Brazil became a Member of UPOV on May 23, 1999. But it has adopted only the UPOV Convention of 1978 with considerably lower protection standards compared to the UPOV Convention of 1991.[198] Meanwhile, Brazil's plant variety protection system has adopted certain provisions even of the UPOV Convention of 1991, e.g. the provision on essentially derived plant varieties. Thus, Brazil is in compliance with Art. 27(3)(b) of the TRIPs Agreement.

In addition, Secs. 68 ss. of the Brazilian Industrial Property Law codify compulsory licenses. Compulsory licenses in the pharmaceutical sector are widely discussed in Brazil with respect to public health.

Brazil's patent system is now largely compliant with the TRIPs Agreement. But Brazil suffers from a significant backlog of pending patent applications in recent years. Moreover, the patent enforcement is considered rather weak in Brazil.[199]

II. Implementation of the TRIPs Agreement in China

China's patent system began with China's entry into WIPO in 1980. Since then, China has ratified the Paris Convention and established the State Intellectual Property Office (SIPO) with responsibility for granting patents in China. The regulatory framework was modeled after the EPC.[200] Article 25(1) of the first Chinese Patent Act of 1984 set forth that food, beverages and flavourings, pharmaceuticals, and substances obtained by means of a chemical process are not patentable subject matter. Furthermore, animal species and plant varieties were excluded from patentability. Patents on processes for the production of these excluded subject matters were obtainable, however.[201] As Germany had excluded food from patentability because of concerns about nutrition and food availability, so did China exclude food and animal and plant varieties from patentability.[202]

198 *Straus&von Pechmann*, Die Diplomatische Konferenz zur Revision des Internationalen Übereinkommens zum Schutz von Pflanzenzüchtungen, GRUR Int. 1991, 507.

199 USTR, 2005 Special 301 Report, available at www.ustr.gov/assets/Document_Library/Reports_ Publications/2005/2005_Special_301/asset_upload_file195_7636.pdf.

200 *Parry*, Intellectual Property and the Challenge of China, The Scientist, May 23, 2995, 41.

201 *Yu*, The Second Amendment of the Chinese Patent Law and the Comparison between the New Patent Law and TRIPS, 4 The Journal of World Intellectual Property 137, 145 (2001).

202 "Pharmazeutische Erzeugnisse, Nahrungsmittel, chemische Stoffe und andere Substanzen sowie neue Tierarten und Pflanzensorten stehen in einem engen Zusammenhang mit Leben und Gesundheit der Menschen (...)." *Guo*, Entstehung und Grundzüge des chinesischen Patentgesetzes, GRUR Int. 1985, 1.

The Chinese Patent Act of 1992 removed the exemption to patentability of food.[203] The initial concerns that patents on food would deteriorate food availability have been regarded as unfounded, so that the exemption to patentability of food could not be justified further.[204] Animal species and plant varieties were still excluded from patentability, but the scope of process patents was extended to the product directly obtained from the process.[205]

China acceded the WTO on December 11, 2001 in order to acquire advanced technology from developed countries and to protect its own indigenous technology. Moreover, the U.S. played an active role in advocating the need for intellectual property rights in China. Although China was not a Member of the WTO at the time, it participated in the negotiations of the TRIPs Agreement.[206] The Second Amendment to the Chinese Patent Law was adopted on August 25, 2000 and entered into force on July 1, 2001, bringing China's patent system to further TRIPs compliance.[207] Animal and plant varieties are still excluded from patentability, making restricted use of Art. 27(3)(b) of the TRIPs Agreement, as only varieties are excluded, but not higher taxonomical groupings. Plant varieties are protected by plant variety protection under the Regulations on the Protection of New Varieties of Plants of October 1, 1997. China became a Member of UPOV on April 23, 1999, of the UPOV Convention of 1978.[208] Thus, China has chosen a *sui generis* system for the protection of plant varieties under Art. 27(3)(b) of the TRIPs Agreement. Patents are obtainable for processes used in producing products concerning animal and plant varieties. In the mean time, China is considered to have a "pro-active and visionary strategy" regarding intellectual property.[209]

203 *Yu*, The Second Amendment of the Chinese Patent Law and the Comparison between the New Patent Law and TRIPS, 4 The Journal of World Intellectual Property, 137, 145 (2001).

204 *Ganea*, Die Neuregelung des chinesischen Patentrechts, GRUR Int. 2002, 686, 706.

205 *Ganea*, Die Neuregelung des chinesischen Patentrechts, GRUR Int. 2002, 686, 689.

206 *Yang*, The Development of Intellectual Property in China, 25 World Patent Information 131, 136 (2003), *Chengsi*, TRIPS and Intellectual Property in China, 19 European Intellectual Property Review 243, 244 (1997).

207 *Yu*, The Second Amendment of the Chinese Patent Law and the Comparison between the New Patent Law and TRIPS, 4 The Journal of World Intellectual Property 137 (2001).

208 Available at www.upov.int.

209 *Idris&Arai*, The Intellectual Property-Conscious Nation: Mapping the Path From Developing to Developed, WIPO Publication No. 988(E) (2006), 33.

III. Implementation of the TRIPs Agreement in India

The establishment of the patent system in India commenced in 1856 with the Act of Protection of Inventions based on the British patent law of 1852.[210] The Patent Act of India of 1911 allowed patenting of food, pharmaceuticals and chemicals. After India gained independence in 1947, a new Patent Bill was tabled in Parliament in 1965 and was reintroduced in 1967, resulting in the Patents Act of 1970 becoming effective on April 20, 1972. It excluded food from patentability:

> "In the case of inventions claiming substances intended for use, or capable of being used, as food or as medicine or drug (...) no patents shall be granted in respect of claims for the substances themselves, but claims for the methods or processes of manufacture shall be patentable."[211]

Food was defined as "any article of nourishment (including) any substance intended for the use of babies, invalids or convalescents as an article of food or drink."[212] Food-related substances had been excluded from patentability. The term of protection of food-related processes was restricted to 7 years from the filing date of the complete specification. The existing patents on food were transformed to "licenses of right":

> "Every patent in force at the commencement of this Act in respect of inventions relating to substances used or capable of being used as food or as medicine or drug shall be deemed to be endorsed with the words "Licenses of right"(...)."[213]

Licenses of right had the effect that "any person who is interested in working the patented invention in India may require the patentee to grant him a license for the purpose on such terms as may be mutually agreed upon (...)."[214] The remuneration however, was limited to a maximum of 4% of the net ex-factory sale price of the patented article.[215] Finally, methods of agriculture and horticulture were not considered an invention and therefore were not patentable.[216]

210 *Mukherjee*, The Journey of Indian Patent Law towards TRIPS Compliance, IIC 2004, 125.
211 Sec. 5(1)(a) of the Indian Patent Act of 1970.
212 Sec. 2(1)(g) of the Indian Patent Act of 1970.
213 Sec. 87(1)(a)(i) of the Indian Patent Act of 1970.
214 Sec. 88(1) of the Indian Patent Act of 1970.
215 Sec. 88(5) of the Indian Patent Act of 1970.
216 Sec. 3(h) of the Indian Patent Act of 1970.