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**Awareness Workshop on Intellectual Property Rights
28-29 August 2002
Radisson Hotel, Pointe aux Piments, Mauritius**

Overview

The key to the expansion of the global economy is the contribution of new knowledge as a crucial factor in sustained economic growth and development. Digital technology, the Internet, biotechnology, information technology and communication, as well as a host of other such developments play a critical role in what is termed '*the knowledge economy*'.

In such an economy, incentives for the creation of new knowledge are largely provided through the mechanism of intellectual property rights (IPR). A proper balance between the protection of IPR over such knowledge and its rapid dissemination and assimilation in the productive enterprises is fundamental to the continued growth of the economy.

On August 28-29 2002, the Mauritius Research Council (MRC) organised an Awareness Workshop on Intellectual Property Rights. This workshop was conducted by a team of IPR experts from the Department of Science and Technology (DST), Ministry of Science and Technology, New Delhi, India and involved the collaboration of the Attorney General's Office of Mauritius.

Guest speakers on IPR

Dr R Saha	Adviser and Head, Patent Facilitating Centre, Department of Science & Technology (DST), Ministry of Science & Technology, India
Dr C R Murthy	Director, International Division of Technology, DST, Ministry of Science & Technology, India
Dr H Subramaniam	Patent Attorney
Professor P Ganguli	Patent Attorney

Resource persons from Mauritius

Mr O B Madhub Principal State Counsel, Attorney-General's Office and
Ministry of Justice

Mr N Ramoly Adviser, Ministry of Arts and Culture

Objectives

The objectives of this workshop were to conduct dialogue and share knowledge on IPR, with particular emphasis on the need to:

- (i) sensitise people in Mauritius to IPR issues, and
- (ii) provide an opportunity to address specialist IPR areas that are directly relevant to Mauritius.

The timing of the workshop followed the recent passing of four bills by the Mauritian Parliament on: (i) The Patents, Industrial Designs and Trade Marks Act 2002, (ii) The Layout Designs (Topographies) of Integrated Circuits Act 2002, (iii) The Geographical Indications Act 2002, and (iv) The Protection Against Unfair Practices (Industrial Property Rights) Act 2002.

Day 1

Opening speech

(Dr A Suddhoo, Executive Director, Mauritius Research Council)

The workshop opened to a warm welcome from Dr A Suddhoo, Executive Director of the MRC. Dr Suddhoo reminded the audience that Mauritius was a member country of the Non-Aligned Movement (NAM), and that it had hosted the meeting of the Bureau of the IXth Governing Council of the Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T) on 4-5 September, 2001. He explained that the holding of this workshop was in part related to the subsequent discussions initiated between the MRC and the NAM S&T. MRC, being adviser to the government on S&T, took the step of organising the workshop.

Dr Suddhoo expressed his pleasure on seeing many participants from different fields and took the opportunity to thank all those who had contributed towards defining the content of the workshop. He indicated that there are at the moment two major events occurring in Mauritius that necessitate a good understanding of the subject of IPR, since they will both generate new knowledge:

1. the creation of the cybercity, and
2. the setting up of the National Agricultural Biotechnology Institute.

Dr Suddhoo pointed out that one of the objectives of this workshop was to consider the situation in Mauritius, the existing laws on IPR, and how they protect new knowledge in comparison with the situation on the international scene. He hoped that the discussions would provide an excellent opportunity to tap into the wide expertise of the IPR consultants from India and would stimulate a radically new thinking in the way we approach innovation, research and development.

In conclusion, Dr Suddhoo thanked all those who made this workshop possible and stated that he hoped that by the end of the workshop, there would be potential for developing a national policy on IPR. He then requested Dr Saha to address the audience.

Introductory speech

(Dr R Saha, Adviser and Head, Patent Facilitating Centre, Department of Science and Technology, India)

Dr Saha welcomed everyone. He mentioned that prior to his arrival in Mauritius, his search on patent data published in India revealed one patent application originating from Mauritius, which had been accepted by the Indian Patent Office. Another patent application was still at the examination stage. Dr Saha expressed his agreement with Dr Suddhoo on the fact that a lot of new knowledge is generated in Mauritius and that the situation needs to be looked at closer to see how this knowledge can be protected.

Dr Saha noted that the time allocated for this workshop was limited and reiterated the commitment of the Indian delegation to share its experience and to discuss about the different dimensions of IPR. He thanked the MRC and the Government of the Republic of Mauritius for making this opportunity available, and proceeded with a discussion of the various aspects of IPR.

The following points represent a summary of Dr Saha's intervention:

- Globalisation has erased geographical barriers. With a large market size and different types of populations, each with varying market needs, the product cycle time has been shrinking very rapidly. Depending on the specific needs of each country, the legislation also needs to be tailored accordingly.
- The precursor to World Trade Organisation (WTO), the General Agreement on Tariffs and Trade (GATT), was negotiated by several nations in 1947 and came into effect in 1948. The WTO was set up in 1994 and came into force as from the 1st of January 1995. A basic feature of the agreement under WTO, especially with regard to IPR, is that it is a multilateral agreement among many nations responsible for setting certain minimum standards for trading among member countries. The WTO provides national treatment, in that the same law and treatment is applied to all member countries. The WTO is also involved with agriculture, sanitary and phyto-sanitary measures, which are important fields for Mauritius.
- The WTO has provided many new opportunities for developing countries. As a direct consequence, these opportunities have placed new demands on developing countries, necessitating amongst others, an adequate set up in terms of IPR legislation. However, several of these countries are at a disadvantage since they have not had recent experience in implementing IPR, even though in many instances such laws already exist in some form.
- In these countries, IPR legislation needs to be updated. This has to be carried out to address the current limitations of the IPR legal framework and in several cases, answer some of the concerns indigenous communities have regarding biodiversity, plant varieties and traditional knowledge.
- Dr Saha was in favour of preparing digital databases that can be accessed rapidly, to determine what belongs to or what is inherent to a given country. He was of the view that the monitoring of this development can be thoroughly done in each country based on a centralised system and distributed according to the size of the country.

- Although there are guidelines available through World Intellectual Property Organisation (WIPO) Treaties, Dr Saha stressed the fact that each country would have to devise its own method, accompanied by a proper legal framework for enforcing its rights and to ensure protection in the interest of academics, researchers, technologists, artists, authors, painters, among others.
- Commenting on patents, Dr Saha stated that the element of time was very important and that the application for a patent should be filed as early as possible. The example of India was given, where steps have been taken in the post-WTO period to create awareness among scientists, technologists and policy makers. Technical and financial assistance is provided to scientists for protecting their inventive work. He stated that at present, practically all scientific departments in India, the industry and concerned Ministries are working in this area and close monitoring is maintained. Under this system, academics have filed a number of applications and have had their works protected.
- Further examples were given, including farmers' systems, such as the *National Innovation Foundation* and the *Technopreneur Programme*, designed for the promotion of entrepreneurship and for monitoring innovations at the grass-root level. It was explained that information on IPR was being converted into multimedia format to make it accessible to farmers. By supplementing the information with visuals and text to overcome language barriers, communication had been made easier.
- Dr Saha concluded by indicating that India and Mauritius already have a joint Science & Technology agreement intended for promoting research and development in several areas of interest, and that the two countries have been in close collaboration for a number of years. His expectations were that collaboration at the level of IPR represented a logical extension of the existing agreement and could be followed up easily.

1. Definitions and General Aspects of IPR

(Dr R Saha, Adviser and Head, Patent Facilitating Centre, Department of Science and Technology, India)

The following points provide a summary of this presentation by Dr Saha, intended as a broad introduction to IPR.

