Chapter 3. NATIONAL AND INTERNATIONAL ISSUES RELATED TO BASMATI RICE

As discussed in the previous chapters, little empirical evidence is available on problems related to cultivation of Basmati rice and its international trade. The study of these problems assumes importance, particularly in the context of increasing global demand and expanding trade.

Since one of the major objectives of this study is to calculate the cost of cultivation of Basmati, various studies on cost of cultivation were referred. In India, most of the studies on cost of cultivation of crops were done during the fifties and sixties. But their main focus was on understanding the problems in calculating the cost of cultivation of crops and assigning suitable methodologies. Some other cost of cultivation studies referred to were those of Bhagat Singh 1966 and that conducted by the Department of Economics and Statistics, Ministry of Agriculture and Irrigation in 1971-72. These studies looked into the economics of cost of cultivation of Wheat in Punjab and Paddy in Andhra Pradesh respectively.

The first and a major study on cost of cultivation of Basmati rice was carried out for APEDA by the Green World People, an NGO based in Chandigarh. The survey included Basmati growing regions of Punjab, Haryana and Uttar Pradesh covering 55 villages. The study was undertaken during 1995, 1996 and 1997. The main objective of the study was to analyse the changes in production pattern of Basmati over the years and understand the reasons thereof. However, the methodology used for calculating the cost of cultivation has not been explained properly.


Another study pertaining to Basmati was conducted by Samar.K. Datta. The author has estimated global competitiveness of Basmati and three varieties of Non-Basmati grown in some regions of Punjab and Haryana by using indices such as Domestic Resource Cost Ratio (DRCR) and Nominal Protection Coefficient (NPC) through the framework of Policy Analysis Matrix (PAM). According to Prof Datta, a large part of the underlying cost of cultivation data had been collected from rice industry sources.

However, the present study is different from the above two studies on many aspects. It is more comprehensive with emphasis given to the methodology used for calculating the cost of cultivation, measures of global competitiveness, analysis of Indian Basmati rice trade and its international competition with Pakistan and the impact assessment of the WTO on Basmati rice. The results from the present study have been compared with the relevant past studies.

This chapter is organised into four main sections. The first section is on Basmati rice varieties. The second section is on issues under Trade Related Intellectual Property Rights (TRIPS), which incorporates the issue of Basmati Patents. The third section is on the tariff structure of Basmati rice. The fourth section is on the issue of Basmati adulteration and the last section is on constraints on Basmati exports.

A few published literatures on Basmati are available. Most of them are centred on the issue of Basmati patents. Other available materials deal with its varieties and tariff structure. The information related to adulteration of Basmati has been obtained from APEDA, Rice India journals, All India Rice Exporters Association (AIREA), and relevant websites like www.oryza.com and www.basmati.com.

3.1. Basmati Rice Varieties

Basmati Rice is grown only in the North Western regions of India comprising parts of Punjab, Haryana, Uttarakhand, Western Uttar Pradesh and in small pockets of Jammu & Kashmir. The Basmati rice cultivated in Punjab and Haryana is mainly of

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10 The PAM is a computational framework, developed by Monke and Pearson in 1989 and augmented by Masters and Winter-Nelson in 1995, for measuring input use efficiency in production, comparative advantage, and the degree of government interventions. The basis of the PAM is a set of profit and loss identities. (Samarendu, Cheng Fang, and Jagadanand Chaudhary., 2002)
exportable quality. The reason being that, the Doab area of Punjab and the fertile plains of Haryana are traversed by perennial snow fed rivers generating alluvium. These states are also known for their developed rural infrastructure. However, the quality of Basmati Rice of Uttaranchal and Western Uttar Pradesh has deteriorated and area under Basmati rice is progressively being replaced by Sugarcane.  

Two categories of Basmati rice varieties have been notified under the Seed Act of India, 1966. These are the (a) traditional and the (b) modern Indian Basmati rice varieties. Traditional Indian Basmati rice varieties are those in which the unique features of Basmati, said to be the culmination of centuries of selection and cultivation by farmers, are well preserved and maintained in their purest form. Indian historical and archaeological findings imply that varieties with such unique morphological and quality attributes are not present anywhere in the world. The popular traditional varieties include Basmati-370, Pakistani Basmati, (Basmati-386), Type 3, Taraori Basmati (HBC-19), Basmati 217 and Ranbir Basmati (IET-11348).

Meanwhile, through continuous research and development, plant breeders have developed some modern varieties of Basmati rice. These include some improved varieties that are improved variants of traditional varieties (For example, a variety named CSR-30 is an improved variant of the traditional HBC-19). Further, scientists have crossed low yielding traditional varieties of Basmati with other high yielding semi-dwarf Non-Basmati varieties to develop hybrid lines of Basmati. These hybrid Indian Basmati rice varieties include Pusa Basmati (IET 10364), Punjab Basmati –1 (Bauni Basmati), Haryana Basmati -1 (HKR-228/IET-10367), Mahi Sugandha and Kasturi.

Among the cultivated traditional varieties, Taraori Basmati (HBC-19) is the most preferred variety among the farmers followed by Basmati 370 and Type 3 Basmati. These varieties give lesser yields compared to hybrid varieties but fetch higher prices. Ranbir Basmati is grown in small pockets of Jammu & Kashmir. It is mainly used for domestic consumption and is not exported. In India, the production of Basmati 217 is reported to be negligible. However, among Basmati hybrids Pusa Basmati is the most profitable rice variety and is more popular with farmers and mill owners. Pusa Basmati is a surrogate of original Basmati rice and is known as ‘Duplicate’ Basmati. It is also called by other names such as ‘Tudal’, ‘Mucchal’,

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11 Information received from the SCS-Group
‘Bauni Basmati’ and ‘Russy’ (Rice India, 2002). Pusa Basmati was launched by the Indian Agriculture Research Institute (IARI) in 1985.

