OTHER INTERNATIONAL DEVELOPMENTS

Elizabeth Haub Prize

Award for Environmental Law

The Elizabeth Haub Prize for exceptional achievements in the field of environmental law was awarded on 19 October 2006 in Murnau, Germany to Professor Philippe Sands by the Free University of Brussels and the International Council of Environmental Law with the support of the Elizabeth Haub Foundation.

Baron André Jaumotte, on behalf of the Rector of the Free University of Brussels thanked the Jury and opened the meeting. He greeted all those in attendance and added that the ceremony normally took place at the Free University of Brussels, but since all of the Laureates of the Haub Prizes for Environmental Law and Diplomacy were expected to be there they had decided to move this special event to Murnau. Additionally, Baron Jaumotte thanked the hosts, the Haub family and Dr Wolfgang Burhenne for holding the ceremony in such a wonderful setting. He then delivered the following address:

"Ladies and Gentlemen,

As the representative of the *Université Libre de Bruxelles*, I am extremely honoured to be able to hand over the International Elizabeth Haub Prize to a personality renowned throughout the world as an expert in international environmental law, and this among eminent jurists from all four corners of the globe.

Left to right: Walter Hecq, Wolfgang E. Burhenne, Baron André Jaumotte and Helga Haub
Courtesy: EHF

This planet, as you well know, suffers many pressures on it today, due to the accumulation of all kinds of waste for which assimilation by natural means is limited, or because of a growing scarcity in certain resources, which raises the question as to how sustainable development can be maintained. Numerous uncertainties surround the future of the impacts of these problems. Uncertainties are equally numerous as to what potentialities technical progress can provide in face of the challenges brought on by such a delicate sharing of resources between men and ecosystems, between local and global issues, and between the present and the future.

Within this context, the role of the jurist in environmental law has grown almost inevitably to a much wider scale. Today's laureate has rapidly become aware of this. Indeed, your achievements, Professor Philippe Sands, have been numerous. In spite of your age, you already figure among the great experts involved in the development of international environmental law.

Throughout your young yet rich career, we can pick out five directions which have allowed you to reach the position you have today.

First of all, as a University Professor.

You are currently Professor of Law and Director of the Centre for International Courts and Tribunal at University College, London, where you lecture in several subjects including International Environmental Law, as well as being Senior Lecturer in International Law of Natural Resources and European Community Environmental Law. You are also Visiting Professor at the University of Toronto. You have assumed the post of Visiting Professor in several Universities: Drake, but also Paris II and Paris X. Similarly, you have taught International Environmental Law at King's College, University of London. You do not stop there, however, Professor Sands, since you are also a renowned Professor of international law.

Secondly, and in conjunction with your academic activities, you are an excellent practising Barrister.

Your appeals in international cases of litigation before the most eminent international courts (International Court of Justice, International Tribunal for the Law of the Sea, European Court of Justice, etc.) and in favour of environmental protection command respect, inasmuch as they concern aspects of a highly technical nature: radioactive pollution in the Irish Sea from factories involved in the reprocessing of used nuclear fuel, pollution of the River Uruguay from paper pulp factories, impacts on ecosystems from a dam installation on the Danube, etc. ➳

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All of this is without taking into consideration your activities as legal assistant on behalf of such large institutions as the European Commission, for example, where you dealt with such a complex and delicate issue as a dispute over GMOs.

Nonetheless, you do not limit your appeals purely to the field of environmental protection. Instead you use them for the protection of human rights, taking action in society and elsewhere on this subject so dearly cherished by Professor Ali Mekouar, your precedent as Haub Prize winner. Here we might mention the stand you took against nuclear arms before the Court of International Justice in 1994–1995, as well as your opposition to former dictators, as for example before the British lawcourts in 1998–1999, over the *Pinochet affair*. More recently, in 2003, you were once more actively involved in the *Taylor affair*, before the special Tribunal for Sierra Leone.

Thirdly, we must remember Professor Philippe Sands' contribution as author of numerous scientific articles, chapters in books, and books as author or editor, notably:

- *Principles of International Environmental Law*;
- *Environmental Law, the Economy and Sustainable Development;*
- *Greening International Law*;
- *The Antarctic and the Environment*.

Fourthly, in mentioning the contribution of Professor Philippe Sands as assistant editor of:

The *Review of European Community and International Environmental Law* and the *Yearbook of International Environmental Law*.

Fifthly, by his participation in associative activities, since you are a co-founder of FIELD (Foundation for International Environmental Law and Development) and also Director of Studies within this foundation.

You share the same characteristics in your commitments as the other laureates of the Haub Prize who have gone before you. However, you stand out even more so on account of your dual profile. Not only are you a specialist in international and environmental law, but also in international penal law; not only do you hold British nationality, but also a French one.

These multiple talents are confirmed elsewhere through your involvement in the theatre. For a long time now, you have been a member of the Board of Directors of the SOHO Theatre Company of London.

Within the current and future climate of globalisation, the services rendered by Professor Philippe Sands are essential to the setting up of an international law code for the Environment.

The awarding of this prize can be fully justified, not only as a reward for his merits, but also to encourage him in the pursuit of his endeavours."

Following the address accepted with applause, Baron Jaumotte called the Laureate and the Secretary of the Jury to read the award certificate. Dr Wolfgang E. Burhenne hung the gold medal around the Laureate's neck and Helga Haub presented him with the envelope containing a cash prize to be used in connection with an activity of environmental law.

Dr Wolfgang E. Burhenne in his capacity as Executive Governor of the International Council of Environmental Law made the following statement:

"Monsieur le Recteur, Monsieur l'Ambassadeur, ladies and gentlemen, and friends, with special thanks to the Jury Members.

It is a pleasure to be with you today, and a pleasure for me to speak on this occasion.

Philippe Sands, a man with legal convictions... The first time I heard about Philippe Sands was when he founded FIELD, the Foundation for International Environmental Law and Development in 1989. This was a bold and interesting step, in a landscape which, at that time and even now, did not include many independent and non-governmental voices. FIELD became a great success, and its contribution to the law it was mean to influence can be traced in a number of areas. Its initial success had to do, in my humble opinion, with its founders. Because of their initial personal contributions, but also because they played a magnetic role in enlisting the collaboration of young enthusiastic people, dedicated to a cause, which at an early stage, linked environment and development. People with convictions…

The second time I learned about his whereabouts was when he made headlines as the adviser to Small Island Developing States in negotiations of the climate change treaty. I think he enjoyed this role – at least that was the impression I had from the press reports. Here was again someone who put his knowledge and skills at the service of what was then still an obscure task – bringing the concerns of Small Island States to the fore, and helping them make a consolidated case. And you continued in this line ever since, Philippe, even if this is perhaps not so apparent.

You have developed a tremendous basis of scholarly contributions to international law generally. However, the cornerstone of your work is its environmental component. Many are thankful of this work, in particular for the *Principles of International Law*, including those involved in international negotiations. They have, as several friends have told me, only one criticism: the book is so heavy that you have to hide it in your cabin luggage in order to avoid excess baggage charges and it's so thick, that security staff check if I haven't hidden anything between the covers! Naaa… this does show the extent of the success of your scholarly work!

But, this is only one facet of your work, one which is enriched by your work 'in the field'. I refer to your practice as a barrister and litigator in international fora. This is, I sense, your major interest. An interest grounded in proving that international law – in spite of all its shortcomings – is not only important from a theoretical point of view, but also because it can directly impact you and me, as well as Pinochet, Bush and Blair.

You called it a 'lawless world', to make your point about the disdain that unfortunately often continues to characterise the rules of international relations, in spite of the ever increasing international commitments entered into by sovereign states. Nevertheless, you went on to describe how, through an increasingly sensitised and responsive

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judiciary at national and international levels, as well as an increased role for international courts, immunity from prosecution is shrinking, and 'safe havens' for culprits lost. You will tell us more about your views on this later on today and tomorrow and we look forward to hearing them.

We are sorry to have to 'lose' you after the first day of the Symposium. This has to do with your involvement in the ICJ Argentina vs. Uruguay case. You were invited at short notice by the President of Argentina to come for consultations and torn between your commitment to participate in our forthcoming Symposium, or this other important task. Consulted, what could I have said other than that all those here will understand your leaving us early considering the situation. I was also surprised to receive a note of thanks for my, or – rather – our understanding from the Foreign Affairs Department of Argentina. It was also interesting for me to hear from the President of another international court that, if the Argentina vs. Uruguay case had come to 'his' court, it would have been decided differently. This is 'wind to your mill' as the French would most appropriately say in this particular case: not only is the availability of the court important, in the end, the judges are their masters.

You noted this on several occasions. And so, perhaps you will agree with a number of the laureates present here, that dialogue with the members of the judiciary about the evolving role of international law, and of environmental law, is an important challenge for all of us.

Helga Haub with laureate Philippe Sands Courtesy: EHF

We all wish you well, Philippe, and hail you as a man who consistently fought against the long established notion of international law as – oddly enough – a private matter between States. We hail you as a man 'with legal convictions'. Additionally, my wife has assured me that saying this does not conjure up connotations of being a convict!"

Following applause, Baron Jaumotte asked Professor Philippe Sands to take the podium. Dr Sands made the following statement:

"It is a tremendous privilege for me to be to here today with so many colleagues and friends who have contributed to the development of international environmental law. I would like to begin by expressing my thanks to the family of Elizabeth Haub for supporting the subject to which we all have such an attachment, together with colleagues at the International Council for Environmental Law. I must also express my appreciation and gratitude to the colleagues with whom I have worked over nearly two decades, at the Foundation for International Environmental Law and Development (FIELD) and at London University and New York University. I thank members of the jury for endowing me with this great honour, and in particular Wolfgang Burhenne, who I feel privileged after so many years to call a friend."

He then went on to present his paper (see below). After applause, Baron Jaumotte closed the ceremony with many thanks and invited everyone, in the name of the hosts, to dinner.

Developing Environmental Law: Where We Are

by Philippe Sands*

How did we get here today? I did not start with any background in environmental law. When I studied law at Cambridge University in the early 1980s there was no course on the environment, and the wonderful course on international law taught by Robbie Jennings had no environment component. At that time, in England, the environment was barely considered to be a legal topic. I became involved in international environmental law by accident, as a result of the Chernobyl accident. I received a request from an American academic institution inviting me to write a paper on the transboundary environmental law implications of that nuclear event. I did some research. It turned out that very little had been written. I would not say that the subject was non-existent – Alex Kiss in France and Patricia Birnie in the UK were already active – but it was certainly embryonic.

The result of my limited research triggered an interest. A colleague at London University – Alan Boyle – suggested we put on a course on international environmental law. This was 1988. I may surprise you if I say that we actually encountered tremendous opposition! Were there

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any textbooks, we were asked? There were not. Alex Kiss's book was about to come out in French, and Birnie and Boyle's *International Law and the Environment* was still a few years away. What were we going to teach, were there any cases, was there any literature that we could refer to? The questions abounded, but we prevailed. In 1989 we offered the first course on international environmental law at the University of London, and possibly anywhere in the UK. So less than twenty years ago the environment was not seen as part of mainstream international law. How much has changed is clear to all of us.

With our common law tradition, Alan and I liked to focus on the cases. There were very few. There was the obscure *Pacific Fur Seal Arbitration* from 1893 – actually a rather wonderful case – and there was *Trail Smelter* and *Lac Lanoux*, both of which were somewhat half-hearted in their embrace of environmental considerations. And there was the *Nuclear Tests case* of 1974, which I have always understood as a decision not to decide largely motivated by a fear of some judges that any judgement would actually be adverse to the development of international environmental law. So there was not very much for us to turn to.

