challenges they might face in their development.

**Key recommendations for Indonesia**

**Main lines of policy action**

Indonesia’s IP rights system has to be complemented by other innovation policies to boost Indonesia’s innovation policy. However, reform of current IP policies could strengthen the innovation system.

Regarding operation of the IP system, efforts aimed at automating procedures to increase the processing efficiency of IP applications should be a priority, as lengthy delays weaken incentives. The new Arbitration and Mediation Agency created in 2012 is a positive step towards reducing enforcement costs and requires the necessary political support to ensure its success. Policy steps also have to be taken to avoid the potential exclusion of smaller entities, as well as businesses in remote geographic areas, because of barriers of access to the IP system. Such steps can involve differential pricing strategies and the provision of online services. Figure 7 summarises challenges Indonesia faces regarding IP operations and procedures.
Policies should also encourage the use of IP by national actors, including the launch of IP awareness and capacity-building initiatives. They should also focus on those actors with the greatest potential for earning revenue-generating IP, as this will ultimately generate the highest payoffs to the country’s innovation system. Incentive schemes should give researchers a stake in the returns from their inventions, by rewarding most those who commercialise inventions with high industrial applicability. This requires resolving legal uncertainties regarding the licensing of IP generated from public funding sources. Since obtaining IP alone does not generate value unless it leads to innovations, Indonesia’s IP policy should take further complementary steps to support their commercialisation.

It is worth emphasising that a different mix of IP compared to that of OECD countries would serve Indonesia best. Trademarks, design rights and utility models will better serve a larger group of innovators, since only a small number have the capacity to seek patents. Embracing “new” types of IP, such as traditional knowledge, genetic resources, folklore and geographical indications (GIs), will be attractive for Indonesia, but these need to be used to generate value if they are to serve the innovation system. IP in agriculture is another priority and should be explored and developed much further. In addition, some leading research institutions should examine the opportunities of IP abroad, as foreign markets can provide higher returns for Indonesian inventions, especially as domestic markets for IP are weak.

To achieve these objectives, the country’s IP policy has to undertake a more coherent approach involving the various actors of Indonesia’s innovation governance system, particularly if the system is to support innovation performance. Indonesia can also further optimise its innovation and IP policies by sharing IP best practices with other countries.
Specific recommendations

Connecting IP policies to innovation policies

1. IP can be a powerful support to Indonesia’s innovation system, but implementation of complementary policies is crucial to strengthen innovation performance.

Low levels of R&D investment indicate that inputs into innovation activities are still limited. Accordingly, the ability of Indonesia’s IP system to generate patentable inventions is low, as are the stock of human capital and level of industrial specialisation. Figure 2 above illustrates the relatively high ratio of resident patent applications to R&D expenditures, above the level expected from a linear trend based on performance of all countries (with available data). While the IP system itself can provide incentives for more R&D, a variety of weaknesses in Indonesia’s innovation system, such as shortcomings in human capital and weak linkages among actors of the system, require attention to boost research capacities to enable IP. In addition, several interviewees reported that some research was not of sufficient quality to obtain a patent. This is not to say that Indonesia’s IP system cannot play an important role but rather that other innovation policies are needed with IP policies to play a complementary but not exclusive role.

2. Indonesia’s IP policy should emphasize effective co-operation with the actors in Indonesia’s innovation governance system with an explicit focus on innovation and high-level policy support.

Several policy actors in Indonesia’s IP system have increased efforts to foster IP awareness and uptake through policies implemented to support innovation. However, one major policy challenge is weak co-ordination among agencies. The only formal instance of inter-ministerial co-ordination in Indonesia is the Task Force for IP Enforcement. The Task Force focuses mostly on enforcement, but not on co-ordinating IP support policies for innovation implemented by different ministries. Given the wide variety of ministries who conduct innovation policies, co-ordination of their activities would lead to a more coherent approach to IP policy. The creation of an IP co-ordination body with an explicit focus on innovation to complement the activities of the Task Force should therefore be considered. This would create a governance structure for IP matters more suitable to fostering the contributions of Indonesia’s IP system to innovation. High-level policy support is critical to effectively introduce such change.

3. Additional efforts aimed at increasing exchanges on IP policy with experienced policy makers and country experts can help enhance policy impacts.