Intellectual Property Rights

- IPR is a general term that covers trademarks, copyright, industrial designs, layout designs of integrated circuits, geographical indications, trade secrets and patents. IPR are largely of territorial nature, except copyright (under the Berne Convention), which is globally accepted. The territorial nature of IPR indicates that if the rights are protected in Mauritius they do not extend to any other country unless these rights have been obtained in the concerned countries.
- IP essentially refers to original, new knowledge. Once IP has been protected, it can be used uninterrupted for a fixed period of time, for wealth generation and social transformation.
- Knowledge which is already in the public domain, cannot be protected under any form of IPR known today. However, any improvement made on existing knowledge can be protected by a patent, design or even copyright.
- Most IPR have to be reviewed from time to time, except in the case of trade secrets. Renewal is carried out as provided by the law of the country. For instance, patents have to be renewed every year. IPR have got a very strong bias towards trade and commerce and can be held only by a legal entity. This is a question that needs to be addressed within universities and management institutions to determine whether according to current law, they constitute a legal entity or not. Dr Saha explained that this usually refers to whether the university/institution can buy and sell property. If it is not in a position to buy and sell a property (both movable and immovable property), then it cannot have any IPR.
- Like any other property, IP can be gifted or licensed. The monopoly associated with a particular IPR refers to its exclusive rights and prevents other people from using the IP without prior consent.

Trademarks

- Trademarks have an infinite life. This is perhaps the only right which can be held in several countries simultaneously. As a country member of the Madrid Agreement and Madrid Protocol the same trademark can be protected in a number of member countries with just one application. This does not apply to any other property (movable or immovable) and therefore gives an international dimension to all IPR.
- A trademark is a distinctive sign which identifies certain goods and services as produced or provided by a specific person or a company e.g. Coca-Cola, Pepsi. A trademark can be in the form of words, numerals, drawings, symbols, three-dimensional signs. Even a fragrance associated with a product can be used as trademark. Trademarks are often associated with specific features such as taste, quality, etc. (The Patents, Industrial Designs and Trademarks Act 2002 of Mauritius distinguishes between three categories of marks, namely trademarks, service marks and collective marks.)
- The owner of the trademark has the exclusive right to use it, or to authorise others to use it in return for a consideration.
- As per Trade Related Aspects of Intellectual Property Rights (TRIPs), if a trademark is not used for a period of three years or more, it can be cancelled. The initial registration as per TRIPs is for seven years, after which renewal is required at intervals of seven years. (In Mauritius, a trademark is protected for a period of ten years. Indefinite protection for consecutive ten-year periods may be secured, provided renewal is effected.)

Copyright

- Copyright is a right which is given by the state or the government for original literary work, e.g. a new book. TRIPs states that copyright can also be applied to software algorithms, databases, engineering drawings, plant layout design, mould design for a product. A country member of the Berne Convention does not have to register copyrights anywhere – the copyright comes into effect the moment the work is created.
- Whereas copyright is a right given for the expression of an idea, it does not apply to the idea itself.

Industrial Designs

- Industrial designs represent a form of protection obtained for the external shape or configuration of an article. The duration of protection is 10 years, as per TRIPs.
- Industrial designs require the least time to be protected. All that is required for submission to the concerned office are some photographs of the object from different angles. These will be examined to determine whether the application relates to something new, or if something of similar design has existed in the past, or currently exists.
- It is important to recognise that if a design is not original, if it is not 'significantly different' from the known designs or combinations of new designs, then it will not qualify for protection. Designs dictated essentially by technical or functional character considerations are also not protected, in the sense that the design feature has already been made.

Layout designs for integrated circuits

- Protection of integrated circuits constitutes a relatively new area. It has not featured in the legislation of several countries for many reasons, one of them being the absence of technical knowledge or expertise for the mass design of integrated circuits.
- Contrary to patents, an integrated circuit is allowed to be made available on the market for some time prior to the application for its registration.
- The term of protection in accordance with TRIPs is 10 years.

Geographical Indications

- Geographical Indications (GI) refer to indications which identify a good or goods, as originating in the territory of a member or a region or a locality of the territory where a given quality, reputation or other characteristic of the good is attributable to its geographical origin. The product constitutes a natural or a man-made product, and is characteristic of its geographical location. For example, Champagne, Scotch or Darjeeling Tea.

- Protection under the term GI is similar to that provided by trademarks. GI are given by the state.
- Protection under a GI can only be obtained once the chain of novelty, the reputation or the characteristic of the product has been fully ascertained. If a GI remains unused for a period of time, it can be cancelled.
- It must be emphasised that lots of work will have to be done by each country and each society if they wish to seek protection under GI for particular products. Apart from introducing new legislation, efforts are needed for unequivocally establishing true GI and enforcing respect of this right. Areas that are also likely to require protection include artisans associated with the GI product, traditional knowledge and arts (for example, weaving, knitting, designs).

Trade Secrets

- A trade secret (also referred to as protection of undisclosed information) needs to have a commercial value. Reasonable steps therefore have to be taken to ensure that a trade secret is not leaked out. As an example of the kind of protection or investment, or the steps taken for protecting a trade secret, Coca-Cola was cited. It was explained that the Coca-Cola formulation is not patented and is a trade secret. The formulation of this beverage is kept in a bank safe, which can only be operated under two signatures - these two authorised signatories are never allowed to travel on the same flight.
- It was explained that although no exclusive legislation exists in India, trade secrets normally fall under the Contract Act, 1872.
- The importance of trade secrets was explained in terms of 'non-disclosure agreements' signed by researchers working in specialised laboratories. The difficulties encountered in enforcing such rights was also illustrated. Here, Dr Saha discussed some elements of the employer-employee contract and the necessity to have proper recording procedures to avoid inadvertent misuse of trade secret information.

Patent

- A patent is an exclusive right given by a country to the owner of an invention to make, use, manufacture and market the invention. The patentable invention can

be an art, a process, or a method of manufacture. It can be a product and can include substances produced by manufacture.

- Exclusivity implies that no one else is allowed to make, use or market the invention without prior consent of the patent holder.
- A patent is available for a limited period of time. It is territorial in nature and is applicable only in the country where a patent has been obtained. The inventor would need to file separate patent applications in countries of interest to ensure protection in these countries. On the other hand, a patent from one country can be copied and utilised in a different country without infringement, provided the existing patent is not applicable in the country where it has been copied.
- For an invention to be patentable, it has to satisfy the three conditions of: (i) novelty, (ii) non-obviousness and (iii) usefulness.
- Dr Saha elaborated on the importance of carrying out extensive patent searches before filing an application, essentially to determine the novelty of the product. Reference was made to advice normally given to researchers, especially with regard to the publication of research findings. It was explained that once information reaches the public domain, it no longer qualifies for a patent. As a point of interest, it was mentioned that details present in patent documents never get into the technical literature for a period of 3-10 years, depending on the technology.

2. Intellectual Property Rights Agreements

(Dr R Saha, Adviser and Head, Patent Facilitating Centre, Department of Science and Technology, India)

Dr Saha gave a brief overview of the Trade-Related Aspects of Intellectual Property Rights (TRIPs), summarised as follows:

- TRIPs sets the minimum standards to be followed by member states (there are no restrictions on applying higher standards).
- The purpose of TRIPs is to ensure that protection and enforcement of IPR should contribute towards the promotion of innovation and transfer/dissemination of

technology, in a manner that is beneficial to both producer and user. The TRIPs Agreement sets out detailed obligations regarding the protection of inventions, including:

- to recognise patents for inventions in all fields of technology, with limited exceptions,
- not to discriminate with respect to the availability or use of patent rights,
- to grant patent rights for at least 20 years from the date of filing,
- to limit the scope of exceptions to patent rights and to grant compulsory licences under certain conditions, and
- to ensure effective enforcement of patent rights.

