



## **Boosting research and development capacity? Towards the protection of intellectual property rights in developing countries**

Researchers in Colombia and six countries belonging to the Economic and Monetary Community of Central Africa (CEMAC) have become better able to protect their intellectual property rights following the recent completion of a three-year project that was funded by the Geneva International Academic Network (GIAN) and coordinated by the World Intellectual Property Organization (WIPO). As part of the project an intellectual property (IP) 'hub' has been created in both regions to help protect, own and commercialise research findings through the use of patents and other types of IP. In separate, but related moves, WIPO member states have recently approved a new development-oriented agenda that places more emphasis on the IP needs of developing countries, and Angola has joined the Patent Cooperation Treaty, which allows participating countries to file international patents. What are the details of these initiatives? Which IP-related difficulties do developing countries face, and in which ways might the protection of IP rights help developing countries to achieve socio-economic progress?

Professionals from 12 research institutes in Colombia and scientists from 22 health and medical research institutes in Cameroon, the Central African Republic, Chad, Equatorial Guinea, Gabon and the Republic of Congo have benefited from a three-year project to build intellectual property 'hubs' (one in Columbia and one in central Africa) through which they share resources to process patent applications and commercialise their research outcomes. Initiated in 2004, the project was funded by the Geneva International Academic Network (GIAN), and co-ordinated by the World Intellectual Property Organization (WIPO, a United Nations Agency), in partnership with six Swiss research institutions and networks. Aimed at developing local expertise to help address IP-related challenges faced by health institutes in developing countries, the 'hubs' are designed to provide advice and support in drafting patent applications, licensing IP, technology transfer, and the management and marketing of health research. The 'hubs' also provide shared training and support on how to attract and negotiate funding and guidance on the development of public-private partnerships.

The 'hub'-provided IP support is expected to lead to larger social-economic returns from research and development (R&D) investments made by developing countries, boost the development of much needed therapies in battles against widespread diseases, and help stem the loss of valuable human resources from developing countries. According to Mr. Randall Harbour, Executive Secretary of GIAN, "it is to be expected that in the middle and long-term the implementation of the WIPO-GIAN model by developing countries will facilitate local development, production and distribution of medicines based on both conventional approaches and traditional medicine. (...) In addition to supporting researchers from developing countries with patent applications, the IT 'hubs' can assist them in establishing well thought-out and fair legal frameworks with research institutions in industrialised countries".

Since the two IP 'hubs' began supporting their regional R&D networks in January 2007, over 130 local scientists, lawyers and research institute managers have been trained to protect, manage and capitalise on their research results, and more than 1,600 scientists and university managers have attended workshops on IP and patent issues. So far, the project has led to a Gabonese research institute filing patents for cancer-fighting extracts derived from vegetables, and four more patent applications from other African countries are expected soon. In Colombia too, one patent has been filed, whilst five additional patent applications are currently being drafted.

The IP 'hub' programme appears to be a welcome initiative because according to a study carried out by the Institute for International Economics, owners of patents in developing countries are predominantly foreign. Moreover, recent [figures](#) from the US Patent and Trademark Office show that in 2006, less than 1% of US patents were granted to applicants from developing countries, nearly 77% of which came from eight of the more technologically advanced developing countries, including Argentina, Brazil, Egypt, Kenya, Malaysia, Mexico, Morocco, and South Africa. This situation is largely due to the fact that scientists in developing countries often do not have the resources to protect their research results and commercially exploit them, but a lack of comprehensive IP-related policies in R&D institutions within the developing world is also a contributory factor. In the area of health, for instance, whilst many of the population in developing regions are unable to afford the medicines they need, developing countries currently receive little economic return on their R&D investments, and consequently, necessary improvements in health have been constrained. The lack of IP ownership over research results has also made it difficult for research institutes located in developing countries to reach technology transfer agreements with developed countries because they do not have any tradable assets to exchange, and are therefore in a weak negotiating position. In consequence, developing countries may not only be discouraged from investing in research to solve pressing health and food-related problems, but it may also be harder for their R&D institutions to attract and retain talented scientists. By taking concrete steps to help scientists from the developing world to improve their research capacity and benefit more directly from the results, the WIPO-GIAN project has attempted to reverse this situation.

The IP 'hub' model initiative has recently been complemented by WIPO's new development-oriented agenda, an idea that was originally suggested by the organisation's member states Argentina and Brazil, and which includes 45 proposals designed to strengthen economic advancement in developing countries by improving IP arrangements. In addition to initiatives to ensure that developing states benefit from technology transfer and dissemination, these proposals include the promotion of scientific co-operation between research institutions in developing and developed countries.