As an international lawyer I also have a particular interest in the way in which courts and judges deal with environmental issues. That is what I would like to focus on. What is their function in the context of international environmental issues? There have been tremendous changes since we started teaching our course in 1989 at the University of London (the same year that FIELD was founded) and since *Principles of International Environmental Law* was first published in 1995.[1] The case law has increased significantly, off the back of major institutional developments. Apart from environmental law issues being decided before the International Court of Justice, there are now the International Tribunal for the Law of the Sea, the WTO dispute settlement bodies, the various inspection panels, and of course the human rights bodies, with the European Court of Human Rights making a major contribution. International environmental law issues are also increasingly being argued before national courts.

On the face of it, these developments look rather positive. If you look for the international case law over the past fifteen years – from the early 1990s to the present day – you will find a significant body of jurisprudence. That stands in sharp contrast to the century that came before. There are more environmental treaties and rules, more international courts and tribunals, and many more cases dealing with international environmental issues. But we still have to ask ourselves a key question: how seriously do these international courts actually take environmental issues?

I have been very fortunate to have an opportunity to act in several of these interesting cases. Appearing before international judges is rather different from being before a national court. For a start, there are usually many more judges on the bench. As a younger advocate I was taught that it is important to make eye contact with the judge. That is easy enough when there is just one judge, or three, as is usual in many national courts. But when there are 15 – at the ICJ – or even 21 – at ITLOS – the eye contact becomes a little more difficult! Nevertheless there is contact with the judges, even if it is unspoken, and it is possible as an advocate to develop a feeling as to how receptive the bench is to the environmental arguments. It is possible to ascertain – to a certain extent – which of the judges appear to be open to certain arguments, and which are not. A potential receptiveness to environmental arguments may also be reflected in the judges' backgrounds, including any writing with which they may have been associated, as well as their own country's attitude to environmental issues. There are no hard and fast rules, of course, and often things will not be what they seem, since each judge is independent and approaches each case with an open mind.

From my experience there are at least three features of international environmental litigation that point towards restraint.

Firstly, the function of the courts and tribunals is to interpret and apply a treaty or an obligation in customary law. In the field of international environmental law that gives rise to a particular difficulty because, as we know, the rules are often vague or ambiguous. That can make it difficult for a judge to take words and interpret them one way or another with any degree of certainty. With environmental rules there is often considerable scope for flexibility. Moreover, environmental objectives invariably compete with other social objectives (economic development) that are more firmly entrenched in the system of values that courts are asked to recognise. These other values may be more likely to prevail if there is an insufficient clarity of the environmental rule to allow a judge to say that it overrides an economic or other developmental interest. But for that to happen there is a need for great clarity in the environmental rule, and that is a rare thing. Environmental rules are often agreements to disagree reduced into writing. And that means there can be a tendency to reduce the rule to the lowest common denominator. That then means that a judge is less likely to take such a rule and apply it in a way with far-reaching consequences.

A second feature of international environmental litigation is that invariably issues of scientific or technological expertise arise. And as with lawyers the experts can hold very different views and put them forward convincingly. Many times I have sat in court and heard my expert and wondered what will be said in response to a compelling, powerful, technical argument. And then you hear the other side's expert and you think well, actually, that was pretty compelling too, that knocks us out of the water, how are we going to deal with it? It can be very difficult for judges to decide between competing expert views. Where the rules are unclear and the scientific and technical issues open to argument the judge will inevitably tend to adopt a more restrained approach.

There is a third characteristic of environmental issues which distinguishes it from other areas of law: environmental issues are almost never dealt with in isolation from other societal issues. There will always be environment and development, or environment and a technical issue, or environment and trade, or environment and human rights. By definition environmental matters intersect with

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other topics. There will only rarely be a purely environmental issue. Often, therefore, the judge is balancing issues that arise in different subject areas. That tends to lead to a watering down of the environmental component. States have not agreed on how important the environment is. Different states have different views on different aspects of the environment. Judges are conscious of that, since it is reflected in the treaty instruments. That means that the judges in the exercise of interpretation are bound to look into the views of states in preparing texts that are adopted, and recognising the negotiating history of the treaty of different states. The same words may reflect different objectives. That has a significant impact I think in the environmental domain.

These factors can conspire to create a series of hurdles for environmental issues, limiting their ability to really get off the ground in proceedings before international courts and tribunals. Nevertheless, there are grounds for optimism, even if the time has not yet come (if indeed it ever should) in which environmental issues might co-exist equally with (or on occasion even trump) other considerations. The reason that has not happened is not just because the right cases haven't come up. It is because the factors I have mentioned – and others – have come into play in such a way as to cause judges to be cautious. It is understandable that they should be cautious in the context of the relative novelty of environmental issues. The fact that international environmental law was not taught at the University of London until 20 years ago, and that there were no textbooks about the subject, means that most of our international judges came to the law well before the environment was an issue. As with human rights, and other areas, it will take time for the subject to penetrate and develop. The generational and cultural shift that has come into the human rights field has not yet informed the environmental field. That is not a criticism, merely a recognition of a reality.

Courtesy: P. Sands

International environmental law is still in its early days. There have been significant developments, and the courts have contributed. I am thinking of the ICJ's ruling in the *Nuclear Weapons Advisory Opinion* in 1996 affirming the existence of norms of customary international environmental law, and its decision the following year in the *Gabcikovo/Nagymaros* case in which it went very far in supporting an evolutive approach to the integration of new environmental norms. I am thinking also of some of the decisions of ITLOS, in its various provisions, measures, and decisions on southern blue-fin tuna, nuclear cooperation, and the environmental assessment of land reclamation projects. Even if there has not been a dramatic breakthrough, there has been steady and important progress.

But there are also signs of impending difficulty. Let me just give an example. I will focus not so much on the substantive obligation – the extent of an obligation to not cause harm to the marine environment or biodiversity, for example – but on procedural obligations. One of the things states have done in light of their manifest inability to adopt clear and far-reaching substantive obligations has been to take refuge in procedure. If they cannot agree on what constitutes damage to a watercourse, they will at least agree that there is an obligation to consult, or carry out an EIA, or provide information. Instruments like the 1997 Convention on Non-Navigational Uses of Watercourses[2] become important not so much for their substantive norms but for the processes they require. And process is important in addressing and then resolving differences over environmental matters. To a large extent the *MOX case*[3] and the *Pulp Mills*[4] *case* are about process.

So an increasingly important issue is going to be the willingness of international courts and tribunals to give real effect to procedural requirements, including interim relief in the form of injunctions. Will an international court or tribunal grant an injunction if a state has patently failed to comply with its procedural obligations? The issue arose in the *MOX case*, and ITLOS deserves great respect for its relatively pro-active approach to interim measures, recognising the role such measures can play in assisting the parties to a disagreement into closer cooperation. ITLOS did not accede fully to Ireland's request, but it did go quite far in encouraging the parties to resort to greater cooperation and consultation.

Interestingly, however, ITLOS did not accept that the violation of the procedural obligation itself could justify injunctive relief. I would refer you in particular to the Separate Opinion of Judge Mensah, who is not only a friend but someone for whom I have the highest professional regard and who contributed greatly to the development of international environmental law. This is what he said in his separate opinion:

> *"With regard to the "procedural rights" (cooperation and consultation) which Ireland claims have been violated by the United Kingdom, I agree with the Tribunal that some at least of these are "rights" that may*

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"be appropriate for protection" by provisional measures […]. However, I do not find that any irreparable prejudice to Ireland has occurred or might occur before the constitution of the arbitral tribunal."[5]

And then the key words:

"*In my view none of the violations of the procedural rights arising from the duty to cooperate or to consult or to undertake appropriate environmental assessments are "irreversible" in the sense that they cannot effectively be enforced against the United Kingdom by decision of the Annex VII arbitral tribunal, if the arbitral tribunal were to conclude that any such violations have in fact occurred. For example, it would be within the competence of the Annex VII arbitral tribunal to order the United Kingdom either to decommission the MOX plant altogether or to go back to the drawing board and take action to comply with any applicable procedural requirements that the arbitral tribunal finds should have been followed*".

What seems to be said, in effect, is that injunctive relief will not be available for procedural rights relating to the environment because the harm that arises can always be repaired – *ex post facto* – by other means, however far into the future. That may or may not be right in a particular case. But a general commitment to that proposition would be scarcely consistent with the preventive approach to environmental protection that environmental law requires. An environmental impact assessment procedure, for example, can only be relevant *before* the activity that is being proposed occurs. A failure to carry out a proper (or any) EIA cannot be remedied by later measures. Judge Mensah's language is far-reaching, perhaps further than may have been intended, and I may be reading too much into it. Yet it seems contrary to the very essence of environmental protection, namely the need for proportionate and protective measures which prevent harm before it has occurred. The language of the Separate Opinion suggests that there is still some road left to be travelled if we are going to persuade the international courts to take environmental issues as seriously as they should be taken, in any appropriate case. It suggests that there has been great progress in the past twenty years, but there is still a long way to go.

Notes

1 See *Principles of International Environmental Law*, 2nd edition, 2003 (Cambridge University Press).
2 36 *ILM* 700 (1997).
3 ITLOS, *MOX Plant Case* (Ireland v United Kingdom), Order on Provisional Measures, 3 December 2001.
4 ICJ, *Pulp Mills on the River Uruguay* (Argentina v Uruguay), Order on Provisional Measures, 13 July 2006.
5 *Supra*, note 3.

In Appreciation of Prof. Alex Kiss

It is with deep sadness that we announce the death of Prof. Alexandre Kiss, an esteemed member of the EPL Advisory Board and a dear friend.

We shall not attempt to summarise the enormous contributions Alex Kiss made to the development of public international law, and in particular, international environmental and humanitarian law. There is no need to elaborate on the achievements of one who has been described as "the father of international environmental law," in the many tributes received from all over the world. Our thoughts focus rather on the qualities of Alex Kiss the man, than on Prof. Alex Kiss, the scholar.

Alex Kiss was a team player, a man of great humanity, firm beliefs and deep faith. He was not just a dedicated teacher, but also a doer. The principle underlying all of his teaching was that we are merely the custodians of this planet – he preferred the word "biosphere"– for future generations, with the duty to protect all forms of its biodiversity.

His last published paper was from the Murnau symposium and reiterated anew his hope that "the recognition of wildlife and its components would be considered as environmental assets of all humankind, to be respected and preserved as such", leading ultimately to the acceptance and implementatation of an "Environmental Martens Clause."

We are fortunate that Alex Kiss's own actions have shown us the best way to honour his memory – to continue his efforts to increase awareness and to strengthen environmental laws in those areas to which he devoted most of his life's work. (MJ)

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WIPO

The Path to One Universal Patent

by Morten Walløe Tvedt*

Patent law has become an environmental issue partly because of the expansion of the scope of patentability to cover biological and biotechnological inventions. Extensive patenting based on traditional knowledge related to biological resources, and of biological material itself as well as of genetic resources and biological processes are thought by some to challenge the sovereign right to genetic resources according to the Convention on Biological Diversity (CBD). In the context of discussions surrounding the harmonisation of patent law, many key issues have arisen regarding how further expanding the reach of patent systems might create further pressure on the public domain of genetic resources;[1] and reduce the opportunity of achieving a fair and equitable benefit sharing under the CBD. In other views, it is considered that patents are a way of realising value from biological and genetic resources; improvements to the patent system might be seen as positive to those seeking to increase access of countries to benefits from their resources, presupposed that benefit sharing takes place. The concept of benefit sharing under the CBD is not only an objective and rationale for the convention, but also a means to provide founding of conservation and sustainable use of genetic resources and biological diversity. In this connection, it is feared that decisions in the context of a world patent system might reduce the operating space for the CBD and thus challenge conservation of biological diversity.