Dr Saha listed a number of international agreements relating to IPR as follows:

- Paris Convention for the Protection of Industrial Property (1883)
- Berne Convention for the Protection of Literary and Artistic works (1886)
- Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organisations (1961)
- Convention for the Protection of Producers of Phonograms Against Unauthorised Duplication of Their Phonograms (1971)
- Madrid Agreement for the Repression of False and Deceptive Indications of Source on Goods (1891)
- Lisbon Agreement for the Protection of Appellations of Origin and their International Registration (1958)
- Hague Agreement Concerning the International Deposit of Industrial Designs (I, II, III and IV; 1934, 1960, 1961 and 1967)
- Madrid Agreement Concerning the International Registration of Marks (1891)
- Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks (Madrid Protocol 1989)
- Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure (Budapest Treaty 1977)
- International Convention for the Protection of New Varieties of Plants (Union pour la Protection des Obtentions Vegetales, UPOV, 1961/91)
- Patent Cooperation Treaty (PCT 1970)
- WIPO Copyright Treaty (WCT 1996)
- WIPO Performances and Phonograms Treaty (WPPT 1996)

- Strasbourg Agreement Concerning the International Patent Classification (Strasbourg Agreement 1971)
- Nice Agreement Concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks (Nice Agreement 1957)
- Vienna Agreement Establishing an International Classification of the Figurative Elements of Marks (Vienna Agreement 1973)
- Locarno Agreement Establishing an International Classification for Industrial Designs (Locarno Agreement 1968)
- Patent Law Treaty (PLT 2000)

For this discussion, Dr Saha selected the Budapest Treaty, since this would be of more direct relevance to Mauritius in view of the developments under way towards the setting up of the National Agricultural Biotechnology Institute.

The Budapest Treaty is an international convention dealing with the recognition of novel microorganisms.

- In 1949, a system for the deposition of strains of microorganisms was proposed by US scientists. Due to the difficulties, and sometimes the sheer impossibility, of reproducing microorganisms based only on technical descriptions reported in patent documents, it is necessary to deposit a sample of the new microorganism in a recognised culture collection centre to enable screening by others.
- In 1977, the Budapest Treaty was signed and identified some international depositories all over the world – officially approved culture collection centres known as Designated International Depository Authorities (IDA) – where samples could be deposited for testing and verification (this Treaty was further amended in 1980). If novel, the new microorganism can be patented.
- Not all countries provide protection for microorganisms. India has been a member of the Budapest Treaty since December 2001. Although some countries allow patenting of microorganisms isolated from nature, India has adopted the view that anything taken from nature constitutes a 'discovery' and therefore is not subject to patent.

Dr Saha discussed some aspects of UPOV, with focus on the protection of new plant varieties or seeds. He commented on the 1991 revision of this treaty which included a condition, stipulating that a farmer could not use the seeds from his own harvest for the

next crop, and explained that this was a position that was not tenable in most developing countries, including India. In this context, and taking into account other features of UPOV, Dr Saha suggested that a number of points could be considered when developing legislation regarding new plant varieties:

- Farmers could be allowed to use the seeds from their own harvest for the next crop, with the limitation that they would not be allowed to sell those seeds under a brand name. Instead, they would be encouraged to use the seeds in exchange with other members of the farming community, in a type of barter.
- The company supplying seeds should be liable to prosecution, should the seeds not perform as claimed or expected.
- An element of benefit sharing needs to be considered, if revenue is generated from the commercialisation of a particular plant variety originally taken from a farming group/individual.
- An advisory board should be set up to look into the different aspects of introducing and implementing legislation to cover new plant varieties/seeds.

Dr Saha concluded by saying that these were some of the various elements of IPR he wanted to share with the audience. He indicated that information relating to the main concepts on traditional knowledge would be provided to participants as hand-outs. He thanked the audience and welcomed any questions.

3. The patenting process – main elements

(Dr H Subramaniam, Patent Attorney)

The following points provide a summary of the presentation by Dr Subramaniam:

- A patent is a monopoly right which stops others from using a work. A patent is not automatically obtained but has to be applied for. The law of each country defines inventions that are patentable and others that are not. After all the conditions have been satisfied (including novelty, non-obviousness and usefulness), a patent office will then issue a patent. In most countries, a patent is valid for 20 years from the date of filing of the application. In India, a patent is valid for 14 years from filing date. Following this period, the patent becomes public property and can be used freely by others.

- Dr Subramaniam explained that the first owner of a new technology does not need a patent in order to operate legally. The technology can be worked, since the first owner has probably developed the technology him- or herself. The audience was reminded that the purpose of a patent is to provide monopoly to the owner, and prevent others from copying the invention without prior approval of the owner.
- A patent can always be licensed or sold to someone else if the owner does not want to work the invention. If somebody copies an invention, then that person needs to obtain a licence from the patent owner and pay him/her a royalty. Otherwise, this constitutes an infringement of the law and the person is liable to court action.
- An invention does not need to be completely novel. If an improvement is made on an existing invention, that new invention is patentable. To be patentable, an invention needs to have some novelty, some utility and it must be inventive (non-obvious). To illustrate this point, improvements made in detergents used in washing machines, and to the writing pen were given. Other examples included improvements made to processes that can increase the yield or reduce energy expenditure. The presenter also gave examples of patents generated from mixtures of single chemical elements (gunpowder, aqua regia). A point was made on the fact that anything, which goes against norms and legislation, is not patentable. The issue of patents granted for the second use of known compounds was discussed, using Viagra as an example.
- Determining what is considered new in a claimed invention was explained. The speaker stressed the importance of a reference point at the time of application and the use of prior art while examining the claims made in patent applications. The audience was also reminded that sometimes simple ideas can be patented, and the example of producing oxygen by heating potassium chlorate in the presence of manganese dioxide (as catalyst) was given. This example also served to illustrate the point made earlier regarding non-obviousness of an invention.
- The areas of technology for which patents can be granted include apparatus, machines, devices, articles. Patents can also be granted for new processes, new chemical substances, new drug molecules. However, in most cases the utility of these need to be determined prior to granting a patent. As example, it was explained that whereas the UK Patent Office requires that an invention should

have a commercial use, the Indian Patent Office imposes the additional condition that the invention should also be tangible. In this respect, methods for the generation of electricity, producing heat, conversion of one form of energy to another, can be patented in the UK, and in most countries.

- The wording of an invention in a patent application form is important. An application can be accepted or rejected, depending on how it is presented. Here, Dr Subramaniam mentioned the case involving the use of speed radars in Texas, USA: although the original patent application for 'a device to detect radars' was rejected, the inventor was subsequently granted a patent for a 'remote sensing device'. The same invention may sometimes be granted a patent in some countries and not in others – although wording alone may not be the deciding factor in certain cases. Examples included the changes made in the design of the inhaler by Glaxo for asthma sufferers, and the stitching needle made initially for manual use and later adapted for sewing machines.
- Dr Subramaniam discussed the moral issues which are sometimes involved in making decisions on patent applications. He quoted the example of a patent granted by the Australian and New Zealand patent offices, involving a method of treating sheep prior to sacrifice for meat. It was explained that although several countries had granted patents, The European and Indian patent offices rejected the applications on the basis of unnecessary suffering caused to the animals.
- Commenting on a question asked during the previous session relating to an international patent system, Dr Subramaniam explained that although this would appear to be an elegant solution, several practical issues made this unrealistic. It was shown that in terms of the number of inventions and patent applications worldwide, the contribution of Mauritius was extremely low. As an example, it was indicated that the United States Patent and Trademark Office (USPTO) grants between 2,000 – 2,500 patents every year, and that this figure is increasing. [The USPTO expected to receive up to 340,000 new applications for filing in the year 2002; see USPTO: The 21st Century Strategic Plan, June 3, 2002]. The Indian Patent Office receives about 10,000 applications every year.
- Based on these figures, if each patent granted in other countries was applicable worldwide, the likelihood of being granted a patent of Mauritian origin would be significantly reduced. Granting of a 'world patent' would effectively cripple research and innovation in Mauritius. The audience was reminded of steps taken

towards the globalisation of patent laws and the creation of a Patent Law Treaty. However, it was pointed out that India was not a party to this treaty. [Mauritius is also not signatory to the Patent Law Treaty].