In a separate, but related move, Angola has recently joined the international [Patent Cooperation Treaty](#) (PCT), an agreement which helps participating countries to simultaneously seek patent protection for an invention in a large number of countries. Membership of the Treaty, in force since 1978, allows national patent offices to minimise patent search and examination tasks, and residents in signatory states to apply for a patent at a relatively low cost (residents in developing countries receive a 75% reduction in all PCT fees). A patent office in the developed world then carries out an investigation to assess the likely merits of the patent application, before researchers incur significant expenses. Like the new WIPO-GIAN IP 'hubs', the Treaty thus offers participating countries the opportunity to share relatively expensive IP resources, thereby leading to substantial cost-savings. However, whilst over 50 of the PCT's current 138 'contracting states' are located in developing countries, African states have been slow to sign up to the Treaty, as it requires signatories to have a comprehensive regulatory and legislative framework in place. Compared to PCT stipulations, therefore, the requirements of the WIPO-GIAN project appear to be more lenient as the IP 'hubs' are aimed at supporting research institutes as they develop, implement and manage IP regulations.

The impetus for national policy changes in IP normally comes from international agreements to which the country is signatory, without necessarily having a coherent idea of how they can be implemented nationally. Many developing countries have signed up to the World Trade Organisation's [Agreement of Trade-Related Aspects of Intellectual Property Rights](#) (TRIPS), which was introduced in 1994 to protect IP rights around the world and bring them under common international rules. The agreement established minimum levels of protection that each WTO member government must provide for the IP of fellow members. Yet whilst many developing countries have already amended their national legislation to comply with the TRIPS Agreement, several analysts in the developing world argue that such IP agreements hinder the progress of local industries and are likely to benefit industrialised countries only.

According to a [report](#) (2002) published by the British Government-appointed Commission on Intellectual Property Rights (CIPR), for developing states, building 'home-grown' technological capacity is a key determinant of economic growth and poverty reduction because it enables

countries to develop their own process of technological innovation and effectively adapt technologies that have been developed abroad. Building domestic R&D capacity requires a high-quality tertiary education system and a network of supporting institutions and legal structures. The CIPR report further argues that in those developing countries which have acquired significant technological and innovative capabilities, such as India, South Korea and Taiwan, an important element in building their indigenous capacity was the use of weak forms of IP protection. As these countries were able to tailor these weaker forms of IP protection to their own industrial policy objectives in the early formative stage of their economic development, they could experiment with new products and learn from testing them in new contexts, thereby developing innovative capacity. The CIPR report claims, therefore, that most low-income countries with a weak scientific infrastructure are more likely to benefit from weak IP protection, whereas technologically advanced developing countries may achieve scientific growth by implementing stronger IP protection, such as that provided by the TRIPS agreement.

If IPRs are to benefit developing countries, therefore, they will likely need to promote invention and technological innovation, thereby enhancing growth. In order for that to happen, developing countries would be wise to consider the fact that international agreements do not necessarily take into account their domestic interests, and to identify and support a strategy which promotes flexibility in international standards. By pushing forward economic development, IP 'hubs' appear to present a method for doing so.

Another option for developing countries is to become a member of a regional IP system, such as the [Eurasian Patent Organization](#), the [African Regional Industrial Property Organization](#) (ARIPO), which is aimed at pooling together financial and human resources and promote the development and harmonisation of national industrial property laws in its 16 member countries, and the [African Intellectual Property Organization](#) (OAPI), which has 16 Francophone member states. The four countries of the Andean Pact (Bolivia, Colombia, Ecuador and Peru) have also developed common IP legislation. Whilst regional cooperation offers advantages for developing countries in that they can share IP administration and reduce costs, their national governments still need to set IP policies that fit their domestic economic circumstance. Regional organisations, therefore, may complement, rather than wholly replace, effective national IP infrastructures. Developing countries need to weigh the advantages and disadvantages of regional and international cooperation and choose the patent regime that is best suited to their national context.

If carefully designed, IP support may lead to socio-economic advancement in developing countries. Economically advanced developing countries with absent or weak IP rights are liable to remain technologically isolated and increasingly lag behind cutting-edge research developments. Such economies emphasise benefiting from the technical advances of other countries, a strategy that has short-run competitive advantages, but in the longer term suffers from inadequate access to new technology and a growing inability to develop local strategies for fostering R&D. For this reason, initiatives to build capacity in developing countries to protect IP rights appear to be a promising development. If sustainable and successful, the WIPO-GIAN IP 'hub' model could be used by a wider range of developing countries as a strategy to support their universities and research centres. However, whilst IP support can contribute to economic development, social-economic advancement of individual countries will also depend on the willingness of national leaders to prioritise R&D. In this respect, many countries in Africa have a long road ahead of them, as most African governments still have to transform their political pledges into actions by developing a coherent R&D policy framework and increasing their investments in science and technology. Nonetheless, it is possible to be optimistic about the potential long-term impact of IP 'hubs' in developing countries, as long as states create IP regimes that enable them to increase their domestic technological capacity and surround their IPR frameworks with complementary growth-enhancing supplemental policies in research and development.