This article takes a look at the current developments of the patent system to analyse whether one universal patent – or one world patent – is on its way.

Introduction

A world patent or universal patent describes an exclusive right granted to one individual company or person, by one centralised institution, which at once becomes legally binding for all citizens in all the countries subscribing to the system, and enforceable upon every private person and public institution globally. Currently, there is not one single coherent world patent system, but rather a number of nation-specific systems tied together by international harmonisation and regional cooperation. A universal world patent would be a huge benefit for multinational companies seeking worldwide exclusive (time-limited) monopolies. Downsides of such a system would probably be public research (with less access to funding) and the poor people without power to pay monopoly prices for new products. A universal world patent would also not stimulate local inventors as they seldom get to the global markets with their inventions. It has been concluded that further harmonisation of patent law would benefit developed countries, whereas it would be an obstacle for advanced developing countries and a hinder for least developed ones.[2]

A system where the patent applicant could submit his application to one universal patent office and have the patent granted by that office would change the current patent law system completely. It would break fundamentally with the principle of sovereignty of countries as we know it in international law today.[3] Currently, there are no supranational legal systems at the global level that have the authority to alter the legal position between individuals.[4] Thus, a worldwide or universal patent would be a conceptual novelty in international law as it will have the competence to alter the legal positions between individuals under the jurisdiction of all countries without any act from each nation in single cases.

There are several processes of continuous harmonisation of patent law going on. In April 2006 the work in the Standing Committee of Patent Law in the WIPO broke down since the member states of WIPO were not even able to reach an agreement regarding the working plan of the Committee.[5] After this breakdown the harmonisation work has taken less formalised forms as working meetings among the developed countries (in the so-called B-Group) and work undertaken by the Trilateral Patent Offices (the European, US and Japanese Patent Offices).[6]

Since the Paris Convention in 1883 there has been international cooperation with the goal of harmonising the national patent systems.[7] During industrialisation, the leading Western European countries and the US actively used law in general and intellectual property rights in particular as strategic tools to build domestic industry.[8] Unlike today, however, the early steps of cooperation in the late nineteenth century did not preclude or limit the industrialised countries from actively and strategically adapting their patent systems to promote building national industry and create social welfare among their citizens.[9] A universal world patent system would close such possibilities to developing countries.

Today there are a number of harmonised standards and worldwide fragments of cooperation between national states. It has been claimed that: "There is no excuse for maintaining parallel national patent systems in a world of international trade".[10] This statement could be read either as a normative statement expressing the view that a

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world patent should be put in place or as a descriptive observation that the most likely next step in a world of global trade is a world patent. For the increasing number of multinational companies using the patent systems there are strong economic benefits in having a system for the grant of worldwide monopolies. For them a logical next step is to push to be granted a universal patent by one application to a global centralised patent office.

Such a system would, however, limit or remove the discretion that the TRIPS Agreement leaves open to developing countries. Significant legal, ideological and economical differences currently divide countries on this point, which have been expressed as a disagreement about whether to harmonise patent law further. The thesis of this article is that despite these disagreements a worldwide universal patent system is being established based on a narrow set of interests. Unpacking the processes leading to such a system is therefore crucial to generate an open global discussion about a worldwide universal patent system. This article first identifies the steps that are lacking before a universal patent system could be in place; and second it examines the fora where harmonisation of patent law is taking place, with a particular view to identifying where the missing pieces are being dealt with.

Which Legal and Institutional Matters are Needed?

International law is governed by the principle of sovereignty – each government enjoys full power within its territory and holds no power within the territory of other countries.[11] In patent law this is reflected into a principle of territoriality – a patent establishes an exclusive right in the country where granted; and establishes no exclusive rights outside that territory.[12] A world patent system would include challenging this fundamental principle of international law, as the grant of the world patent would be done by one universal bureau. The current international legal situation does not allow such universal world patents. The question is, therefore, which amendments of law and new institutions are needed for such a system to be in place? Depending upon the way of grouping them, one could say there are five elements that must be in place for a universal patent system to function:

1. A bureau or office with the competence to grant patents;
2. Standardised requirements to the patent application (formal criteria) and standards for the so-called "pre-grant" substantive issues,[13] (*inter alia* invention, novelty, inventiveness and industrial application);
3. Scope of the exclusive right conferred by the patent;
4. System for enforcement of the patent upon other private (and public) parties;
5. Revocation or review of a granted patent.

All these elements, however, need not necessarily be regulated at the international level – and they need not necessarily be regulated at a global level at the same point of time before the first world patent can be granted. A universal patent system can refer certain topics to be dealt with under national law.[14] The aim of this section is to identify the issues under each of these elements that still lack international agreement for a universal patent system to be possible.

The Institutional Structure is in Place – the Political Decision is Lacking

The WIPO as a Universal Patent Bureau

A prerequisite for issuing patents is an authorised bureau that can receive, examine and grant the exclusive right. Here the principle of territoriality becomes evident: the patent authority of each country grants patents valid within its territory. Currently, there are regional patent offices that grant patents on behalf of their member countries.[15] These regional offices already have a partial supranational authority as the decision of, for example, a patent granted by the EPO shall have the same legal effects as the grant of a patent granted by the national patent office in the member countries.[16] Before the first universal patent could be granted, a universal office or universal bureau needs to be appointed and authorised to grant such patents by the member countries.

The International Bureau of WIPO is already undertaking more comprehensive tasks than being simply a secretariat for the member countries of the WIPO. The International Bureau of WIPO is also a service provider for the patent applicant that otherwise would be the task of the national patent offices.[17] The International Bureau receives patent applications in the system for international applications and international preliminary examination.[18] It classifies the patent application (the patent claims) into the very detailed classification system of the Patent Cooperation Treaty (PCT). The claims in the patent typically target invention in different subclasses and will therefore contain a reference to more than one class. Based on the classification, the Bureau searches the selection of relevant sources for existing information – the so-called relevant prior art.

This work by the WIPO is today only a service provided to patent applicants to make the process of having a patent granted in multiple countries easier. The prior art search is a fact-finding part of the examination of whether the patent application fulfils the patent criteria, WIPO presently has no competence to apply these facts, evaluate prior art, to grant or reject the patent application.

From the perspective of establishing a worldwide universal patent system, the organisation of the International Bureau of the WIPO and these present services have a potential to be converted into a formal universal patent bureau that also has the authority to grant patents with legally binding effects for member countries. The technical solutions are already in place at the WIPO, so it is more of a political question whether to confer such authority to grant patents to WIPO (also, remaining substantive issues must be harmonised, this is discussed in the next section). As the question of establishing a universal patent system is formally not on the agenda, it is an open question whether there is political will to convert WIPO into such a universal patent bureau; and whether there is political will to give WIPO authority to

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grant or reject patent applications on behalf of the member countries.[19]

The Trilateral Offices as a Universal Patent Bureau

The patent offices of the US Patent and Trademark Office (USPTO), European Patent Organisation (EPO) and Japan Patent Office (JPO) grant a high percentage of the patents globally. They are often referred to as the trilateral offices. These three important patent offices have been cooperating over years.

There are already important links between the International Searching Authority under the WIPO and the national patent offices. One such link is embedded in PCT Article 16 where the International Searching Authority (under WIPO) can refer the international search for prior art to a national patent office.[20] The result from this search conducted by one designated national patent office then becomes the binding result from WIPO. Thus, the work of one national patent office can already be brought to the international level, as the results found by the national offices will be accepted in the international system; and thereinafter brought back to the national level of all other countries than those eight appointed international searching authorities.[21] Thus, a universal bureau might be organised with one central bureau (*e.g.*, WIPO in Geneva) and regional specialised offices supplementing the global activities. The trilateral offices could easily be the backbone of the institutional structure of a worldwide universal patent office.

The institutional structure required before establishing a worldwide universal patent system is mostly in place; there is a question of a decision by the member states to the WIPO whether to increase the competence of the international bureau also to cover authority to grant worldwide patents; or the trilateral offices could be appointed as the universal bureau. The division of competence between the trilateral offices and a centralised international bureau is perhaps going to be one of the key difficulties.

Standardised Requirements to the Patent Application

The fact-finders in the WIPO prior art search currently have the task of pre-examination of the patent criteria (novelty and inventiveness); whereas the competence to grant the patent rests with the national patent offices (or with the regional patent office for their member countries). To transform the fact-finders into decision-makers based on the facts they are finding today could be done by altering their authorisation. Before such an alteration of authority, both formal and substantive issues need to be harmonised:

Formal Aspects of the Patent Application

A number of technical issues for granting patents are already in place thanks to the Patent Law Treaty (PLT) of 1 June 2000 and in the Patent Cooperation Treaty (referred to above). The PLT provides solutions to a number of technical questions that a worldwide patent system requires, such as determining the filing date,[22] the form and content of the application[23] and rules about representatives.[24] These already present solutions make the path to the worldwide patent system less troublesome. The Patent Cooperation Treaty also regulates a number of core formal issues required by a worldwide patent system, for example, requirements to the description and the patent claims.[25] What we can learn from these two treaties is that together they regulate the formal aspects of the patent application, and harmonise them at the global level.

Substantive Requirements to the Patent Application – The Pre-Grant Issues

The single area of less harmonisation is the substantive patent criteria for granting a patent. The TRIPS Agreement, Article 27, paragraph 1, provides that: "patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application." Thus, the TRIPS Agreement refers to the patent criteria as they are formulated in Europe, but in the footnote to the same paragraph it specifies that: "For the purposes of this Article, the terms 'inventive step' and 'capable of industrial application' may be deemed by a Member to be synonymous with the terms 'non-obvious' and 'useful' respectively." The footnote opens for the US to maintain their current patent terms and practice for the grant of patents. Thus, the TRIPS Agreement does not set a strict standard for the choice of terms describing the patent criteria that must be met for a patent to be granted. There is also no attempt made in the TRIPS Agreement to harmonise the content of these terms or the considerations that should be taken into account when the patent office is to reject or grant the patent. This is a major challenge and perhaps the major obstacle for a worldwide patent system. Harmonisation in this respect is also decisive for having a legal basis for a universal patent bureau to grant world patents.

The latest work that the Standing Committee on Law of the Patents (SCP) in the WIPO has carried out was to attempt harmonisation of, *inter alia*, these pre-grant issues at the global level.[26] The draft Substantive Patent Law Treaty (SPLT) and supplementing draft regulations and guidelines are comprehensive and attempt to solve almost all unharmonised questions and issues in patent law in one single negotiation.[27] The comprehensive scope of the draft is probably one important reason for the breakdown in the negotiations. There was also a fundamental disagreement between on the one hand the developed countries emphasising the need for further harmonisation of international patent law for the sake of reducing costs for patent applicants and workload for the patent offices.[28] On the other hand, Argentina and other countries took a more reserved position on whether further harmonisation of patent law is in the interest of developing countries.[29] These major differences in the underlying realities and perceptions of whether more harmonisation is needed or not is one important reason for the collapse of the negotiations in the Standing Committee (SCP).