- The speaker stressed the importance of assessing the commercial viability of an invention before steps are taken towards filing patent applications in different countries. Although the patenting costs are likely to represent a fraction of the return generated by successful commercialisation of an invention, determining the cost – benefit ratio prior to patent application is critical. Dr Subramaniam showed how failure to protect an invention through the appropriate ‘tools’ resulted in significant commercial loss in the time that followed the first application: the inventor of the first electric toothbrush applied for a design registration but failed to patent the technology involved – this was taken up by competitors within a short time and a patent granted for the technology. The competitor produced a toothbrush with a different design, and therefore did not violate the first design registration.
- If a world patent cannot be obtained, the Patent Cooperation Treaty (PCT) system of filing applications for patents represents a good alternative. If a country is a member of the PCT, a patent application filed in that country will cover other member countries for which protection is sought. Thus an international application is obtained by only paying the fee of the country from where the application is filed. Dr Subramaniam explained that the PCT enabled significant savings compared to applications having to be made in different countries.
- Under the PCT, a period of 30 months is allocated for an applicant to file a patent in any country of the world. The clear advantage in this case is that the applicant is considered to have priority over anyone else who files a similar patent in the countries where protection is sought. In addition, within this period, an applicant can make a thorough assessment of the country markets in which he/she is interested. The commercial viability, the building of finances, etc., can be done in that period of time. Meanwhile, the PCT main office in Geneva will conduct a search of the invention and will provide a report in 18 months’ time.
- By pooling the information obtained within this time, the applicant can pay the fee in all those countries which he/she is interested in, with the certainty of obtaining a patent for the invention and that there will be commercial benefits in the future.

4. IPR in Mauritius

Presentation by Mr O B Madhub

(Principal State Counsel, Attorney-General's Office)

The following points represent a summary of Mr Madhub's presentation, providing an overview of the actual state of legislation in Mauritius and discussing the future legal framework.

- *Current legislation*

It was explained that there were three main areas of legislation of direct relevance to IPR:

- 1) The Patents Act, which dates back to the 22nd May 1875, and which consists of a number of regulations. Under this Patents Act, a patent can be obtained for an invention if it is new – 'new' being used to define something that is currently 'not in public use'. Until recently, the duration of a patent under this Act was 14 years in Mauritius. Under the new legislation *The Patents, Industrial Designs and Trade Marks Act 2002*, a patent is valid for 20 years, subject to payment of an annual fee.
- 2) The Trademarks Act, which dates back to 1868 and which is still in force today. This Act addresses the types of mark which may be registered, such as the name of a company, an individual or firm. Under the previous legislation, a mark was initially granted for a period of 7 years but it can be renewed *ad infinitum*. In accordance with the new Act 2002, a mark is protected for a period of 10 years starting from the date when the application is filed.
- 3) The Copyright Act, which represents the latest piece of legislation related to IPR in Mauritius, introduced in 1997. It is TRIPs compliant (Mauritius being party to the TRIPs agreement). The Act is currently under review to take into account certain innovations.

- Grounds for rejecting a patent application:
 - If the invention has no utility.
 - It is not new.
 - It is not the inventor who made the application.
 - Incomplete description of the invention.

- If it is fraudulent or prejudicial, or goes against the interest of the public.
- The Supreme Court has jurisdiction in case of dispute. Within 48 hours, an application can be made and an injunction lodged against the party attempting to make use of a patent. The Supreme Court can have the patent cancelled if necessary.

- *New legislation*

In July 2002, four bills were passed by the Parliament:

- Patents, Industrial Designs and Trade Marks Act.
- Layout Design (Topographies) of Integrated Circuits Act.
- The Geographical Indications Act.
- Protection against unfair practices (Industrial Property Rights) Act.
- All these acts are TRIPs compliant.

Note: The Patents, Industrial Designs and Trade Marks Act 2002 and The Protection Against Unfair Practices (Industrial Property Rights) Act 2002, came into force on 6th January 2003.

- *Legislation being developed*

- The Plant Varieties Act.
- The Computer Misuse and Data Protection Act, which will be highly relevant in the context of the cybercity, as well as the e-government project.
- The Competition Bill (expected to be in force by the middle of 2003).

The same administrative set up will apply to the Layout Design of Integrated Circuits Act and Geographical Indication Act, as in the case of the Patents Act.

- *Geographical Indications Act*

- Under this act a new Industrial Property Office is being set up. This Office will be led by a Controller, with the ability to examine applications and will be authorised to investigate cases.
- The Controller will also have the authority to search and withhold material found during these investigations.
- The establishment of an Industrial Property Tribunal will provide the forum where the majority of such cases will be debated, with the right of appeal to the Supreme Court.

In terms of the administrative set up, these are new developments being introduced through the Act.

Presentation by Mr N Ramoly

(Adviser, Ministry of Arts and Culture)

The following section summarises the presentation of Mr Ramoly which provided an overview of the status of copyright in Mauritius.

- Mr Ramoly explained that since Mauritius was part of the WTO through the TRIPs agreement, legislation was expected to be 'TRIPs compliant'. He then elaborated on the Copyright Act (1997) of Mauritius and the relative importance of two treaties within the TRIPs agreement, namely the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT).

- *The Copyright Act, 1997*
This Act was made in the context of TRIPs and was drafted in connection with copyright owners themselves. A clear advantage is that it provides protection beyond what is normally provided in other countries. However, certain definitions need to be clarified and it is likely that provisions will have to be made for enforcement of the law when it is applied in the courts.

- Mr Ramoly concentrated on the following six aspects of the Copyright Act:
 - works protected under the law,
 - rights granted to the copyright owner,
 - limitations,
 - duration,
 - ownership and
 - enforcement of the rights.

- *Works protected under the law*
Unless an invention falls under the definition of a work, it will not benefit from protection under the Copyright Act. A work is defined as an artistic, literary or scientific work, which is original. In this context, the term 'original work' is used if some skill, labour and judgement were required for the production of that

particular work. Here, the audience was reminded that although ideas, procedures, methods of operation or mathematical concepts as such cannot be granted copyright, it is their expression that receives protection. If the idea is converted into some fixed material form (writing, audio/video recording, etc), the resulting product becomes eligible for copyright protection.

Mr Ramoly went further to explain the meaning of copyright and related rights. Owners of related rights include those who are not the direct creators of artistic, literary and scientific work. Instead, they are involved in transmitting work that has already been created and they play a key role in copyright (for example, broadcasters, performers and producers). Provision is made in the law to protect owners of related rights separately.

- *Rights granted to the copyright owner*

These rights are classified as economic rights and moral rights, and form part of the Berne Convention (this refers to the Paris Act of July 24, 1971 of the Berne Convention for the Protection of Literary and Artistic Works – first formulated in 1886 and most recently amended in September 1979).

Economic rights represent the financial aspect of copyright ownership and cover reproduction, distribution, rental, public performance, broadcasting, translation, adaptation and importation. These rights can be transferred (alienable).

At this point, the issues of licensing and assignment were briefly discussed. The importance of knowing how to manage IPR to determine, for instance, what can be licensed, to whom should a licence be given and how much to charge for a licence, was pointed out.

Moral rights cannot be given away (inalienable) and consequently accompany the copyrighted work, whether or not the economic rights have been sold. The work cannot be distorted against the interests of the copyright owner, that is the author of the work can object to any action that would be damaging to his/her honour or reputation. To be TRIPs compliant, most laws include moral rights.

- *Limitations*

Limitations come under two categories, namely free use and non-voluntary licence.