Efforts to optimise innovation and IP policy pose challenges for Indonesia. The country could benefit substantially from sharing best practices with other economies, especially those with a similar model of development. These can help to inform policy choices and enrich IP-relevant training opportunities for government officials and practitioners at various stages of the IP process. Learning from the mistakes of others will allow Indonesia to improve the implementation of IP-based innovation policies, and avoid approaches proven to be inefficient. In addition, the country could strengthen co-operation by adopting a stronger, tighter focus regarding the kind of support it seeks from abroad. In general, it should concentrate on the larger questions of innovation, rather than on purely procedural aspects.
Legal and administrative conditions of IP systems

4. Indonesia can increase the efficiency of IP application handling by prioritising automation. The quality of the examination process should also be improved.

Users of the Indonesian IP system have experienced significant delays in the processing of patent applications. Such administrative inefficiency can discourage IP applications and slow down the commercialisation of IP. Automating processes can be of substantial help in this respect, taking advantage of opportunities provided by information and communication technologies (ICTs). The World Intellectual Property Organisation (WIPO) has assisted Indonesia’s IP Office with these efforts.

The quality of examination processes is similarly critical to IP systems operations. The publication of examination manuals to standardise and improve the quality of processes sends a positive signal to users that their patent applications will be dealt with objectively.

5. The new Arbitration and Mediation Agency created in 2012 must receive the necessary policy support to operate effectively and support the IP system.

Enforcement of IP rights is a challenge in Indonesia. Litigation processes are often lengthy and costly particularly for smaller firms. The inability to enforce IP rights also effectively reduces the perceived value of IP for Indonesian firms. The creation of the Arbitration and Mediation Agency in 2012 is a useful approach to address this problem, but the new agency will require policy support and adequate resources and capacities if it is to operate effectively.

Adapting IP systems to users

6. Expanding the provision of online and local IP services would help attract new users from regions other than Jakarta.

The majority of IP services are available in the metropolitan area of Jakarta. Users outside the area, though, have to cope with infrastructure shortcomings, which raise transportation costs. Expanding online services is an attractive solution for reducing both regional barriers to IP access and application costs for users not located in Jakarta. However, online services work less well as a means of attracting new users to the IP system. In such cases, a better option is greater availability of local services to orient new users to the system. These could be organised in co-operation with regional business associations.

7. Focusing IP awareness and capacity-building initiatives on national actors with the strongest potential for obtaining revenue-generating IP can bring the highest payoffs for Indonesia’s innovation system.

There is a widespread lack of awareness among national actors in Indonesia’s innovation system regarding the potential value and payoffs of obtaining IP. Policy makers from various institutions involved in IP policy have identified this as a major shortcoming. Awareness-raising initiatives are implemented by a variety of actors, including DGIPR, the Indonesian Ministry of Science and Technology (RISTEK), research institutes and universities, and various ministries. Together, this probably represents the largest share of expenditure on policies aimed at supporting the use of IP. While these initiatives play a valuable role in
support of the IP system, prioritising target groups, starting with national actors with the greatest potential for innovation, would optimise the impact on innovation systems. This is the more so important as public resources available to support national actors are limited. Notably, these initiatives could target pockets of leading inventive capacities, especially in activities where IP is critical, such as pharmaceuticals and chemicals for patents. Such support need not necessarily be confined to frontier sectors: another possibility consists of targeting the use of trademarks and other relevant IP among traditional industries with innovation potential, such as bhatik producers. To facilitate uptake, consultancy services can help firms identify how to apply IP to their specific context. By taking this approach, rather than offering generic advice, consultants can foster uptake among potential users with only limited prior exposure to IP.

8. **Indonesia has to adopt a scheme whereby public sector researchers receive a share of returns from their inventions. Resolving the current legal uncertainty about licensing of IP generated from public funding sources should be made a priority.**

The vast majority of leading research in Indonesia is conducted at public research institutions. The leading IP users are thus more likely to come from these institutes. However, a major sticking point concerns the incentives these researchers receive for obtaining and generating revenue from their IP. Currently, public institutions are not legally allowed to reward their researchers with shares in the royalties from any IP they create because of a lack of regulations. The only rewards researchers can expect are minor enhancements to their academic careers, making IP far less attractive than other activities with higher returns such as publications. The short-term budgetary allocations for research projects received by research institutions create additional disincentives for commercialisation. To transform inventions into commercial products requires a long-term commitment from researchers, whose inputs are often essential for success. This lack of resources on top of limited opportunities creates an additional disincentive.