Observing the strong resistance from developing countries to further harmonisation, it is striking that Japan put forward the following statement: "In the view of the United States of America, Japan and the EPO, these topics were non controversial, non political, purely technical, impor-

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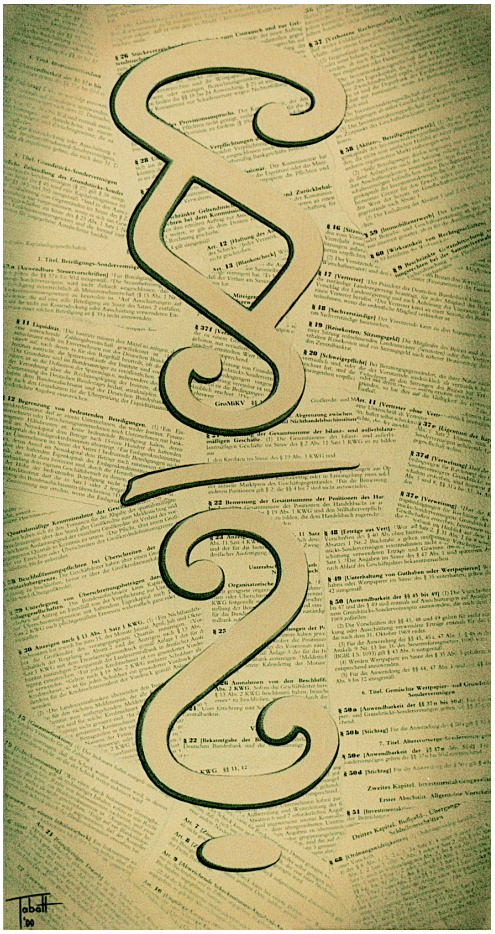
tant to examination as to novelty and non obviousness/inventive step, and would meet the needs of every applicant and every office."[30] The debate in the Standing Committee on Law of the Patents shows that developing countries did not agree to these issues being non controversial and non political. This difference in opinions is also probably one explanation for why the Standing Committee did not agree on the future working agenda.

Another reason for the Committee not even agreeing on a consensus working agenda was that the B-Group (the developed countries) and a small number of other countries insisted on singling out four topics, the so-called "pre-grant issues", to be negotiated first, disconnected to the more comprehensive list presented by the vast majority of developing countries.[31] The B-Group in the WIPO is the informal preparation group consisting of developed countries. One reason for choosing these four issues to be harmonised first and leaving the other elements in the SPLT for later can be the urgency of standardising these criteria before the first universal world patents can be granted. If the pre-grant issues and including the patent criteria are harmonised there will be an established common legal ground for a universal bureau to grant world patents. A fast-track negotiation of the pre-grant issues would clear the ground for a worldwide universal patent system.



What's left at the end? Courtesy: Uwe Tabatt

Particular Disclosure Requirements Adopted to Special Fields of Innovation

Disclosure of the invention is a basic criterion in patent law. The standard requirement is that the invention shall be explained by the use of text. Currently, there is one particular system that derogates from the general principle of written description. The Budapest Treaty prescribes and establishes an international system for the deposit of biological material which also includes genetic material.[32] The system under the Budapest Treaty opens a possibility for the patent applicant to provide for a less comprehensive written description of the invention by instead depositing a sample of the biological material relevant for the invention. This system makes it easier to meet the disclosure requirement for biological material from the point of view of the patent applicant.

The second disclosure requirement receives much more attention in the international negotiations: the disclosure of information of the origin, provider or legal accuracy of the biological material included in or being necessary for the invention. This issue is being discussed in the TRIPS Council of the WTO, in the Inter-Governmental Committee (IGC)[33] of the WIPO and in the Convention on Biological Diversity (CBD). The loud call from developing countries requiring openness from the patent applicant regarding the origin/source/legal provenance of biological material is equally strongly opposed by the industry and developed countries. The main reason for developing countries to suggest such a requirement in patent law is in the hope of this leading to benefit sharing, as required in CBD Article 15, paragraph 7 and the maintenance of the public domain and other rights to genetic resources and biological material. Despite the expectations that disclosure would lead to benefit sharing, one can express serious doubts regarding whether such a requirement would in fact do so.[34]

Moreover, from the point of view of a universal patent system, it is not necessary to include such a disclosure requirement before the first world patent is granted. Currently, patents are granted in a number of countries without such a requirement. The draft SPLT suggested that only requirements in that treaty and two other WIPO treaties should be sources for legal formal requirements to a patent application.[35] If such a rule is accepted, the case would be closed for a binding disclosure requirement. It is not a necessary condition for a world patent system that countries agree to such a requirement. If a universal patent system is put in place, the incentive for developed countries to undertake such an obligation will disappear. To break up the negotiations into one fast-track negotiation of the pre-grant issue, leaving the other issues behind, would probably be the best way for developed countries (and the industry) to escape such a requirement. If a world patent system is put in place without such a disclosure requirement, the chance for this to be included at a later stage is minimal. One concern is that the heated debate about disclosure of origin distracts political attention of developing countries and NGOs away from the fora where the binding patent law and a world patent system are developed.

The Exclusive Right Conferred by the Patent

The acts that are under the exclusive right of the patentee are already fully harmonised in the TRIPS Agreement. According to TRIPS Article 28, the patent covers the exclusive rights to "making, using, offering for sale,

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selling, or importing". Thus, there is no need to further harmonise the scope of patent protection before a worldwide patent system can be set up.

When a patent is granted, the patent claims defines the invention which is under the exclusive right. As the patent claims are written sources, they must be interpreted. Mostly, it is the patentee who enforces his right upon others who interprets and applies the patent claims. When a case appears before a court it is up to the court to interpret the width of the claims. There are considerable differences in the principles of interpretation of the patent claims among countries. Currently, there are no harmonised principles in international law. The Standing Committee on the Law of the Patents came up with suggestions for harmonised principles of interpretation.[36]

If patent protection in a worldwide universal patent system is to be identical in all countries, the principles for interpretation must be harmonised at the global level. But, in the meantime it would be possible for a world patent system to accept that national courts would interpret the patent claims differently. This is the situation in the European Patent Organisation; patents are granted for a number of European countries, whereas the enforcement and interpretation of the patent claims are left to the national courts. Surely, national variations leave the patentee with different exclusive rights in different countries, but the point for a world patent is that a system for granting the rights could be in place without full harmonisation of the principles of interpretation. Harmonisation of these principles might be more difficult to achieve, but could be postponed.

The conclusion is that no more harmonisation of the extension of the patent right is needed, since the TRIPS Agreement already harmonises the acts covered by the exclusive right and the principles of interpretation may be left to the nation level for the time being.

Enforcement of the Global Patent Is Better Done in National Legislation

Enforcement of a world patent is better dealt with in the various national patent systems than at the international level. The TRIPS Agreement already obliges all the WTO members to provide for patent protection, including a system for enforcement of patents in national law. The obligation to ensure enforcement mechanisms is embedded in Article 1: "Members shall give effect to the provisions of this Agreement." To give effect to a patent can mean to establish legal mechanisms for its enforcement. The enforcement of an exclusive right by the patentee upon another private (or public) person is in fact more effectively dealt with in national law than in international law. In international law nations are the primary subjects. Since the patent system is intended to grant a private person a right to prevent other private persons from using the invention, the patentee needs legal remedies (or means) to stop others from using the invention. International law does not provide international enforcement mechanisms for conflicts between private parties. Such an enforcement mechanism does not, and in fact cannot, exist at the global level. Therefore, the obligation in the TRIPS Agreement is sufficient and probably also the most effective manner to enforce a world patent in national jurisdictions. The world patent could be granted globally and enforced locally. National courts would become the place for enforcing the worldwide patent regime.

A System for Revocation or Review of the Granted Patent

The national and regional patent systems as we know them today embody systems for the review or revocation of a patent after it has been granted. For a worldwide patent system to become a complete system it would require an institutional structure for reviewing and revoking a patent which has been challenged for any reason. Ironically enough, such a system for revoking a patent is not strictly needed before a worldwide patent bureau could start granting patents. A system for reviewing and revoking a patent could theoretically be developed after the system for granting a worldwide patent is in place. Theoretically, this is also an element of the system that might be left to the national and regional level where such systems already exist. This would, however, introduce a level of uncertainty into the worldwide patent system. Therefore, for a worldwide patent system to become satisfactorily harmonised, there is a need for an international system for appellate bodies.

Concluding Observation

The main concluding observation is that harmonisation of the patent criteria (the pre-grant issues) and the political decision to convert either the International Bureau under WIPO of the Trilateral Offices (or in combination) into a universal bureau are the two main issues that need to be harmonised and agreed before the first global patent can be granted. The question that arises is in which forum or fora the development of harmonisation is likely to take place.

Fora with Ongoing Harmonisation of Patent Law

The Breakdown in WIPO – An Emerging Consensus in the B-Group

The Standing Committee on Law of the Patents (SCP) was the core multilateral body for further harmonisation of patent law. The SCP developed a draft Substantive Patent Law Treaty (SPLT) which, as we have seen, includes suggestions for harmonisation of all remaining topics for a worldwide patent system to be put in place.

The negotiations in the Standing Committee on Law of the Patents (SCP) included three separate and comprehensive legal documents: the draft Substantive Patent Law Treaty (draft Treaty), the draft Regulations under the Substantive Patent Law Treaty, and the draft Practical Guidelines. Only the draft Treaty would have been legally binding in the classic sense of international law, while the Regulations and Practical Guidelines would not have had treaty status and would not have been subject to ratification by the parliaments of the contracting parties. Even though these two instruments are not treaties, they would

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have had normative effects. Understanding the total effect of these three legal documents read in conjunction is a complex issue.[37] Also, if necessary, it would be easier to change the content of the non-treaty documents, with the result of changing the legally binding obligations, by altering their application.

During recent years, the work of the SCP has been in a deadlock, and in April 2006 the negotiations finally broke down as the SCP did not even agree upon an agenda for its further work. The so-called trilateral offices, the patent offices of US, Japan and the European Patent Organisation, suggested over several meetings to break up the agenda and deal rapidly with four issues.[38] These topics were identified as the pre-grant issues which are identified above (in this article) as the main obstacles for the first world patent to be granted. After a number of different strategies to encourage the members of the WIPO to accept such a fast-track negotiation of these issues and leaving all other questions for a next round, developing countries refused to accept such a short-list agenda.[39] Instead, developing countries presented a more comprehensive list of issues,[40] including development perspectives, and argued the need for discussing the totality of the patent system before further harmonisation of single items was carried out. A possible problem with going along with such a fast-track negotiation of those pre-grant issues would be fragmenting the harmonisation efforts. The breakdown in WIPO leaves the negotiations out of the multilateral arena where all countries are represented, and brings them over to less participatory arenas.

Cooperation Among the Trilateral Offices

Cooperation among the three largest patent offices, the USPTO, JPO and EPO, is probably one of the most important semi-formal arenas for discussions of harmonisation of the pre-grant issues. The trilateral offices have met in a trilateral conference since 1982. Several statements from the trilateral offices give the clear impression that they are working towards a common procedure for granting patents universal for the three areas where they have authority: "The trilateral offices share the goals of the SCP in reducing the workload on applicants and patent offices and improving patent quality by harmonising the substantive aspects of patent law governing the grant of a patent."[41] The report from the trilateral conference in 2006 uses the terms "enhanced work-sharing" and "reuse of work results", both indicating that the trilateral offices are aiming to increase the use of the work carried out by the other offices.[42] This overall goal formulated by the trilateral offices could be observed as a confirmation from the three of them working towards a universal patent system for granting patents commonly. Thus the substantive discussions between these three bureaux become extremely important for the future development of harmonisation of patent law. The fact that all three participants to these discussions are patent bureaux exposes their talks as being less concerned about patent law in a social context and mostly influenced by the internal patent law perspective.