Free use refers to the ability to reproduce copyright material which has already been lawfully made available to the public, without the requirement for prior authorisation of the owner. However, this activity has to be compatible with fair practice and should not exceed the purpose for which the work is being used. In Mauritius for instance, reproduction for teaching, quotation purposes, private reproduction for personal purposes, reprographic reproduction, reproduction by libraries/archives, reproduction broadcasting and other communication to the public for information purposes, reproduction/adaptation of computer programs and importation for personal purposes, represent activities where these limitations are applied, and where the permission of the copyright owner is not required.

Non-voluntary licence refers to the granting of a licence, irrespective of the copyright owner's agreement. However, the user is still required to pay the copyright owner for the use of the work.

- *Duration (term of protection)*

The duration of copyright lasts the life of the copyright owner plus 50 years after death. In the case of original material produced as a result of teamwork, copyright could be made to extend to 50 years beyond the death of the last surviving person in the team.

- *Ownership*

Authorship belongs to the creator of the work. Joint authorship applies when two or more people contribute towards a project, and all members of the team own the copyright.

Employers own the copyright of the employees for all work created by the employees in the course of their employment. However, if the work is produced outside the course of the employee's work, then the employer is not entitled to claim copyright. Commissioned works are not automatically owned by the commissioning party, unless specifically indicated in a written deed of assignment. In the absence of such document, the commissioned work belongs to the owner/creator.

- *Enforcement of copyright*

It was pointed out that enforcement of copyright can only be carried out in presence of the copyright owner. This applies both to local and overseas copyright owners and it was explained that Government or police would not be expected to enforce the rights of persons who are not in Mauritius.

Criminal sanctions currently imposed in Mauritius for breach of copyright: 2 years imprisonment and MUR300,000 fine for a first offence. For a second offence: 8 years imprisonment and MUR500,000 fine. Since 1997 to date, it was stated that approximately 12 cases involving infringement of copyright had been dealt with by the courts. However, in most cases full enforcement of the Copyright Act 1997 had not been possible due to a lack of appropriate and valid documentation. The presenter was of the view that this situation again demonstrated the need for proper management of IPR.

Mr Ramoly indicated that the Copyright Act was currently being reviewed, taking into account advances in technology. Reference was made to the effect that elements of the WCT and the WPPT would have to be incorporated as soon as possible.

5. Protection of software and computer-related innovations

(Prof P Ganguli, Patent Attorney)

Prof Ganguli was introduced to the audience by Dr Saha. Taking over, Prof Ganguli thanked the MRC for being invited and the Government of India for being included in the delegation. He indicated that he had worked closely with the Technology Information, Forecasting and Assessment Council (TIFAC) ever since their first workshop, both in India and abroad.

The following points represent a summary of the discussions of Prof Ganguli:

- Preparations are well under way towards the 'knowledge economy' and most activities constantly involve accessing knowledge, generating knowledge and creating knowledge. Since we are applying and trading knowledge, there is a need for having in place mechanisms that will ensure protection of this knowledge.

- There are two structures or instruments by which knowledge can be protected. One is IPR and the other is information security. The important issue in information security relates to mechanisms of protection associated with the use of modern technology, especially when being physically present to get the information is not compulsory. Reference was made to the risk of information being taken from a personal computer when it is connected online, as well as manipulation of data within the computer from an external site during an online session. Prof Ganguli pointed out that these risks were potentially amplified in situations such as country-wide networks involving 10,000 to 15,000 computers, or more.
- The term 'managing a knowledge canopy' was developed by the presenter, emphasizing the importance of IPR as a tool for bringing together knowledge, creativity and vision, in order to achieve and retain a high level of competitiveness on the international market. Although these three items by themselves do not necessarily confer a competitive edge, it is the skilful combination, management and protection through IPR that can turn these assets to beneficial use.
- The term 'convergence of technologies' was discussed as the combination of different technologies from different sources, belonging to different people. By combining them together, a new technology can be created out of them. The question of ownership then arises, as to whom will the new technology belong to and how are the benefits of such new technology shared.
- It was explained that in areas such as biotechnology, bioinformatics and information technology (IT), interfaces comprising different types of technologies and knowledge domains were created. By bringing different knowledge domains together, complications arose in the interpretation of existing legislation which had been mainly tailored for the tangible world. The major question was whether legislation made for the tangible world was applicable to the intangible world, and if it was, what would be the complications?
- The issues concerning protection of a product which is made available to the public were looked into. Two main issues were identified: accessibility (something is made available to the public) and affordability (whether the public can afford it). It was explained that in situations where the public cannot afford the new technology or have easy access to it, the risk is that the product will be stolen or

simply copied. The owner needs to enforce his/her rights because that knowledge belongs to him/her. Establishing those facts and enforcing protection in the context of computer-related innovations become very important issues which need to be considered during the early stages of development.

- The point was made that technology changes very rapidly and consequently forces the existing legislation to change. This is especially true in areas such as IT and biotechnology. Prof Ganguli explained that from an IPR perspective, it was important to recognise that legislation could change, and that a good appreciation of legislation was necessary in order help research and development towards becoming more competitive and successful. It was also explained that in accordance with earlier copyright laws, a medium of fixation was required for the expression of an idea in order to qualify for protection. In terms of computer-related innovations, however, notations such as random access memory (RAM), the Internet and cyberspace had a new meaning and represented intangible media which could not be covered under the original copyright laws. Consequently, legislation had to be changed to include technical information that would accommodate new developments in technology and media of expression. As a further example, it was shown that even laws relating to business methods (which initially held that such methods were not patentable) were modified following a landmark judgement approximately two years ago.
- The importance of copyright ownership was re-iterated for the benefit of the audience. Prof Ganguli explained that the owner is central to all copyright – copyright remains with the copyright owner and is not transferred to the purchaser who buys the item containing the copyrighted material. In relation to software, it was pointed out that the commercialised version was licensed to the purchaser/user and that copyright remained with the original author of the software. Transfer of copyright, however, could be done in several ways, including licensing (agreement for non-exclusive transfer of rights). An example was given indicative of certain benefits associated with licensing, such as royalty payments: coursework material licensed for use by another party, in return for some royalty. The issue of whether the royalty needs to be changed if the user modifies the course content/material was discussed. Attention of the audience was drawn to the fact that the act of opening the shrink-wrap of commercially available software, usually implied agreement with the licence conditions written in fine print on the packaging material (commonly referred to as shrink-wrap

licence). Here, the analogy to electronically distributed software was described and the term 'click-wrap licence' used.

- In the context of patenting in computers/computer systems, it was explained that physical components, peripherals and accessories could be patented. Other areas like the sequence, structure or organisation of the programme (algorithms, logic) needed to be considered differently in deciding on protection through patents or copyright. Different sets of source codes embodying the same function of a programme can each be protected under copyright, since they relate to different 'expressions' of a similar idea. Prof Ganguli illustrated this point by giving an imaginary example of two persons in different locations in Mauritius, working independently of each other without knowledge of each other's activities, and who each produced a different set of codes for a programme that produced the same end result – each person could protect his/her work under copyright. However, in the case of patents, the first one to file for a patent and to receive protection would take precedence over the next case, the first one being considered as 'prior art'. Among the advantages of patenting over copyright, it was explained that components of programmes could be protected by patents, allowing part-licensing of these components. In business terms, innovation could be better utilised through patents than through copyright.
- To further explain the differences between patents and copyright in the context of computer-related innovations, examples from case studies were given. These involved infringement of an algorithm developed by Stac Electronics for data compression by Microsoft, and the arguments surrounding an invention relating to a method for digital processing of images by using a computer. The second case was also used to demonstrate the importance of the statement that software '*per se*' is not patentable, but that software linked to a function can be patented.
- The importance of the word 'innovations' within the term 'computer-related innovations', as opposed to the word 'inventions', was explained. Prof Ganguli remarked that not all innovations are inventions, but that all inventions are indeed innovations. This distinction was crucial in being able to interpret and use the law effectively for protection. In relation to the above examples drawn from case studies, the audience was reminded of the usefulness of wording the claims made in the patent document very carefully and of presenting an invention in a manner that will minimise the risk of being rejected.