9. **Indonesia’s IP incentive policy has to shift away from a “quantity” approach towards a “quality” approach, as the current focus on quantity generates effects that are counterproductive to strengthening the IP and innovation systems.**

Valuable policy efforts in Indonesia have invested in supporting the IP registrations of national actors. However, a more sophisticated incentive structure is required, as many current programmes provide support and rewards for patent applications regardless of the chances of obtaining IP. These programmes also provide no additional rewards for innovations that reach the commercialisation stage. This approach potentially encourages a proliferation of bad-quality patent applications, rather than patent applications with potential to serve innovation. It also increases the amount of applications the IP office has to process and, consequently, the amount of human and financial resources. Policy incentive schemes that provide bigger rewards for granted patents and additional rewards for their commercialisation would be more effective in support of innovation. This includes, for example, incentive schemes that offer matching funds against patent titles to allow national actors to commercialise their patents.
10. Indonesia’s IP policy should take further complementary steps to support the commercialisation of inventions by public research institutes. It should provide support for shared TTOs and replicate successful commercialisation experiences in other national institutions.

The number of granted IP rights is an indication of successful inventive capacities, but not necessarily of successful innovation performance. This requires an additional step – the commercialisation of IP. However, multiple obstacles can hamper licensing or exploitation of IP, particularly from public research institutes and universities in Indonesia. Finding suitable partners to commercialise inventions is also complex, as the country’s institutions have only limited experience in this area. Technology transfer offices (TTOs) can play a critical role here, although only a few offices currently address these tasks well. This is also because sustainable business models are difficult to develop with incipient patenting activities. Shared TTO services among several institutions could help to realise economies of scale and provide a better service in support of commercialisation.

Moreover, policy could provide support to other research institutes with IP suitable for licensing or commercialisation, replicating the example of the Indonesian Agricultural Research and Development Institute for Agricultural Technology Transfer, which effectively handles the entire process required for commercial application of inventions. In so doing, these institutions can more easily obtain returns from their IP (Box 3).

---

**Box 3. Indonesian Agricultural Research and Development Institute for Agricultural Technology Transfer**

The Agricultural Research and Development Institute for Agricultural Technology Transfer, an agency under the Ministry of Agriculture, has gathered experience in licensing their research results and generating revenue for the government via the Ministry of Finance. Since 2007, the agency has produced 683 licenses including 68 licenses in 2012. The majority of licensees are national industries, but some are foreign licensees, and some products produced under the license are exported.

The Agricultural Research and Development Institute operates 64 units across the country with more than 3,000 researchers. The main IP handled by the Agency for Technology Transfer are process patents, plant variety patents, and simple patents in the area of agriculture such as fertilisers and pesticides. The Agency has 43 staff divided into small groups of three to four staff. Each group undertakes the four following activities: i) evaluation of technology produced by their researchers; ii) drafting and registering the invention at the DGIPR or the Ministry of Agriculture; iii) promotion of technology for outside users (i.e. potential licensees); and iv) licensing out of technology. The Agency has fully incorporated all steps needed to support IP for innovation in its operations. In order to foster the commercialisation of technologies, the Agency has created a database of technologies, which is available to the public. The Agency also publishes a yearbook of new technology and organise regular meetings. Moreover, it conducts impact analyses of its innovations whether they were commercially exploited while others were introduced for non-commercial purposes.

One challenge for the Agency is uncertainty regarding commercialisation. Some technologies are unstable and not yet suitable for manufacturing. The licensees have to make modifications before it can be commercially exploited. They also have to undertake testing while customising the technology, often leading to a heavy financial burden. As a result, some go out of business due to the failure of customisation. Beginning next year, the TTO plans to create a “customisation” phase before licensing out technology inside the Agency. This approach is modelled on successful applications carried out by Brazilian Embrapa, which incorporates a customisation phase into its processes.

*Source:* OECD based on interview phase in Indonesia and Indonesian Agency for Agricultural Research and Development Institute for Agricultural Technology Transfer, Ministry of Agriculture.
11. **Indonesian IP policies aimed at helping small companies should be complemented by policies supporting these firms’ capacity to innovate.**

Assistant provided to small companies to obtain trademarks can encourage them to invest in quality improvements in products and services and, thus, create an environment supportive of innovation. However, substantial investments in marketing and good quality products are also needed. Moreover, if market constraints, such as lack of access to finance, prevent firms from upgrading product quality, then complementary support will be necessary to facilitate those investments. Industry associations could play a meaningful role in providing targeted services to help SMEs build up their capacities and support for collective trademarks, which are essential for traditional industries.