Emerging Consensus in an Enlarged B-Group

The so-called 'B-Group' in the WIPO is the informal preparation group of the industrialised countries. The B-Group is first a group for coordination of standpoints in the formal negotiations in WIPO in, *inter alia*, the SCP. Before the agenda meeting in the SCP in April 2006 an Enlarged B-Group met in Singapore. The topic on the agenda was to discuss harmonisation of the topics dealt with in the SPLT, and how to bring forward the negotiations in the SCP. In November 2006 the Enlarged B-Group, now called the B+Group, met again in Tokyo and discussed a chair's text with draft articles.[43] The draft treaty text suggests rules for harmonisation of substantive patent criteria – notably the pre-grant issues. This draft from the Enlarged B-Group or B+Group builds largely upon the draft SPLT developed in the SCP. At a previous meeting the B-Group discussed and concluded on the topics on which they agree. This signals that the pre-grant issues are going to be negotiated further and probably agreed to in this small group of developed countries outside the WIPO. The lack of formal status of such a group pre-meeting makes it particularly difficult to follow these negotiations.

A possible next step towards a worldwide patent system could be an agreement on the pre-grant issues in the Enlarged B-Group. If the Enlarged B-Group had reached such a consensus, it would clear the way for harmonisation among the three largest patent systems of the world, the USPTO, JPO and EPO, and some countries with economies in transition. If reaching consensus in the Enlarged B-Group, such consensus could be transformed into a formalised multilateral agreement signed and in force in the countries of the Enlarged B-Group but kept open for other countries to become members. This could prepare the ground for an intermediate "Enlarged B-Group" or "trilateral" universal patent system, which eventually could become a worldwide universal patent system. Therefore, consensus on the pre-grant issues in the Enlarged B-Group would imply a big step towards a worldwide patent system.

It is a major problem for developing countries if these harmonisation negotiations are held less formally, outside the WIPO where they are not represented. Thence they are without any chance to state their opinion. This exposes them to the possibility of suddenly being presented with a compromise among the countries of the Enlarged B-Group as a *fait accompli* – take it or leave it – for how substantive patent law is to be harmonised globally. And as Dutfield has noted: "And as recent history shows, what the US, EU and Japan agree upon, the world will surely have to accept."[44]

In fact, such a negotiation pattern is not very different from what happened in the negotiations of the TRIPS Agreement in the Uruguay Round of the GATTS. The text of the TRIPS Agreement was negotiated and brought forward in a small group of countries, then presented to the whole group late in the consensus-building process.[45] There is a good chance for history to repeat itself in this round of harmonisation of patent law. If the Enlarged B-Group reaches consensus it will be very hard for developing countries to alter the agreed rules for the pre-grant issues. This

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draws a pretty sad and pessimistic picture for developing countries. The question is why should developing countries bother – could they decide not to become members of an Enlarged B-Group universal patent system? There are three features to indicate that this might become difficult, and these are discussed below.

Bilateral and Regional Trade Agreements

In addition to the multilateral level, there are ongoing bilateral and regional trade negotiations. These arenas are foremost trade negotiations, but they might become important for establishing a worldwide patent system. Since the TRIPS Agreement entered into force the world has seen examples of single developing countries and groups of developing countries entering into bilateral trade agreements where they accept stricter intellectual property rights standards than they are obliged to under the TRIPS Agreement. Harmonisation of patent law has been brought into the negotiations of a general bilateral trade agreement (so-called TRIPS Plus).

Often, too, bilateral trade agreements include an obligation to become a member to other international agreements, *e.g.*, South Korea is obliged by bilateral trade agreements with the US to become a member of the UPOV Convention of 1991 on intellectual property protection of plant varieties. These experiences could be used to force countries to become members of a universal semi-global patent system. Bilateral trade agreements could be a future tool to get more developing countries to agree on harmonisation of the patent criteria or even to oblige developing countries to become members to a universal patent system. This could prove to become a useful political/legal tool to promote membership to a worldwide patent system. Lack of compliance with a bilateral trade agreement will typically be regulated in the agreement and be sanctioned bilaterally and thus efficiently enforced.

Regional Patent Offices

There are already regional patent offices with the authority to grant patents with direct effect on behalf of their member countries.[46] The idea of universal patent bureaux with authority to grant patents valid for more than one nation state has matured over time, so it is not a completely new or strange idea. These regional patent offices could easily become part of a semi-global world patent system, increasing the number of developing country members to a universal world patent system.

The Potential of the TRIPS Council in Promoting a Worldwide Patent System

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) obliges all members to the WTO to provide patent protection for all fields of technology (except for some narrow exemptions). The principle of sovereignty in international law gives each country the formal right to determine independently whether to ratify and become a member to a worldwide universal patent system. This will also be the formal point of departure if the Enlarged B-Group reaches some degree of consensus to establish a semi-universal patent system.

This formal sovereignty including the freedom for developing countries not to subscribe to such a semi-universal patent system could come under pressure from existing obligations according to the TRIPS Agreement. According to TRIPS Article 27, "patents shall be available for any inventions". All member countries are obliged to provide for patent protection in their jurisdiction. The obligation is neutral, whether a country fulfils the obligation by having a country-specific patent system or by subscribing to a universal world patent system. To establish and maintain a patent system requires funding and human capacity. Several least developed countries have been granted a later deadline for meeting the obligation of having a patent system.[47] If a semi-universal system for the grant of world patents is in place when this obligation is enforced, membership to that system could appear as an easy way for least developed countries to meet the obligation according to the TRIPS Agreement. Efficiency could thus become a political argument for developing countries to become a member of a world patent system instead of spending resources on maintaining a national patent system. Thus, the combination of legally binding obligations (the TRIPS Agreement) and political pressure might prove to be effective tools in respect of increasing the number of developing countries that subscribe to a universal patent system.

Concluding Remarks

Based on these analyses I have identified the following four steps as those required before a worldwide patent bureau can grant the first world patent:

- Change the authorisation of the WIPO Bureau from being a fact-finding bureau to one with the competence to grant patents (or agreeing that the trilateral offices are to share the role as a universal bureau);
- Harmonise the pre-grant issues, as prior art, novelty, inventiveness, industrial application, grace period and the right owner of the patent;
- Make national decisions recognising and accepting the universal world patent granted by the worldwide patent bureau (ratification or membership);
- Establish a system for reviewing and revoking a patent after it has been granted (although this is not immediately necessary for granting patents).

These are the core elements that are yet to be put in place before a worldwide universal patent system can start to grant universal patents.

The combination of granting world patents globally and enforcing them locally would be the genius of a universal world patent system. Currently, there exist no other legal mechanisms where a global bureau can alter the legal situation among the private and public parties without doing it through individual acts of each nation state. The General Assembly of the United Nations or its Security Council does not have such an authority. The human right boards of appeal or the International Criminal Court do not even have such competence. A universal world patent bureau would change the legal position between private and governmental parties in a manner which today is only known

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through national public authorities – the executive branches of national governments.

Such a supranational system would break radically with the present system of international law. The basic principle in international law is that states are the subjects of law. Private citizens are not automatically bound by international treaties. An international agreement must be transferred into national legislation to alter the legal situation between private parties. If a world patent bureau is authorised to grant patents, this will break with the current system in international law in establishing a law level above that of the nation state; it will be supranational. Clearly, the entry into force of such a universal world patent system would require consent and ratification by the countries subscribing to the system. Thus, the entry into force of the universal patent system will look like a regular type of international treaty, but it will function in a far more dynamic manner. From the perspective of the CBD, it would probably reduce the CBD's chance to achieve fair and equitable benefit sharing as a measure for conservation and sustainable use of biological diversity.

Dutfield has noted that: "The world is definitely not ready for harmonising substantive patent law."[48] He concludes this from a historical analysis and comparing economic growth in five European countries at their time of rapid industrialisation. He compares their need for flexibility through their phase of most rapid development with the need for national priorities taken by developing countries.

A universal world patent system is not formally on the agenda. However, from time to time references are made to such a universal world patent system; for example, James E. Rogan, Director of the USPTO, stated that: "[the] foundation for an international patent system exists in the Patent Cooperation Treaty … and the Patent Law Treaty … and the TRIPS Agreement".[49] I have identified tendencies in global patent discussions and negotiations pointing towards this as a logical next step in patent law harmonisation and globalisation of law. If such a system is designed in a small group, for example, by the trilateral offices or in the Enlarged B-Group, there is a good chance of a universal world patent system being developed to suit a narrow range of interests, foremost those of multinational companies, rather that taking into account all types of private and public innovation and all levels of economic development. There is a need for open global debate of whether a supranational universal world patent system should be the next step in the globalisation of law.

References

Akehurst, Michael, 1997. *Akehurst's Modern Introduction to International Law*, seventh revised edition. Revised by Peter Malanczuk. Routledge, New York.

Brownlie, Ian, 2003. *Principles of Public International Law*, sixth edition. Oxford University Press, New York.

Cassese, Antonio, 2001. *International Law*. Oxford University Press, New York.

Barton, John H., 2003. *A World Patent System*. Paper prepared for a conference at Duke University School of Law, 4–6 April.

de Carvalho, Nuno Pires, 2005. *The TRIPS Regime of Patent Rights*, second edition, Kluwer Law International, Dordrecht.

Chisum, D.S.N., Craig, Allen, Schwartz, Herbert F., Newman, Pauline & Kieff, F. Scott, 1998. *Principles of Patent Law*. New York, Foundation Press.

Correa, Carlos, 2004. *The WIPO Draft Substantive Patent Law Treaty: A Review of Selected Provisions*. Working Papers 17, South Centre.

Drahos, Peter, 2005. "Death of a Patent System – Introduction", in *Death of Patents*, ed. Peter Drahos, Queen Mary Intellectual Property Institute, London, pp. 1–11.

Dutfield, Graham, 2005. "Is the World Ready for Substantive Patent Law Harmonisation?" In *Death of Patents*, ed. Peter Drahos, Queen Mary Intellectual Property Institute, London, pp. 228–249.

Matthews, Duncan, 2002. *Globalising Intellectual Property Rights – The TRIPS*. Routledge, London.

Rogan, James E., 2002, *Global Recognition of Patent Rights*. Speech at the WIPO Conference on the International Patent System, 26 March 2002, available at http://www.wipo.int.

Shaw, Malcolm N, 2003. *International Law*, fifth edition. Cambridge University Press, Cambridge.

Tvedt, Morten Walløe and Young, Tomme Rosanne, 2007 (forthcoming). *Beyond Access – A Legal Analysis of the Fair and Equitable Benefit-Sharing Commitment in the CBD*. IUCN, Bonn.

Tvedt, Morten Walløe, 2006. "Element for legislation in user country to meet the fair and equitable benefit-sharing commitment". *Journal of World Intellectual Property* Vol. 9, No. 2, pp. 189–212.

Tvedt, Morten Walløe, 2005. "How will a substantive patent law treaty affect the public domain for genetic resources and biological material?" *Journal of World Intellectual Property*, Vol. 8, No. 3, May, pp. 311–344.

Westerlund, Li, 2001. *Biotech Patents –Equivalency and Exclusions under European and US Patent Law*, Juridiska fakulteten vid Stockholms universitet, Stockholm.

Notes

1 Tvedt 2005.

2 Dutfield 2005, at pp. 247–249.

3 Akehurst 1997, pp. 17–18, Brownlie 2003, pp. 287–289, Chapters 14 and 15, Cassese 2001, pp. 88–91, Shaw 2003, Chapters 12 and 13.

