

NEWS FEATURE:

Lost in transition

Disputes over intellectual property rights can delay the spread of clean technologies to the developing world, but they are not wholly to blame.

Elisabeth Jeffries

When a court in India revoked twelve Enercon patents in 2011, managers at the German wind-turbine producer were outraged. A joint venture formed in the 1990s between Enercon and an Indian company had been making wind turbines in India before disagreements emerged in 2005. Management was denied access to financial and other information, and patents were challenged. By 2011, the company had lost protection over several patents, so competitors were in a position to copy elements of its technology.

Intellectual property rights (IPR) like these patents are sometimes blamed for delays in the spread of clean technologies. That, in turn, has prompted fears of severe damage to the climate. “Evidence suggests a mismatch between the urgency of climate challenges as set out by the Intergovernmental Panel on Climate Change and the time taken historically for technology systems to evolve under business-as-usual practices. Thus continuing to promote and advocate such approaches to facilitate technology development and transfer is essentially a recipe for a worldwide climate disaster,” declare the authors of a report by the Third World Network (TWN)¹ — a non-governmental organization (NGO) based in Malaysia — arguing against present IPR practices.

Cases like that of Enercon are of course only one side of the story. Many organizations from poorer countries find themselves at the sour end of IPR disputes. Baskut Tuncak, staff attorney at the Center for International Environmental Law (CIEL) in Washington DC, United States, draws attention to a case in the 1990s, which worked out against an Indian company. The manufacturer wanted a licence from a South Korean company to make hydrofluorocarbons, substances that replace ozone-depleting chlorofluorocarbons. “The technology was prohibitively expensive and they couldn’t reach an agreement.

The Indian manufacturer invented its own method using a synthetic route, but the process took five years,” he points out.

IPR means companies have to pay a licence fee if, for instance, they want to make a company’s product. Patents are valid for 20 years. Some organizations in poorer countries say that this cost creates a barrier to developing climate change technologies. Others in richer countries say that licence fees are an incentive to improve existing technology, but that losing IPR could put them off working in Brazil, Russia, India and China, and less developed economies. This itself could act as an obstacle. Making IPR provision compulsory in developing countries is one solution proposed to ensure that lower-income countries can access new technology, but this has not worked.

However, it is worth questioning whether holding the spotlight on IPR is valid. It is sometimes described as a major obstruction, which means that cutting-edge technologies like portable organic solar photovoltaics, light-emitting diodes and smart meters may dominate international climate change discussions. But for Stephen Karekezi, director of the non-governmental organization (NGO) Energy, Environment and Development Network for Africa (AFREPREN), these technologies are hardly relevant. Instead, basic renewable-energy technologies come top of the priority list. “A lot of technologies are available in the public domain...for the past 10–20 years our programmes have targeted simpler technologies but we’re a lonely voice, as 90% of the attention is on high tech,” he says.

Based in Nairobi, Kenya, AFREPREN supports the delivery of affordable and cleaner energy services for the poor in Africa. Kenya, he points out, has its own individual characteristics. “We are dependent on large-scale hydro, which makes us very vulnerable to climate change. Half of our power comes from hydro. We want to see more biomass, cogeneration (combined heat and power), micro-hydro, solar thermal and wind,” he says.

AFREPREN is, for the most part, not campaigning on cutting-edge technologies — it wants to see basic solar and wind systems in Kenya and other sub-Saharan countries with similar needs. “What we need is wind-powered water pumps, with which wind is directed to mechanically pump water. These are very good because they improve agricultural productivity and water-use potential. They have been used a lot in South Africa and Namibia. We also need solar water heaters. These are attractive because they avoid power consumption at peak times. They are widespread in Argentina and all over the Mediterranean and have been overtaken by new technologies in the European Union,” states Karekezi. Africa’s low irrigation acreage, he indicates, points to a strong demand for water-supply technologies too.

Karekezi therefore considers IPR a secondary issue. “It’s difficult to see why we in the developing world are so obsessed with intellectual property when we can exploit opportunities our own doorstep... people are spending too much time and effort on what is essentially not a central problem for sub-Saharan Africa, and that’s probably true of many least-developed countries (LDCs),” he says. Leadership from more developed countries is a likely explanation. “There’s a crucial difference between us and India and China, who are in a whole different ball game and fighting IPR. In sub-Saharan Africa there is no IP, and we won’t be exporting for the foreseeable future. The India and China debate is brought to all LDCs when it’s not relevant.”

Basic technologies are also a major requirement in Bangladesh, according to Colin McQuistan, Climate Change and Disaster Risk Reduction adviser at NGO Practical Action. McQuistan argues that new technologies matter less: “to accommodate huge [climate] uncertainties, innovation is important — not in the sense of new technologies, but innovations in processes or established technologies

applied in a new way". He draws attention to several effective measures against severe storms and floods. These include channels filled with concrete to protect ground water pumps from flood water by raising the pumps onto a platform a couple of metres off the ground, so that they become resistant to flood damage. The same can be done to latrines, preventing the spread of sewage during floods.