12. **IP policy should further support technology-screening services that help firms and universities take advantage of information on technologies contained in national and international IP application documents.**

IP titles are a valuable source of information regarding potential fields for profitable inventions. Screening IP at the onset of research ventures can be critical to channel investments towards the most revenue-generating types of IP avoiding investments that have low potential for success. Tapping into pioneering knowledge from abroad can also support national research steps and help avoid duplication. It can also empower national actors by allowing them to understand claims held by others operating in their industry both nationally and internationally. Such strategic uses of IP are incipient in Indonesia and support would be beneficial, specifically at institutions and companies where research capacities could clearly apply such knowledge and where IP is an important element, such as pharmaceuticals and chemicals.

13. **IP related to traditional knowledge, genetic resources, folklore and GI is particularly relevant for Indonesia. Policy should encourage communities to generate economic value based on their assets, as these uses will bring the biggest payoffs.**

IP related to traditional knowledge, genetic resources, folklore and GI, has received substantial policy attention in Indonesia. There are multiple reasons why Indonesian policy makers are justified in their focus on these. Compared to other economic activities where foreign competitors often have leading positions, these activities provide a potential market advantage, aside from the ethical and social importance of IP protection. For instance, traditional medicines such as Javanese “jamu” have given local pharmaceutical companies an opportunity to engage in research on internationally “patentable standards”. Furthermore, obtaining these potentially “lower-hanging fruits” does not require the same technical expertise required for research-leadership patents, given the novelty requirement of such patents and the foreign competition.

In addition, the new forms of IP may constitute a potentially valuable asset for socio-economic groups, including disadvantaged communities. GI, for example, rewards certain regional products. In this respect, current efforts aimed at creating a comprehensive database to document Indonesia’s traditional knowledge are worthwhile. They might also offer an opportunity for entrepreneurs to create innovations based on such ownership. In the case of GI, substantial communal
investment by effective collective associations will be needed to ensure product quality and to support marketing for payoffs. Focusing on a few GIs but providing them with sufficient support offers a greater chance of success than attempting to create many GIs.

14. Depending on the activity, trademarks, design and utility models can involve a larger group of innovators. Therefore, Indonesia should address the weak use of utility models. Unregistered design rights can also be a way to support SMEs in fast-moving industries such as fashion. Moreover, exploring opportunities for IP in agriculture should be a priority.

The vast majority of applications for Indonesian patents are non-residents. The share of Indonesian resident applications has, however, increased since 2005. Indonesia’s performance in absolute terms is rather weak, even compared to much smaller regional competitors (Figure 9). While patents are crucial to support innovation, other types of IP can contribute meaningfully to innovation performance.

Figure 9. Resident patent applications for selected ASEAN IP offices

![Graph showing resident patent applications for selected ASEAN IP offices](http://ipstatsdb.wipo.org/ipstats/patentsSearch; JETRO, www.jetro.go.jp/theme/ip/data/pdf/stats_idn01.pdf)

Many other types set a lower bar than patents and thus provide opportunities for a wider group of innovators. IP support policies in Indonesia should therefore pay more attention to fostering their use. Utility models, in particular, are weakly used in spite of the size of Indonesia’s industry. The utility model-to-patent ratio is very low compared to neighbouring countries such as the Philippines or Thailand, where usage surpasses that of patents. This indicates that many groups of

innovators that lack the capacities to file for patents have opted for utility models as means to obtain IP. Indonesian innovators have not done so, possibly because of legal and administrative conditions of the IP system or because of the country’s industrial structure. It is important to ascertain the exact reasons, as utility models could play a critical role in catching-up on development.

The importance of agriculture for rural populations underlines the need to support innovation in this sector. Existing research capacities and advanced technology transfer capacities should be exploited further to develop a model similar to that of Brazil’s Embrapa. This requires taking steps to facilitate commercialisation, such as engaging in testing and customisation of technologies for potential licensees. Commercialisation needs to be strongly supported for both private and public inventors.

15. Opportunities to file and exploit IP abroad for some leading inventions should be supported further, since this can raise resources (foreign income and capital) to support innovation in Indonesia.

Given the weaknesses of private sector activities in innovation, foreign markets for IP might be particularly attractive outlets for selected leading technical inventions, including those produced by the country’s best public research institutions. So far, Indonesia has only very limited experience with seeking foreign IP, however, further support would enable more to be done. Success will depend on developing adequate strategies to compete successfully in contested international markets. This will require screening of technological trends and market developments as part of the product development process, including by exploiting information provided by national and international IP application files.

References


SIC (2012), Propiedad Industrial 2020, SIC, Bogotá.