4 The European Union has certain features that indicate such a supranational competence, but these rules do not apply globally, only for member states.

5 Document WIPO/SCP/11/5.

6 The document is available at www.ip-watch.org/files/Group B+ Chair's Draft Nov.doc. See also http://www.jpo.go.jp/torikumi_e/kokusai_e/splt_meeting_0603.htm.

7 Dutfield 2005, pp. 228–232.

8 Chisum *et al*. 1998.

9 Dutfield 2005, pp. 247–249.

10 Barton 2003.

11 Akehurst 1997, pp. 17–18, Brownlie 2003, pp. 287–289, Chapters 14 and 15, Cassese 2001, pp. 88–91, Shaw 2003, Chapters 12 and 13.

12 TRIPS Agreement Article 29, however, specifies that the import of the relevant invention is covered by the exclusive right. This introduces an international element of the scope of the patent right in the current system. Also a granted patent in one country could preclude the grant of an invention to the same invention in another country.

13 This terminology is used in the Standing Committee on Patent Law in the WIPO.

14 For example, in Europe, European patents are granted by the EPO, while patents are enforced under national patent systems and patent offices.

15 See their web pages: the European Patent Organisation (EPO) http://www.european-patent-office.org/_new_off_comm/index.en.php, the African Intellectual Property Organisation (OAPI) http://www.oapi.wipo.net/doc/en/bangui_agreement.pdf , the African Regional Intellectual Property Organisation (ARIPO) http://www.aripo.org/, the Eurasian Patent Organisation (EAPO) http://www.eapo.org/eng/news/index.html.

16 See, for example, the European Patent Convention (EPC) Article 2, paragraph 2: "The European patent shall, in each of the Contracting States for which it is granted, have the effect of and be subject to the same conditions as a national patent granted by that State, unless otherwise provided in this Convention."

17 Patent Cooperation Treaty Article 1 establishes a Union for: "filing, searching, and examination, of applications for the protection of inventions, and for rendering special technical services."

18 Patent Cooperation Treaty of 19 June 1970, last modified 3 October 2001, with the supplementing Regulations under the Patent Cooperation Treaty of 1 January 2004.

19 Since the WIPO is a member organisation countries must agree to or at least accept such a step of expanding its authority. All members of WIPO do not necessarily need to agree to such a global system. WIPO already administers treaties that not all the member countries have ratified, and could very well grant partially universal patents in an interim époque.

20 PCT Article 16 reads: "International search shall be carried out by an International Searching Authority, which may be either a national office or an intergovernmental organisation, such as the International Patent Institute, whose tasks include the establishing of documentary search reports on prior art with respect to inventions which are the subject of applications."

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21 According to document PCT/MIA/VI/8, the patent offices of Austria, Australia, China, the European Patent Organisation, Spain, Japan, Russia, Sweden and the US are International Searching Authorities. The agreement is to be renewed in 2007.
22 PLT Article 5.
23 PLT Article 6.
24 PLT Article 7.
25 PCT Article 5 and 6, with detailed supplementing regulation in the Regulations to the PCT rules 5 and 6.
26 Draft Substantive Patent Law Treaty, latest version, in WIPO document SCP/10/2.
27 For an analysis of the relationship between the draft SPLT and the public domain to genetic resources, see Tvedt 2005, at pp. 311–344.
28 See the Summary by the Chair, in WIPO document SCP/11/5, paragraphs 10 (Italy on behalf of the B-Group) and 12 (Singapore).
29 Summary by the Chair, in WIPO document SCP/11/5, paragraphs 9 (Argentina, with the support of other countries) and 20 by Venezuela; see also paragraphs 11, 13, 14 and 15. For a complete summary of the discussions see the final report which is awaiting approval by the member countries.
30 Report from SCP; WIPO document SCP/10/11, paragraph 19.
31 See, for example, WIPO document SCP/11/3, listing the four topics: prior art, grace period, novelty and inventive step, as to be discussed in the SCP in a first round of negotiation. See, for example, the point made by Argentina in WIPO document SCP/10/11, paragraph 32, and by other developing countries in the same document.
32 The Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure, Budapest, 28 April 1977, and amended on 26 September 1980.
33 Http://www.wipo.int/edocs/prdocs/en/2006/wipo_pr_2006_470.html.
34 Tvedt 2006 and Tvedt and Young, forthcoming.
35 The draft SPLT suggested that: "[(1) [*Requirements Concerning Parts of Application*] (a) Except where otherwise provided for by this Treaty and the Regulations or the Patent Law Treaty, no Contracting Party shall require compliance with any requirement relating to the request, description, claims, drawings or abstract of an application different from or additional to the requirements relating to the request, description, claims, drawings or abstract which are provided for under the Patent Cooperation Treaty in respect of international applications.", Article 5 (1) (a) Draft SPLT, SCP/10/4, p. 10.
36 Articles 11 (1) – (4), Draft SPLT, SCP/10/4, p. 21; Rule 12 (2), Draft SPLT Regulation, SCP/10/5, p. 22; Rule 13 (1) – (2), Draft SPLT Regulation, SCP/10/5, p. 23. For a more detailed discussion of these suggestions and their effect on genetic resources, see Tvedt 2005, pp. 336–339.
37 See Tvedt 2005, at pp. 311–344.
38 Suggested in *inter alia* WIPO documents SCP/11/3, WO/GA/31/10 (document presented to the WIPO General Assembly) and SCP/10/9 by the Trilateral Offices.
39 An almost identical suggestion has been proposed a number of times. The last time this suggestion was put forward in the SCP was at the meeting held on 10–12 April 2006 in the informal session set up by the General Assembly to bring forward negotiations. It was also attempted to be brought into consensus through an informal intersessional meeting in Casablanca with a small group of countries. All these attempts to get developing countries to agree to fragmentise the agenda failed.
40 See, for example, WIPO documents SCP/11/4 and SCP/11/5, paragraph 9, referring to the statement of *inter alia* Argentina.
41 SCP/10/9, Proposal from the United States of America, Japan and the European Patent Office regarding the Substantive Patent Law Treaty (SPLT). See also the introduction to the Summary of the 24th Trilateral Conference, Tokyo, 17 November 2006.
42 Summary of the 24th Trilateral Conference, Tokyo, 17 November 2006.
43 About his work see http://www.ip-watch.org/weblog/index_test.php?p=448, document B+/PL/3/2.
44 Dutfield 2005, at p. 230.
45 For a profound discussion of this negotiation process, see Matthews 2002.
46 For the member countries of the European Patent Organisation, a patent can be granted for several countries at the same time. There is a similar system administered by the OAPI, the African Organisation for Intellectual Property, which grants patents that are valid in 16, mainly francophone, West African countries.
47 TRIPS Agreement Article 66 supplemented by *inter alia* the decision of 27 June 2002, by the Council for TRIPS supplementing the transition period for certain branches.
48 Dutfield 2005, p. 249.
49 Rogan 2002, quoted by Drahos 2005, at p. 6.

The Need for Further International Environmental Action on Mercury

by Rebecca Lewis*

For decades, scientists have acknowledged mercury toxicity. At the onset of the environmental movement in the 1970s, the United States Environmental Protection Agency (US EPA), the United Nations Environment Programme (UNEP) and the World Health Organisation (WHO) identified mercury as a significant concern. Inadequate knowledge about the sources of mercury and how it travels through the environment delayed necessary action in the past and continues delaying action today. Recent scientific data confirms the long-range impact of mercury emissions and the harmful effects of low-dose exposure on human health.[1] Due to the persistence of elemental mercury in land, water and air, the negative effects on human health, and the international effects of the mercury cycle, coordinated international action to address mercury pollution is necessary.

In recent years, international attention to mercury has risen following scientific research indicating the toxicity of mercury and the international scale of deposition. Though the scientific consensus is growing and heavy metals have received attention in the global environmental regime, current strategies do not yield significant changes in the global supply and demand of mercury. Given the nature, sources and deposition of mercury, this author believes that any attempt less than an international agreement will be largely unsuccessful in addressing mercury pollution.

Scientific Background

Sources

There are four major sources of mercury in the environment:[2]

1. Natural release from volcanoes and the erosion of rocks;
2. Current anthropogenic release as a by-product of burning fossil fuels and treating and recycling minerals;
3. Current anthropogenic release from intentional uses and the disposal of mercury in processes such as mining, iron and steel manufacturing, consumer products, and chlor-alkali production;
4. Re-release from historical anthropogenic deposits in soil, sediment, water and landfills.

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As industrialisation and development have progressed, anthropogenic sources have increasingly contributed to the incidence of mercury in the atmosphere. Mercury concentrations in the environment have increased threefold since the industrial era began.[3] Of anthropogenic sources, fossil fuel combustion accounts for two-thirds of mercury emissions.[4] Of the four sources, only anthropogenic releases from fossil fuels and intentional uses in mining can be reduced through regulatory action. Though anthropogenic sources are certainly to blame for the rising problem, the amount of activity caused by humans is uncertain.[5] This uncertainty has delayed action towards an international environmental agreement. Internationally, Asia accounts for 54% (China alone accounts for 28%) of anthropogenic emissions, Africa 18%, and Europe 11%.[6]

Deposition

Different species of mercury affect global and local cycles to varying degrees.[7] Effects of elemental mercury are global as this form of mercury persists in the atmosphere for months and up to a year.[8] Upon emission into the air, elemental mercury travels freely through the atmosphere often depositing far from the point of release. The fact of mercury's free movement across nation-state boundaries through the atmosphere and transboundary effects forms the basis for the author's belief that this problem can only be addressed with a global instrument.

Impact on Living Organisms

Upon deposition, mercury potentially interacts with microbes or abiotic processes to form methylmercury. Affecting whales, birds and the reproductive functions of fish in ecosystems, methylmercury is most problematic.[9] Mercury found in living organisms is concerning because of bioaccumulation and biomagnification. Bioaccumulation is the tendency to collect in organisms. Biomagnification refers to higher concentrations in predatory fish and fish-consuming mammals.[10]

Human exposure occurs primarily through fish consumption.[11] Human exposure may also occur in mining, chemical production, contact with consumer products or diet. In humans, mercury causes neurological, developmental and cardiovascular problems. Because mercury passes through the placental barrier, it is most concerning for pregnant women.[12] Low dosages of mercury have severe effects on the developing brains of foetuses, infants and young children.

Available Methods of Curbing Emissions

Of the previously stated sources of mercury in the environment, scientific inquiry explores only current anthropogenic releases. Similarly, political strategies are constrained by the limitations of scientific knowledge.

Responses by technology and legal institutions are designed either to control mercury use and emissions or prevent use. Control of emissions occurs through end-of-pipe technology and waste management while the prevention of emissions centres on consumption and substitution.[13]

Consumption

Educating consumers and businesses about energy efficiency can reduce fossil fuel use and decrease emissions from the front end. Consumers are encouraged to use less of certain products and processes.

Substitution

Currently, there are cost-effective substitutes to replace nearly all consumer products containing mercury. Renewable fuels, natural gas, and burning coal at a lower sulphide level all provide cost-effective alternatives to coal combustion.[14]

End-of-pipe Controls

For coal-burning power plants, exhaust gas filtering and scrubbers can reduce the total amounts of mercury emitted. Installing technologies to reduce nitrogen oxide and sulphur dioxide emissions resulted in co-benefits of fewer mercury emissions.

Waste Management

Waste disposal strategies target medical waste, consumer product disposal, and residues recovered from end-of-pipe controls. Because mercury is elemental[15] and information about storage is limited, isolating and storing mercury in an intermediate location is currently the best option available.