Innovation is incremental and adapted to existing structures. "Floating gardens are one innovation. You create a bamboo platform with soil and manure on it for planting crops. As the water rises, so the platforms rise. This works because a lot of crops are happy with waterlogged periods," explains McQuistan. Too much attention is paid to intellectual property on cereal seeds, he argues. "Technology is driven by markets like maize. But you need good linkages with traditional crops like plantain, which are not researched enough," he says.

The government in Bangladesh has also tried to encourage user-friendly tools like leaf colour charts in the agricultural sector. The colours on the chart indicate nitrogen levels, to help farmers to decide on how much fertilizer is needed by comparison with crop leaves, and prevent over-use of fertilizers.

But this programme flopped. More basic tools are not always quickly or easily taken up by people in the countries concerned, even though they may not require advanced knowledge or skills. Leaf colour charts were dropped because of mixed messages concerning the over-use of urea, a nitrogen-release fertilizer, and its cost. In Kenya, Stephen Karekezi notes a number of different barriers to the uptake of renewable-energy technologies, none of them related to intellectual property. "This is due to the attention of policy makers in our own country. The national energy budget is aimed at large-scale power plants, and the allocation to renewable energy is less than one per cent; that's where most of the problem lies," he says. A lack of suitable policies, such as building codes to introduce renewable-energy technologies, is another explanation.

IPR may present an obstacle in some countries and for some technologies, but it is irrelevant in others. "The fundamental technologies have been around for years. One needs to bring them in and allow the right conditions for them. That can enable countries to take technologies and become innovators themselves," comments Baskut Tuncak of CIEL. Patents themselves are not always a problem: "Patents are not automatically valid all over the world — only in the country where they have been filed. A large solar panel producer may choose to only file a patent in selected countries, such

as the country of invention, manufacture, use and expected sale, and other countries likely to be technically proficient enough to duplicate" he points out. Where obstacles from IPR do exist, local organizations can change tactics. "Even if there is a barrier to accessing renewable energy, you can shift to a different type as there's horizontal competition in this field," adds Tuncak.

As in previous policies, a new United Nations strategy and team — established to help improve technology transfer in developing countries — makes no explicit mention of the inflammatory issue of IPR. Known as the Technology Mechanism (TM), it first emerged at the UN COP16 talks in Cancun, started operating in 2012 and will consist of a technology executive committee and a technology centre and network (CTCN). The aim is to build a bridge to the use of climate adaptation and mitigation technologies for individual developing countries. The TM is still in skeletal form and is very distinct from previous efforts with some similar aims, such as the Clean Development Mechanism.

Holger Liptow, formerly with the German GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), provider of international cooperation services for sustainable development, explains: "the CTCN will help tackle issues in technology, to see what kind of capacity building is required and support countries in decision-making. The TM will assist in development of a strategic orientation including capacity building and North/South collaboration," he says. Its remit covers a wide range of issues that affect technology transfer, such as skills development and energy regulations. Unlike previous efforts to strategize technology transfer, there are embryonic plans to link the TM to a financial mechanism. This could provide funds to lower-income countries needing financial assistance on climate technology transfer where it is needed.

"Funds could go towards the cost of technology licensing where necessary. If a particular climate-related technology does require access to patented technology or trade secrets, then part of the whole financial package a developing country receives could go towards IP. It's in the interests of developed and developing countries to reduce the costs of IPR so that the money goes further," observes Baskut Tuncak. Money would be channelled to solve many different types of problems.

There may be good cause for managing IPR issues separately from other technology transfer problems. For one thing, they are more sensitive in the context of particular third- or fourth-generation solar, wind or other leading technologies. Secondly,

they tend to be more relevant to the more economically advanced countries in Asia or in Brazil. For instance, a 2012 report from the World Intellectual Property Organisation (WIPO) shows that China filed 24.6% of the world's patents in 2011². This compares with 23.5% for the United States. Most low income countries (a category that does not include China) did not file any.

Controversies over IPR have probably acted as obstructions to the spread of climate change technologies. The delay outlined in the TWN report may be due to the often conflicting agenda of developing and developed countries in relation to technology transfer generally. As David Ockwell and colleagues from the University of Sussex pointed out in 2010³, the richer countries approach low-carbon technology transfer from the point of view of technology diffusion. Lower-income countries, on the other hand, view it as an economic development issue. "The divide between the discourses of development and diffusion is central to the lack of agreement [on technology transfer] between developed and developing countries," they note.

It is not difficult to see why many developing countries raise objections on the basis of economic development. A dependence on older technologies may be counterproductive, as Mohammed Asaduzzaman of the Bangladesh Institute of Development Studies asserts: "cheaper power generation technology was sold to the government here, which had no IPR over it. But in the long run it has turned out costlier and difficult to get rid of."

At the same time, a nation tied to older technologies is less progressive, and most low income countries want to move ahead and develop their economies. It all depends on the definition of progress. Fresh discoveries or other types of product innovation can be used to raise the bar, keep competitors away and make money through more product sales. That income in turn can be channelled back into research and development so that leadership is maintained. But unmanaged competitive forces usually conflict with innovative planet-friendly policies that aim to solve the problems of climate change. □

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