- The issue of licensing of computer programmes was discussed in terms of the rights of the owner and the end-user. It was explained that the end-user could make a copy for archival purposes (backup) and could modify the copy without committing copyright infringement. Although the end-user could make changes to the original version with a view to enhancing the speed or adding features that would facilitate its use, the end-user's modified version could not be sold since this would infringe the author's rights to create derivative works. Commercialisation of the modified version would only be possible following authorisation to create a derivative work by the original author, and only if it could be demonstrated that there was new utility involved. Prof Ganguli stressed that such issues were critical in view of the development of the cyberspace in Mauritius.

Note: The issues surrounding backup are still being challenged, as seen in the current case involving digital video disks (DVDs). Last year, the software company 321 Studios (St Louis, Missouri, US) asked the District Court in San Francisco to declare the Digital Millennium Copyright Act (DMCA) as unlawful, since it prevents people from making backups of DVDs for their personal use. [The DMCA forbids the circumvention of technological protection, i.e. encryption.] 321 Studios offers for sale (over the Internet and through retailers), its DVDXCOPY software that allows anyone to copy DVDs. Film studios (including Columbia TriStar, Disney, MGM, Universal and Warner) now argue that the court should rule that consumers are not allowed to make 'archival backups' of DVDs, and is accusing 321 Studios of breaching the copy-prevent system of DVD players.

- It was explained that reverse engineering was often regarded as the only way of gaining access to the embodied functional elements of a programme, and that if there was a legitimate reason to gain access (for instance, to learn how a specific programme functions and to undertake further research), this was not considered as an infringement of copyright. Although commercialisation of software which represents a simple derivative of existing software is not allowed, reverse engineering that will enable research and development of new software for later sale is legal.
- The importance of verifying related domain names in cyberspace and their potential commercial impact was illustrated using the example of the website belonging to the Indian Institute of Technology in Mumbai (IIT Mumbai), India. It

was explained that confusion arose when an individual created a commercially-oriented website based on the name of the area where IIT Mumbai is located. The matter was taken to the WIPO Arbitration Panel, Geneva, for a decision on the rightful ownership of the domain name and a ruling was obtained in favour of IIT Mumbai. In this context, it was explained that derivatives of Mauritius.com, including Mauritian.com, MauritianArt.com, MauritianFood.com, etc., could create confusion at local and international levels, and required constant monitoring to prevent unauthorised use.

- Jurisdiction on the internet was discussed. This was illustrated using the example of a company which offered file-swapping services that would enable digital copies of music to be made (Napster). It was shown that although there was no infringement in terms of copyright, the company was successfully prosecuted on the grounds that it placed files in specific locations on the internet and drew attention to the fact that these files could be copied.
- Prof Ganguli concluded his presentation with a quote from Swami Vivekananda and thanked the MRC for its initiative in organising this awareness workshop on IPR.

Day 2

Introductory remarks

(Dr R Saha, Adviser and Head, Patent Facilitating Centre, Department of Science and Technology, India)

Dr Saha introduced the second day of the workshop by discussing some elements of patenting in relation to biotechnology. He indicated that complex issues needed to be addressed in the patenting of biotechnology, whether this involved microorganisms isolated from nature or transgenically modified, the manufacture of vaccines and enzymes, industrial processes, cloning (plants, animals). With regard to the human genome, Dr Saha explained that although the data has been placed in the public domain, there is a feeling among scientists especially those from the developing countries, that access to the data and related information will not be exactly free.

Another aspect still being debated in the WTO relates to the disclosure of prior art and traditional knowledge on biological material in patent documents. This information is considered important in support of the novelty of the claim being made, given that traditional methods developed over generations among local people and within indigenous communities are likely to differ from modern methods. This is especially true in situations where the patent application for the claimed invention is made in a different country to where the prior art/traditional knowledge exists. India has taken the view in its Patent Amendment Act of 1999, that anybody filing a patent application will have to disclose this information. Here, Dr Saha pointed out that legislators in Mauritius would need to decide on the benefits of such disclosure and how to implement it.

Again in the context of biotechnology, it was stated that India currently does not allow the patenting of genes, but recognises that new plant varieties and seeds need to be protected. This poses a number of challenges since new plant varieties/seeds could be produced as a result of transgenic manipulation, and therefore protecting these new varieties/seeds would in effect mean that the genes are protected. Dr Saha reminded the audience that biotechnology involved the interplay of numerous disciplines – a fact that had to be kept in mind when considering protection under IPR. With this background, Dr Saha invited Dr Subramaniam to follow up with his presentation on the protection of living species.

6. Protection of living species

(Dr H Subramaniam, Patent Attorney)

The following points represent a summary of the presentation by Dr Subramaniam:

- Patents are applicable to a wide range of areas. The question of protecting living species first arose in the 1980's in the US where for the first time, in a case referred to as *Diamond v Chakrabarty*, application for a patent was made for a living microorganism of the species *Pseudomonas*. The invention claimed that an artificially-induced mutation of *Pseudomonas* resulted in a species that could be used in operations for clearing oil spills. Although the USPTO initially rejected the application, upon appeal the patent was granted. The USPTO conceded that there was indeed an inventive step in terms of human intervention. Furthermore, the USPTO took the view that whenever human intervention is involved (including situations where living organisms are concerned), and if the change brought about has an industrial application, then the requirements for granting a patent are satisfied. Here, reference was made to use of the sweeping statement 'anything under the sun which involves human intervention is patentable'.
- It was explained that following the above decision of the USPTO, several years elapsed before other countries, including Europe, adopted this stance. India, however, has not followed suit, as is the case for several Asian countries (with the exception of Japan). Indeed, India is not obliged to introduce legislation for patenting of microorganisms *per se* until 1st January 2005. This is based on the fact that a *per se* patent is equivalent to a product patent. However, process patents for microbiological inventions (such as the use of microorganisms for fermentation of alcohol, making bread, etc., where the microorganisms are used for industrial purposes) are now granted in India for a period of 20 years from the date of filing, with effect from 1st January 2000.
- The definition of biotechnology with respect to patents was discussed. Dr Subramaniam emphasised the importance of human intervention on a living organism, or part of the living organism, to create an entity that is industrially applicable. The example of human intervention in a higher organism was used to illustrate this point. In 1987, Harvard University filed an application for a mouse (the *oncomouse*), which was genetically modified to make it highly susceptible to cancer when exposed to a carcinogenic environment or agent. Although the European Patent Office (EPO) initially rejected the application on the grounds that

it was immoral to grant a patent for higher forms of life, the USPTO granted a patent indicating that it considered the enhanced ability of the new animal model to detect carcinogenic environments/materials as representing an industrial utility.

- Biotechnology was described as categorised broadly under the traditional or modern area. The traditional area concerns conventional plant breeding, which dates back to the 1880's, when Gregor Mendel crossed two varieties of sweet pea. This technique is applied in the development of new strains (sugarcane, rice, potato, etc) that are more productive, nutritious or stress-resistant (improved resistance to environmental factors, parasites). The modern area includes industrial microbiology (development of vaccines, fermentation/brewing processes), as well as recombinant DNA technology for use in drug research. Dr Subramaniam indicated that the pace of progress in modern biotechnology created tremendous possibilities for commercial utilisation, each with potential for patent protection. He reminded the audience that patenting was often possible if the commercial aspects outweighed the moral/ethical issues.
- Issues relating to genetically modified (GM) plants were discussed. It was explained that the USPTO and EPO granted patents for GM plants, but that in India microorganisms *per se*, as well as higher forms of life (plants and animals), and therefore GM plants, were still not patentable. To illustrate the fact that legislation surrounding the patenting of microorganisms is still in a state of flux, the example of a recent patent application for the manufacture of a vaccine was given. Although the Indian Patent Office turned down the application based on the use of a living or attenuated microorganism, the decision was reversed by the Kolkata (Calcutta) High Court on appeal, stating that manufacture can include a microorganism. A second example was given, involving the combination of amoxycillin (a broad-spectrum penicillin-like antibacterial and antibiotic drug) and *Lacto bacillus* (a bacterium present in milk) in a pharmaceutical preparation (oral capsule). The Indian Patent Office granted the application for this patent in spite of having a living microorganism in the product. This patent, however, is now being challenged in the High Court on the basis that the simple combination of amoxycillin and *Lacto bacillus* does not constitute an invention, since both components in the capsule still work in the way that is known and expected of them in isolation of each other.