Government officials can institute legal limits on consumption, fund education efforts and provide funding for research and development of new technologies, or provide tax incentives to implement new technologies.[16] Political approaches target the environmental quality of soil, water and air, aiming to define and require action by sources, as well as to regulate releases, impose product controls and create systems for consumer and occupational safety (*e.g.*, fish consumption advisories).[17]

Current International Legislative Regime

As early as the 1970s, international conventions identified mercury as a harmful pollutant and sought to limit emissions. In 1973, the Organisation for Economic Cooperation and Development (OECD) required that member countries reduce anthropogenic mercury emissions to lowest possible levels.[18]

Despite early lip-service to curbing mercury emissions, action in the 1970s and 1980s was limited. In the 1970s, little was known about how mercury acts in the environment, how to curb emissions, or scientific estimates about human toxicity. A growing body of scientific knowledge pushed the issue to the global agenda in the early 1990s.

Currently, a complex international regime of regional conventions, bilateral agreements and national controls regulates mercury. Though mercury has been on the international agenda for forty years, no binding international agreement has yet been adopted.[19]

The United Nations Economic Commission for Europe (UNECE) meeting on Long-Range Transboundary Air Pollution (LRTAP) in 1998 included mercury in the Aarhus Protocol on Heavy Metals.[20] The protocol set binding com-

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mitments to reduce emissions and implement best available technologies. Canada, the USA, and European states have all signed the protocol.[21]

Significant negative effects in the Arctic incited the Arctic Monitoring and Assessment Program (AMAP), prioritising mercury as a pollutant.[22] AMAP urged international assessment and action regarding mercury. At the request of AMAP, the UNEP Chemicals Division compiled and released a comprehensive Global Mercury Assessment in 2002 evaluating available information and suggesting the best approach for handling the international mercury problem.

Your old thermometer may be bound for the Museum:

On 14 November 2006, the European Parliament agreed to a first reading of a draft directive outlawing the sale of certain measuring devices containing mercury. The bill would ban the sale of certain new non-electrical measuring devices such as medical thermometers and barometers. Backed broadly by the Environment Committee, the legislation was hoped to be approved so as to enter into force and reduce industrial demand for mercury as quickly as possible. However, the measure was not enacted following the first reading, and a consensus position must now be adopted with the Council before the draft directive returns to Parliament for second reading.

A full text of the current parliamentary draft directive A6-0287/2006 can be found online at http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A6-2006-0287+0+DOC+PDF+V0//EN&language=EN .

In 2005, the Arctic Council Action Plan to Reduce Pollution of the Arctic (ACAP) released the Arctic Mercury Releases Inventory reporting releases, uses, and disposal of mercury in eight Arctic countries. The report also assesses contributions by each country and discusses legislation and technical measures to reduce mercury.[23]

In 1998, New England Governors from the USA and Eastern Canada Premiers issued the Mercury Policy Project.[24] This aggressive joint action sought total emission reductions of 50% of 1998 levels by 2003.[25] A Regional Mercury Task Force is responsible for implementation and monitoring. Following immediate implementation, mercury emissions fell 55%, leading to a new goal of 75% by 2010.[26] In North America, the Commission for Environmental Cooperation seeks to reduce man-made sources through risk management, technology and communication.[27]

Realising the global nature of mercury emissions, the US EPA has pushed for bilateral agreements between the USA and Japan, Russia and the Arctic Council, the USA and China, and the USA and India.[28] Overall, the U.S. focuses on partnerships in five areas: chlor-alkali production, products, coal utilities, artisanal and small-scale mining, and air transport and research regarding the 'environmental fate' of the chemical in the ecosystem.[29] The USA has focused on partnerships in Japan, Canada and India, because of the combination of the lack of a regional agreement and escalating use of fossil fuels in these countries.

In developing countries, the United Nations Industrial Development Organisation (UNIDO) monitors residual mercury pollution from gold mining through the Global Mercury Project. UNIDO provides information and technology to miners about existing methods that decrease pollution.[30] Recently, UNIDO issued a report to the UN reporting current trends in the supply and demand of mercury in mining and identifying a goal of eliminating mercury consumption by 50% by 2017.[31] Achieving this outcome will require national governments to commit to controlling the trade of mercury and to invest in capacity building to encourage technological transition.

In the USA, regulation of medical waste, municipal incinerators, and chlor-alkali production have led to a 45% decrease in emissions over nine years.[32] In 2005, the US EPA issued the Clean Air Mercury Rule (CAMR). This rule uses a cap and trade approach for reducing emissions from coal-burning power plants by 2018.[33] Internationally, CAMR is the first rule regulating mercury emissions from coal-fired power plants. Beyond national action, the USA has played a major role in bilateral negotiations and regional initiatives.

Since 2004, the EU has been negotiating a mercury strategy attempting to affect use, trade in, and disposal of, the element. In June 2007, the EU will vote on a proposal seeking a ban on the export of mercury by 2011 and requiring safe storage of mercury used or produced by certain activities.[34]

As a result of LRTAP and regional agreements in North America, mercury emissions are decreasing in North America and Europe. A lack of regulation and increased use of fossil fuels in Asia and Africa coincide with increasing emissions.[35]

Though regional mechanisms decrease the use and emissions from those areas, the effect on the global pool is marginal. Without a global commitment, attempts at regulating atmospheric emissions will be mostly ineffective. As developing countries implement technology and increase energy usage, atmospheric emissions are expected to escalate.[36] Asian countries – reportedly responsible for over 50% of the anthropogenic emissions – are not party to any of the major regional mechanisms. ➳

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Recent Developments in the International Arena

Strategic Approach to International Chemicals Management

In 2006, the UN Governing Council adopted the tripartite Strategic Approach to International Chemicals Management (SAICM). SAICM includes: the Global Program of Action, the Overarching Policy Strategy, and the Dubai Declaration on International Chemicals Management.[37] Together, these three components establish principles for the life-cycle management of chemicals. SAICM seeks to minimise adverse effects of chemical use and production on human health and environment by the year 2020.

Objectives, targets and potential implementation mechanisms are identified for a variety of chemicals. To support initial capacity building and technology transfer, the Quick Start Programme is established.[38]

Regarding mercury, risk reduction will be achieved through: 1. Addressing human risks through the review of relevant studies; 2. Considering the need for further action; 3. Taking immediate action to reduce risks to humans and the environment at the global scale; 4. Reviewing scientific information on long-range environmental transport of mercury.

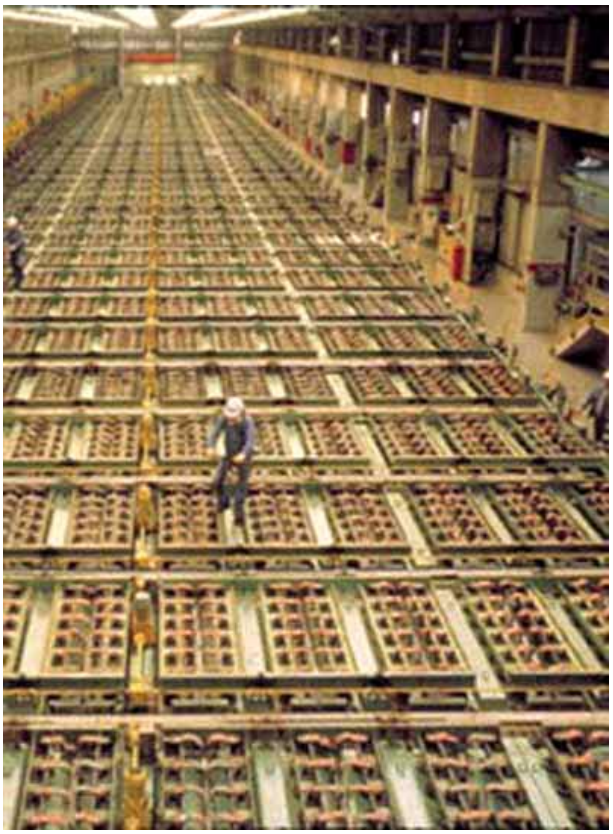
Intergovernmental Forum on Chemical Safety: Budapest Statement on Mercury, Lead and Cadmium

In September 2006, the fifth session of the World Health Organisation-sponsored Intergovernmental Forum on Chemical Safety was held in Budapest.[39] In the final report, the *Budapest Statement on Mercury, Lead and Cadmium* was adopted. In the statement, the human and environmental harms of heavy metals were acknowledged, and current policies towards reducing mercury were deemed insufficient. The report calls on UNEP to take further action by encouraging voluntary programmes and partnerships, and to consider the establishment of a legally binding policy.[40]

UNEP Governing Council Meeting

Recent international consideration of mercury and other heavy metals through SAICM and the Budapest Statement set the stage for discussion at the UNEP Governing Council Meeting in Nairobi in February 2007.[41] On the basis of information provided to the Council, the UNEP director[42] is urged to produce a comprehensive report on mercury emissions and promote partnerships. The Council noted that recent international attention to partnerships has led to progress in small scale mining, coal combustion, reduction of mercury in products, and air transport and fate research.[43] While hailing the early successes of these partnerships, the final decision reiterates that current measures are insufficient to approaching the global problem and supports the need for further action, including the possibility of future reconsideration of proposals for other measures or possibly a new international legal instrument – issues that were specifically taken off the table at the current meeting.[44] The decision emphasises the demand for more information regarding the movement of mercury on a global scale, encouraging countries to gather information on reducing the various mercury-related risks. To this end (and others), the Council's decision called for the establishment of an *ad hoc* open ended working group on mercury,[45] to study options for strengthening voluntary measures and new and existing legal instruments.[46]

This final document emerged as a result of compromise between these leading parties: EU countries and Switzerland and Norway, seeking a legally binding instrument;[47] the USA, seeking the extension of partnerships;



Although chlor-alkali plants are only responsible for 5% of mercury emissions in the atmosphere, chlorine producers in Western Europe have agreed not to build any new mercury processing plants, and many are looking at economically viable alternatives in order to comply with a total phase out of the mercury process by 2010 Courtesy: SPG Media

and developing countries expressing concern for common but differentiated responsibility and urging technology transfer and capacity building assistance.[48] In the end, objections by the USA, Japan, Canada and Australia prevented steps towards a global binding agreement.[49]

Alternatives for International Action in the Future

Continuation of Decentralised Action at National and Regional Levels

The decentralised approach to mercury regulation at regional and national levels would continue. UNEP involvement would focus on regional agreements and urge partnerships. Countries wishing to contribute to the re-

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duction of mercury would participate while those who believe it is too costly would abstain. Research on mercury would continue at a slow pace and substitutes would be implemented as they became cost-effective.

This approach offers a solution that is more politically feasible to implement than an international agreement. Regions most affected by mercury pollution, like the Arctic, would continue to see increases because of the nature of deposition. Other geographic areas would notice some positive effects of national and regional action. In the long term, increased industrialisation of developing countries using fossil fuel energies would cause an overall increase of mercury emissions.

Despite awareness of the global effects of mercury pollution, the US EPA prefers this approach promoting bilateral agreements and regional action.[50] At the 24th Session of the UNEP Governing Council, Australia, Canada and Japan sided with the USA, agreeing that voluntary action through partnerships is currently the best method in seeking reduction. The EU opposes this strategy, seeking legally binding action to address the mercury problem.

International Action under a Global Action Plan

Under SAICM, decentralised international actions from various international organisations are oriented towards achieving the long-term goals of achieving reduction of risks to human health and environment. Thus, the cumulative effect of actions by WHO, UNEP and UNIDO will achieve the goals of SAICM.

