## C. Patentability of food in Brazil, China, and India

The historical development regarding the patentability of food under the TRIPs Agreement in Brazil, China and India is shown in a comparative manner taking into account the historical development in Germany.[187] The question, why there was an exemption to patentability of food and the question, which consequences had its abolition will be answered. First, the implementation of the TRIPs Agreement in Brazil, China and India is shown retrospectively. Next the increase in food-related patent applications as a consequence of the abolition of the exemption to patentability is demonstrated. As Director General of WIPO *Idris* puts it "one of the most reliable indicators of innovation in a particular country or region is patenting activity."[188] Finally the economic situation of the food sector in Brazil, China and India is used as an indicator of the economic influence of the patentability of food-related inventions.

### I. Implementation of the TRIPs Agreement in Brazil

The first Brazilian Patent Act of 1809 excluded food from patentability.[189] Since then food has not been patentable. Brazil ratified the TRIPs Agreement by decree No. 1.355 on December 30, 1994, which entered into force on January 1, 1995. Brazil is considered a developing country, and thus enjoyed a transition period of 4 years under Art. 65 (2) of the TRIPs Agreement for implementing the TRIPs Agreement. Brazil enjoyed another transition period of 5 more years under Art. 65(4) of the TRIPs Agreement with respect to substances initially excluded from patentability, namely food. Brazil amended its patent system in 1996 by the Industrial Property Law of May 14, 1996, which entered into force on May 15, 1997.[190] Sec. 8 of this law states that "any invention complying with the requirements of novelty, inventive activity and industrial application shall be patentable."

187 A recent study by *Imam* discusses the benefeits through stronger patent protection in Brazil, China and India and claims that reforming the domestic patent protection systems of developing countries is the first step towards meaningful economic growth, *Imam*, How Does Patent Protection Help Developing Countries?, IIC 2006, 245.

188 *Idris&Arai*, The Intellectual Property-Conscious Nation: Mapping the Path From Developing to Developed, WIPO Publication No. 988(E) (2006), 13.

189 *Graca Aranha*, The Challenge for the Medium Sized Office, WIPO Conference on the International Patent System, Geneva, March 25-March 27, 2002,
available at www.wipo.int/patent/-agenda/ en/meetings/2002/presentations/gracaaranha.pdf.

190 Law No. 9,279; English version
available at wwww.e-moeller.com/Ingles/htm/Legislation-Brazil-01.htm.

Thus food was patentable under the new Brazilian Patent Act of 1996 as of 1997. Pipeline applications could be filed during the transitional period between May 16, 1996 and May 15, 1997. According to Art. 229 of the Brazilian Industrial Property Law, the provisions of this law would be applied to all pending patent applications. The patentability of food and processes for the production of food would be conditioned by the provisions of subsequent Articles 230 and 231, the so called pipeline provisions. According to the pipeline provisions a patent application had to have been filed abroad, the date of the first foreign filing being acknowledged. Furthermore the subject-matter should not have been placed on any market on the direct initiative of the proprietor or by third parties with his consent. Finally third parties should not have carried out in Brazil serious and effective preparations for exploiting the subject matter of the application or patent. If the subject matter of interest had already been claimed in a pending Brazilian patent application, a new application could be filed under the pipeline provisions, provided that the applicant abandoned the pending application.[191]

The pipeline provision entered into force on May 15, 1996 and expired on May 15, 1997. Pipeline patent applications on food must have been filed no later than May 15, 1997. They can claim the earliest priority provided that they have not been marketed and enjoy the term of protection from their earliest priority date. Brazil amended this provision by Provisional Measure No. 2006 of December 12, 1999.[192] Patent applications on food that have not been filed in accordance to pipeline protection are considered rejected. Moreover, the Brazilian Patent and Trademark Office is obliged to publish the referred rejections. This indicates Brazil's intention to reduce protection for food-related inventions to the absolute minimum under Art. 70(8)(9) of the TRIPs Agreement.[193]

"The whole or part of any living creature" is excluded from patentability in Brazil.[194] Transgenic microorganisms, however, are patentable.[195] Transgenic microorganisms are defined as "organisms, except the whole or part of plants or animals, expressing, through a direct human intervention in their genetic composition, a characteristic not normally attained by the species under normal conditions."[196] Thus, Brazil has used the option provided by Art. 27(3)(b) of the TRIPs Agreement to exclude plants and animals from patentability. The protection of plant varieties according to Art. 27(3)(b) of the TRIPs Agreement is provided for by Brazil's plant variety protection system. The Cultivar Protection Bill was adopted in 1991 and amended in 1995 and 1996.[197]

191 Art. 230 (5) of the Brazilian Industrial Property Law.
192 Law No. 10.196 of February 14, 2001.
193 *Franz*, Die unmittelbare Anwendbarkeit von TRIPS in Argentinien und Brasilien, GRUR Int. 2002, 1001, 1009.
194 Sec. 18(3) of the Brazilian Industrial Property Law.
195 Sec. 18(3) of the Brazilian Industrial Property Law.
196 Sec. 18(3) of the Brazilian Industrial Property Law.
197 Cultivar Protection Bill, which was established in 1991 and now incorporates aspects of Bills No. 1325 of 1995 and No. 1457 of 1996.

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.