- The audience was reminded that the wording of the description, claims and specifications in a patent application required special attention. Examples were given of cases involving the EPO, which (unlike the USPTO) takes the view that any method involving the treatment of animals or plants to render them free of disease, is not patentable. It was explained that methods involving cosmetic changes (face lifting, etc.), however, could be patented since they were not categorised as 'methods of treatment to render the patient free from disease'.
- To further illustrate this point, Dr Subramaniam gave the example of a device which was designed to facilitate blood collection from donors. The patent for this device was granted by the EPO on the basis that the blood donor does not suffer from any disease and is not being treated in any way by the use of this non-diagnostic device. He drew attention to the fact that the term 'diagnostic' was used, which consequently meant that any method directly relating to a disease in a human or animal which could be used for diagnosis or treatment, would not qualify for a patent. Conversely, any method which does not involve treatment or diagnosis becomes patentable by the EPO.
- Here, Dr Subramaniam quoted the example of the refusal of the EPO to grant a patent for a contraceptive cream, not on the basis that this constituted a method of treatment as first argued, but because enforcement of the patent was not possible without resorting to immoral means that would infringe individuals' privacy. As another example indicative of the EPO's principles for granting patents, a contraceptive injection incorporating an anti-allergenic compound was cited. It was explained that injection of the contraceptive gave rise to an allergic reaction, which was alleviated by the presence of the anti-allergen. The EPO turned down the patent application stating that the first part of the claimed invention (the contraceptive) caused an allergy and that the second part (the anti-allergic compound) was used for treatment purposes. Illustrating the differences in approach taken by the EPO and USPTO, Dr Subramaniam pointed out that for the above cases rejected by the EPO patents were granted by the USPTO.
- The implications of new directives of the EPO (1998), stating that 'any invention that meets the European Patent Commission's directives will be patentable, even if they contain biological material', were discussed. It was explained that isolated genes, partial gene sequences, and nucleotide sequences obtained from human tissue donated with consent, from animals or from plants, could be patented

provided that their industrial utility could be demonstrated. It was stated that the EPO directives clearly indicated that no human tissue, human body or part of human body would ever be allowed as patentable.

- It was explained that the USPTO's approach is to grant patents for almost anything that satisfies the criteria of novelty, human intervention and industrial utility. Consequently, applications for patents are very rarely turned down on the basis of moral issues. However, it is extremely important to assert the utility of the subject being considered for patent protection, and to ensure that the available supporting evidence presented in the claim is credible. Examples of patent applications claiming the anti-ageing properties of compounds, were given. Although general claims of retarding/reversing the ageing process were rejected as non-credible, specific claims relating to the prevention of wrinkle formation on the face were accepted for patenting.
- Simple discovery of an existing material or natural phenomenon is not considered for patenting. Here, the example of the discovery of the cause of malaria was cited. The patent application was rejected based on the fact that no human intervention was involved, and that the discovery merely elucidated the natural existing cycle of events of the malarial parasite.
- Dr Subramaniam commented on statistics which show that, contrary to earlier belief, granting of patents for biotechnology-related inventions has led to an increase in the rate at which developments occur in this area.

With these comments, Dr Subramaniam thanked the audience for their attention and proceeded to answer questions.

7. Future Challenges for IPR in Mauritius

Institutional management of IPR

(Prof P Ganguli, Patent Attorney)

The following points represent a summary of the presentation by Prof Ganguli:

- Prof Ganguli started his presentation by asking the audience to focus on the following questions through this presentation: (i) why is institutional management of IPR required, and (ii) why it is so important?
- He then proceeded to explain that as the level of technology becomes higher, the institutional response to IPR becomes shorter and hence there is a crucial need for the management of the system. The audience was reminded of the fact that India and Mauritius have both signed the following three treaties: TRIPs (Trade Related Aspects of IPR), SPS (Sanitary and Phyto-Sanitary measures) and TBT (Technical Barriers to Trade), which are all strongly knowledge-based and technology-based.
- It was pointed out that if the only competing factor is knowledge, then by using knowledge in a better way, a higher degree of competitiveness can be achieved. Therefore these 'knowledge differentiators' need to be managed carefully at national as well as institutional levels. Here, Prof Ganguli stated that the presence of policy was very important to facilitate handling these knowledge differentiators in the country.
- The protection of knowledge differentiators is especially important in:
 - a knowledge-based economy where there are a number of knowledge workers,
 - environments where creativity, knowledge and vision are combined to stimulate inventiveness,
 - situations where industries invest in new technologies and seek to protect these investments, and
 - providing recognition to inventors and maintaining ethical standards in society.

- It was stated that although a number of companies have relatively basic physical assets, they possess high knowledge-based assets and are able to enjoy substantial profit margins because they know how to manage their IPR.
- Institutional innovation was described as a process that should involve a wide range of R&D partnerships – implying that collaboration with external organisations was often needed. Collaboration can only proceed successfully when the concepts of IPR are made clear. In this context, it is essential to recall that patents, copyrights, trademarks, etc., all protect specific aspects of innovations. Each 'IPR tool' involves different:
 - periods of validity,
 - geographical limits,
 - systems of enforcement, and
 - benefit-sharing arrangements.
- In terms of management of IPR, Prof Ganguli explained that feedback into the national system is required. Education of the population in areas such as economics, science, technology, trade, etc., is needed to sensitise people to the importance of issues that are dealt with through IPR and to make the management of IPR a success. Unless there is a national policy and people receive instruction on how to use this policy, implementation of IPR will be slow to progress. One should recognise that the value of an IP keeps increasing from the idea stage, where it has least value, right up to the marketable stage where it attains its maximum value.
- In deciding at what point in the development process does IP need to be protected, Prof Ganguli emphasised the importance of taking steps towards protecting an idea as early as possible. In this context, he explained that the national laws under which IP is protected in Mauritius need to be carefully reviewed on a periodic basis, to ensure that their application produces the expected outcome – this is especially true when cases are taken to court. He also indicated that international legislation has to be followed if it is anticipated that protection will be required in other countries.

- At an institutional level, Prof Ganguli explained that the following issues had to be considered in the context of IP protection:
 - the institution needs to have a vision, an objective and a strategic plan,
 - the institution needs to have product and service portfolios,
 - market status and competitive positioning of the institution need continuous monitoring, and
 - precise and up-to-date information should be made available to enable decisions to be taken on the appropriate protection required in line with the institution's innovation strategy and overall IPR plan.

- Elaborating on the above points, Prof Ganguli explained that the policy and management of IPR requires that no information be disclosed prematurely, and that in order to set up an IPR plan and an innovation strategy, three aspects have to be considered: (i) the various business opportunities currently available, (ii) the technical options at hand, and (iii) the strategic options to be worked out. A research plan needs to be drafted before moving into the innovation process. The IP grid has to be examined to determine how to globally protect the research to be undertaken, and systems need to be put into place for the regular updating of IPR information.