This multi-sector approach has illustrated success thus far in serving as an organisational force for decentralised action. However, regarding mercury, SAICM text does not include firm wording that addresses suggested actors, timelines, or indicators of progress and implementation as these topics were not fully discussed with sufficient time to achieve agreement.[51]

Lacking self-enforcement mechanisms to achieve its goals and functioning disparately from other agreements, the success of SAICM is contingent on the agreements achieved by UNEP, UNIDO and WHO. Given that SAICM presents an action plan and policy strategy, international support for reducing the risks of the chemical is generally strong, despite difficulties in reaching decisions during discussions in February 2006. While countries generally agree that further action is necessary to address global mercury, they disagree about the best approach to achieving this objective.

Negotiating a Binding International Agreement

Relying on recent information regarding hazardous effects on a global scale, negotiations to implement a binding international agreement on mercury continue to be sought by many parties and observers. Negotiations would seek both a gradual ban and the substitution of mercury in consumer products, integrating existing instruments, where possible. Scrubbers and exhaust gas filters would be installed in coal-burning power plants, and in the long term, natural gas or renewable fuels would replace coal. In the developing world, industrialised nations would provide technology assistance and capacity building, through the Quick Start Programme of SAICM. Best-available technologies would be used in products, processes and by-products. Funding would be provided for further research to fill information gaps and develop new technologies.

Immediate global action provides indispensable short-term and long-term benefits for both humans and ecosystems by reducing input to the global pool of mercury. The intensive Global Mercury Assessment of 2002 concludes immediate action on a global scale is necessary, stating that national and regional actions are insufficient,[52] presumably given the ineffectiveness of decentralised regulation of a chemical moving through the atmosphere globally. Because the effects of human actions are not immediately measurable, international awareness of the total effects of mercury emissions is lacking. In adopting an international instrument, awareness of the global scale of mercury will improve, and political will should escalate.

Co-benefits of cleaner fuel include a decrease in the emission of the greenhouse gases sulphur dioxide and nitrogen oxide. At the very least, research would facilitate a better understanding of mercury on a global scale, allowing complete evaluation of risks.

This approach would be costly to businesses and possibly consumers. Funding would be necessary to aid developing countries in technology transfers. A method of "leapfrogging" to cleaner technologies in the developing world would be used as much as possible. Filling information gaps would require a great investment in research. Some argue that action should be delayed until the global effects of each species are understood, and cost-effective technology to curtail these emissions has been developed.

A heavy burden would fall on slow-acting countries accounting for a large percentage of emissions, like China. To tackle this problem, targets would be based on a percentage of emissions, not a raw figure. To appease business interests and push for compliance, a "cap-and-trade" approach could be used to curb emissions. Though cap-and-trade ignores the localised effects of pollution, a decrease in the global pool would be beneficial.

EU nations, Norway, Switzerland and most developing countries support a legally binding instrument, though the support of developing countries is contingent on the inclusion of mechanisms for technology transfer and capacity building. The United States has expressed opposition to an international convention on mercury, favouring a decentralised approach, and suggesting that the time is not yet ripe for a legally binding mechanism.[53]

Recommended Approach

Hard scientific evidence indicates that mercury is global in nature and toxic to humans. The most comprehensive study to date, the Global Mercury Assessment, concludes that regional and national actions are inadequate. Acknowledging a lack of complete information or consensus, the Assessment states that the nature of adverse effects to humans demands international attention.[54] While national actions lead to slight reductions in the global pool, coordinated international commitments are needed to address global concerns. ➳

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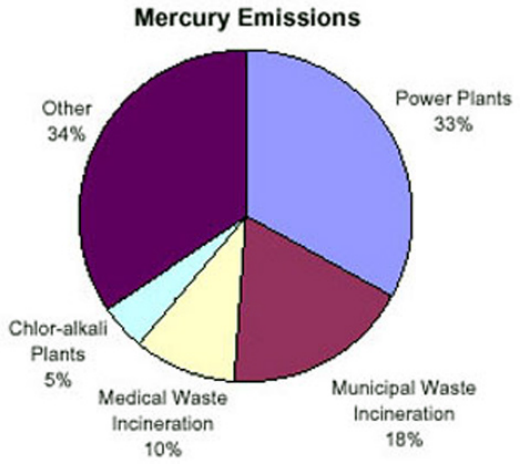
Reliance on the current decentralised framework delays curbing the problem of mercury use and emissions. SAICM offers an effective strategy for utilising a multi-sector approach to reducing the risks of mercury. In the interim, SAICM will lay the groundwork for establishing an international agreement by encouraging research and assisting in technology transfer and capacity building. To address global mercury at the international level successfully, a global



Mercury was used as a negative electrode or cathode that works with a titanium anode to keep apart the highly reactive products involved when electricity is passed through brine
Courtesy: SPG Media

international agreement will be necessary. Though an international agreement did not result from the recent UNEP Governing Council meeting, the establishment of an *ad hoc* open-ended working group is promising.

Mercury is persistent, global in use and effect, and harmful to human health. A strong scientific consensus and new cost-effective technologies indicate that mercury should be the next candidate for international environmental control. Three international actions, SAICM, the Budapest Statement, and UNEP Governing Council, indicate the rising ascendance of mercury as a critical issue in the international sphere. With further research and attempts at technology transfer and capacity building, the resistance of the United States and others must cede.

Notes

1 Noelle Eckley Selin, *Mercury Rising*, *Environment,* January/February 2005, 47:1, pp. 24.
2 United Nations Environment Programme (UNEP), *Global Mercury Assessment,* (Geneva, 2002). http://www.chem.unep.ch/mercury, pp vi.
3 Selin, *supra* n. 1, pp. 25.
4 Elisabeth G. Pacyna, Jozef M. Pacyna, Frits Steenhuisenc, Simon Wilson, *Global anthropogenic mercury emission inventory for 2000*, *Atmospheric Environment,* 2006, pp. 4048.
5 *Id*., pp. 4061.
6 Pacyna *et al.*, *supra* n. 4, pp. 4048.
7 UNEP, *supra* n. 2, pp. 3.
8 Nicola Pirrone and Kathryn R. Mahaffey, eds., *Dynamics of Mercury Pollution on Regional and Global Scales,* Springer Books, 2005, pp. 94.
9 UNEP, *supra* n. 2, pp. 73.
10 *Id*., pp. 72.
11 *Id*., pp. 5.
12 *Id*., pp. 35.
13 *Id*., pp. 135–136.
14 Pacyna *et al.*, *supra* n. 4, pp. 4054.
15 Because mercury is an element, not a compound, it cannot be broken down into a less harmful substance. *See* UNEP, supra n. 2.
16 UNEP, *supra* n. 2, pp. 162–164.
17 *Id*, pp. 174.
18 *Id*., pp. 30.
19 Selin, *supra* n. 1, pp. 24.
20 *Id*., pp. 30.
21 UNEP, *supra* n. 2, pp. 196.
22 Selin, *supra* n. 1, pp. 32.
23 Arctic Council Action Plan, *Arctic Mercury Releases Inventory,* 2005, http://acap.arctic-council.org/media.php?mid=45.
24 New England Governors/Eastern Canadian Premiers, *Mercury Action Plan,* 1998.
25 The Mercury Action Plan has an underlying goal of virtually eliminating anthropogenic sources of mercury by 2010 through six objectives: 1. Establish a Regional Mercury Task Force 2. Mercury Emission Reductions 3. Source Reduction and Safe Waste Management including Recycling 4. Outreach and Education 5. Research, Analysis and Strategic Monitoring 6. Mercury Stockpile Management. See *Mercury Action Plan, supra* n. 25.
26 Resolution 28-7, New England Governors' Conference Inc., 2003, http://www.negc.org/03resolutions/res28_7.html.
27 EPA: Mercury: International Resolutions for Reducing Mercury Emissions and Use, http://epa.gov/mercury/international.htm.
28 Pironne and Mahaffey, *supra* n. 7, pp. 109.
29 United States Progress Report on Partnerships, September 1, 2006, http://www.chem.unep.ch/mercury/partnerships/progress-reports/usa.pdf.
30 Pironne and Mahaffey, *supra* n. 6, pp. 109–110.
31 Global Mercury Project 2006 Report to the UNEP Governing Council Meeting, prepared by United Nations Industrial Development Organisation (UNIDO), http://www.chem.unep.ch/mercury/partnerships/2006%20GMP%20Report%20to%20UNEP%20GC24.pdf.
32 Selin, *supra* n. 1, pp. 31.
33 EPA- Clean Air Mercury Rule- Basic Information, http://www.epa.gov/air/mercuryrule/basic.htm.
34 SCADPlus: Export and storage of mercury, http://europa.eu/scadplus/leg/en/lvb/l28184.htm.
35 Pacyna *et al*., *supra* n. 4 , pp. 4057.
36 *Id*.
37 Strategic Approach to International Chemicals Management Comprising the Dubai Declaration on International Chemicals Management, the Overarching Policy Strategy and the Global Plan of Action, 6 June 2006, http://www.chem.unep.ch/saicm/SAICM%20texts/standalone_txt.pdf. Discussed in EPL, volume 36/2 at page 62.
38 *Id*.
39 Forum V Intergovernmental Forum on Chemical Safety Final Report, Budapest, Hungary, 2006, http://www.who.int/ifcs/documents/forums/forum5/final_report_no_pl.pdf.
40 *Id*., pp 8 and 9.
41 See page 268.
42 Submitted to Council as Document UNEP/GC/24/7 and Information Document UNEP/GC/24/INF/17.
43 "Status report on partnerships as one approach to reducing the risks to human health and the environment from the release of mercury and its compounds into the environment and report on supply, trade and demand information on mercury," UNEP/GC/24/INF/17, http://www.chem.unep.ch/Pb_and_Cd/GC24/K0653912_GC24-INF17_revised.pdf.
44 UNEP-GC 24, Decision 24/3 "Chemicals Management" at para 17 (the decision's entire section on Mercury is included in full in the Selected Documents in this issue). The full para 17 provides "that further long-term international action is required to reduce risks to human health and the environment and that, for this reason, the options of enhanced voluntary measures and new or existing international legal instruments will be reviewed and assessed in order to make progress in addressing this issue."
45 UNEP-GC 24, Decision 24/3, at paras 28–34.
46 *Id.*; a number of such specific options are discussed in "A global framework for international action on mercury, lead and cadmium," Proposal by Norway, Switzerland, Senegal, Gambia and Iceland for the 24th Governing Council of UNEP, January 2007, http://www.chem.unep.ch/MERCURY/GC24/UNEP%20decision%20mercury%2007.01.23_english.pdf.
47 Heavy Metals: Draft Decision submitted by the EU, UNEP/GC/24/CW/CRP.7, 6 February 2007.
48 "Proposed paragraphs for insertion in draft decisions on mercury, lead and cadmium: inputs by Egypt," UNEP/GC/24/CW/CRP 6, 6 February 2007.
49 Summary of the 24th Session of the UNEP Governing Council/Global Ministerial Environmental Forum, Earth Negotiations Bulletin, Vol. 16 No. 60 , Monday, 12 February 2007, http://www.iisd.ca/vol16/enb1660e.html.
50 EPA, *supra* n. 27.
51 SAICM, *supra* n. 36.
52 UNEP, *supra* n. 2, pp. iv.
53 Selin, *supra* n.1, pp. 22.
54 UNEP, *supra* n. 2, pp. 228.

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