- In considering the development and management of institutional IPR, the following issues need attention:
 - staff should be sensitised with respect to IPR issues,
 - the institutional IPR policy should take into account all the aspects of management of the institution,
 - IPR has to be linked to business, mission and strategy,
 - IPR should be integrated in project management,
 - there should be effective use of IPR information,
 - mechanisms must be set up to detect infringements and to enable strategies to be developed that will avoid potential infringement, and
 - licensing strategies have to be worked out.

- Prof Ganguli concluded his presentation by summarising the requirements for good IPR management:
 - effective policies,
 - efficient organisational structure for IPR,
 - classification of ownership policies,
 - implementation of procedures, and
 - enforcement, monitoring and audit of IPR.

Future trends and challenges for IPR in Mauritius

(Mr O B Madhub, Principal State Counsel, Attorney-General's Office)

Mr Madhub outlined the future trends of IPR in Mauritius and discussed the challenges that will follow:

- Developing areas (cybercity, e-initiatives to include e-government and e-commerce, biotechnology), will require competence in terms of the legal framework, human resources and infrastructure. These call for more private sector involvement and mechanisms to ensure that the transition is brought about in a coordinated manner.
- The impact of new technology was highlighted with a reminder to the audience that IPR take effect in conjunction with other existing legislation; thus the different and often new interfaces created require monitoring and revision of laws. The creation of an Intellectual Property Office (IPO) was considered as an essential step for progress.
- It was explained that biotechnology brought into focus issues related to natural resources, as well as prior art, traditional knowledge and the concepts of culture and ownership.
- The need to develop an overall IPR policy and a centralised coordination of all matters relating to IPR (possibly through a specialised Commission) needs to be envisaged.

8. Discussions

The following points summarise the comments/views raised during the panel discussion, which was chaired by Dr R Saha:

- The DST of India has been granting funds to research institutions for the last 2 years. If the research generates an IP, then the research institution can hold the IP right. If the technology on which IP has been taken generates any revenue, the research institution is entitled to keep all the money. Out of the proceeds, 30% should be used to pay the researchers, 60% kept by the research institution and some amount should be directed towards a patent fund, which can slowly be built up. The motivation of scientists/researchers is maintained through this mechanism.
- Concerning the procedure for initiating IPR management, it was suggested that there are two institutions in Mauritius which could take on the responsibility, namely the MRC and the University of Mauritius. It was explained that the models which are currently used in India could be followed initially, taking into consideration the specific requirements of Mauritius.
- New laws are currently being drafted in Mauritius with a view to strengthening the legislative framework, keeping in mind steps already taken towards creation of the cybercity and the National Agricultural Biotechnology Institute. It was felt that there was an absence of solid policies regarding IPR at the institutional level and that at some stage, the national policy on IPR could be converted into institutional policies. However, it was also suggested that each institution should not have its own policy, given that Mauritius is a country.
- Following proposals for the setting up of an IP Unit at the MRC, it was suggested that effective working links (networking of IP organisations) be set up between the existing organisations related to IP to ensure a more representative IP Unit in Mauritius. Here, it was explained that the IP Unit to be located at the MRC would be scientifically and technologically inclined with an advisory role in IPR matters, and would not act as a patent office. For example, knowledge generated by the MSIRI would require IPR expertise of a different nature compared to that offered by the MASA. It was suggested that the setting up of the IP Unit would be guided by the stakeholders. It was also pointed out that the IP Unit should not operate in

isolation, to ensure effective utilisation of resources and to avoid unnecessary duplication of effort.

- It was pointed out that a Copyright Desk had already been created at the Ministry of Arts and Culture. It was explained that this Ministry would be involved with registration procedures and would retain administrative powers, and that the MASA would continue to act as the statutory body established under the Copyright Act.
- The Ministry of Industry and International Trade deals with the administration of Patents and Trademarks. The introduction of new legislation will involve establishment of an Industrial Property Office (IPO), which shall be administered by a Controller. The Controller will have authority to grant a filing date for related applications, examine these applications, and grant patents and register any mark, industrial design, geographical indication and layout design. It is expected that, in the short term, the different institutions set up by the new legislation will be under administration of the above Ministry.
- It was suggested that the participants give their views on what they propose should be the course of action, in terms of the policies needed for artistic works, for scientists as individuals, for institutions like the MSIRI, etc. A majority of the audience was of the opinion that a national policy on IPR was needed. It was also felt that clear directions were required in terms of investment opportunities (for both Government and the private sector).
- It was stated that the Plants Act 1976 was under amendment to incorporate the Plant Breeders' Right. In this context, it was pointed out that the draft was being vetted by the UPOV. In terms of enforcement, it was felt that the appropriate institution was also needed to make sure that whatever is being protected is in conformity with regulations.

9. Recommendations

I. Setting up of an Intellectual Property Unit (IPU) at the MRC.

It is proposed that an IPU be set up at the MRC, which will constitute a window to the major databases and information on IPR. Researchers and industry personnel should be able to use this Unit for their prior art search, technology mapping exercises, etc., so that the information can be integrated in their project planning and execution. The IPU will be expected work in close collaboration with all institutions, be it local or international institutions that generate new knowledge, to ensure a proper understanding of global IPR issues.

The proposal for setting up an IPU at the MRC will be put forward to the Board of the MRC, following which the relevant Ministries and research institutions will be contacted. It is also suggested that a coordinating committee be set up at the MRC to work on this issue and produce a blueprint which will take into consideration the legislative aspects of IPR and their implementation.

This proposal has received support from the DST, who have also agreed to offer training of staff in the first instance.

II. That the MRC produces a report of the workshop proceedings.

The MRC should produce a report of this workshop, reflecting the main points on IPR and summarising the extensive discussions. The production of this report will constitute the starting point for the process of setting up of an IPU at the MRC.

III. That the MRC produces a booklet on IPR intended for general dissemination.

In line with the first objective of this workshop, the purpose of this booklet will be to provide up-to-date information on IPR and its importance, in relatively simple terms. The aim is to enable a wider lay audience to get an understanding of the basics of IPR and stimulate the need to consider protection of knowledge as an important tool in the early phases of innovation and development.

IV. Setting up of a National Commission on IPR in Mauritius.

This body will be responsible for the formulation of a comprehensive IPR policy for the country, taking into consideration all the relevant issues cutting across all Ministries. The aim should be to strengthen the framework for the protection of knowledge assets and ensure a conducive environment for sustained development, creativity and fair business practices. Ideally, this Commission should be headed by a person of eminence from

Mauritius, with representation from some of the key Ministries and industries, and including a few external IPR consultants. This will constitute the one-stop shop for all IPR policies and processes in Mauritius. This body will also coordinate with the Attorney-General's Office to ensure that IPR legislation in Mauritius is TRIPs compliant, while taking into account the specific needs of promoting the interests of Mauritius.

V. To initiate the incorporation of IPR management in project planning.

To start a pilot project, possibly as a joint MRC-University of Mauritius venture, to incorporate the management of IPR in project planning and implementation. This will help organisations to learn the details and identify the issues involved, especially in the local context. This will help to identify innovations that can be protected by the different IPR tools at an early stage, and will also give confidence to the researchers and to the administration that implementation is both within the means and the competence of the organisation. The feedback obtained through this pilot project can subsequently be incorporated into national and institutional IPR policy documents.

VI. Continued programme of IPR awareness.

It is proposed that the initial effort of the MRC in organising this workshop on IPR be developed into a wider programme, consisting of a series of focused IPR awareness programmes which should be directed to specific fields of importance in Mauritius. This could operate through the IPU to provide regular updates on issues of immediate concern to local organisations, as well as establishing a continued link with relevant information worldwide.

VII. Setting up of a Regional IPR Coordination Centre.

Following a transition period while the required legislative framework, infrastructure and human resources are built up, it is proposed that advantage be taken of the bilingual competence in Mauritius to plan the setting up a Regional IPR Coordination Centre.