Basmari hybrids were introduced so as to increase the profitability of farmers as they are high yielding and involve relatively less costs in production. Among the hybrid varieties, production of Mahi Sugandha and Kasturi is negligible. CSR-30 is another modern variety which is an improved variant of the traditional HBC-19 that was developed by Central Soil Salinity Research Institute (CSSRI), Karnal and was released in 2001. However, the Ministry of Agriculture has not yet notified this variety for trade\textsuperscript{12}.

3.2. Trade Related Intellectual Property Rights (TRIPS)

The agreement on Trade Related Intellectual Property Rights (TRIPS) was one of the most important agreements in the WTO. Before discussing the issue of Basmati rice patents it is important to understand the issue of property rights in a holistic manner. In the area of TRIPs some clauses need to be discussed in the Indian scenario as it has implications for Basmati rice.

3.2.1. Geographical Indications

Geographical indication aims at informing the consumer that the item has the quality or reputation or other characteristic that is essentially attributable to its geographical origin. For example, Champagne is a term associated with wine produced in a certain region of France. Wine produced in any other country cannot be called ‘Champagne’. Similarly Basmati rice is geographically exclusive to India and Pakistan since times immemorial. Therefore, rice grown in any other country cannot be termed ‘Basmati’.

3.2.2. Bio-piracy

Bio-Piracy is a crucial issue before the third world countries, which are the largest store houses of biological diversity. The immense biological wealth of these counties provides the basic raw material for the biotechnological revolution initiated in the developed countries. The process of stealing the biological wealth of the third world countries by Multi National Companies (MNCs) has been termed as ‘bio-piracy’. The Convention on Biological Diversity (CBD) came into effect in 1993, which reflected the worldwide concern to prevent unfair exploitation of the rich genetic wealth and

\textsuperscript{12} Information received from APEDA, New Dehi and IARI, Karnal.

*Chapter 3: National and International Issues Related to Basmati Rice*
traditional knowledge of the developing countries by the developed world. The CBD reaffirms sovereign rights of member nations over their genetic resources. Despite this, the convention places foreign firms in an easy position and extends access to these medicinal plants, in exchange of a fee to be paid to the community in the name of benefit sharing. But, a lot of royalty has to be paid to the patented plants developed from these medicinal plants later on. The majority of farmers do not know of these gimmicks (Singh et al, 1999). Moreover, the CBD does not provide any explicit rights to nations whose biological wealth had been transferred to the developed countries before 1993. Several gene banks have been operating in a number of developed countries since nearly two and a half decades for collection of germplasm from all over the globe. For example, Rice Tec Inc had developed its Basmati lines from strains obtained before the CBD (Gadgil and Utkarsh, 1999).

3.2.3. Farmers’ Rights

The TRIPs agreement requires that plant varieties including seeds and other forms of propagating materials must be protected either by patents or by an effective ‘sui generis’ system or a combination of both. A ‘sui generis’ system for plant varieties means that the system is designed exclusively for the protection of plant varieties. The requirement of efficacy would prohibit farmers saving, replanting or selling their produce from the protected varieties for reproductive purpose. The International Union for the Protection of New Varieties of Plants (UPOV), 1991 only provides for strong Plant Breeder’s Rights (PBR) suited to the developed countries where the function of grain and seed production is divided between the farmer and the breeder, respectively. Thus, developing countries like India where more than half the seed supply is ensured by saving and exchanging of seeds therefore require an innovative piece of legislation looking beyond the UPOV.

It was obligatory for India to enact a PBR system by the year 2000. Such a system would need to protect the right of a plant breeder to exclusively market commercially the new plant variety developed (called the ‘protected variety’). To qualify for protection, the plant variety must fulfil four basic criteria viz., novelty, distinctness, uniformity and stability. No known plant variety or no new variety that fails to fulfil these stringent criteria can get protection under the PBR system. The basic objective of a PBR system is to encourage plant-breeding capabilities and to stimulate investment in this field. India’s PBR system will apply only to such new
plant varieties developed after the year 2000. That is, those varieties which are already in the 'public domain' will not in any way be covered by such protection. Further, India is free to provide privileges to its farmers entitling them to use farm saved-seeds (of a protected variety) for growing subsequent crops on their own lands or on leased lands or for traditional exchanges in the village community. As long as the farmer remains a 'grain producer' and does not turn himself into a large scale 'commercial seed producer' of the protected varieties, the freedom to use farm saved seeds will not be affected by the PBR system. A new concept called 'farmers rights' was introduced in 1989 with the approval of the FAO. It proposes that, just as the 'formal innovation' of the individual modern plant breeder is recognised and rewarded under the PBR system, 'collective intellectual property rights' should be granted to farmers to preserve and promote biodiversity. A careful perusal of the TRIPS agreement of the GATT 1994 would reveal that some of these apprehensions may be unfounded. 'New' varieties for which protection would be sought and given may be few in number. Most of the sales of seeds among farmers pertain to the existing non-protected varieties. Further, the question of farm-saved seed is relevant for self-pollinating crops, like Wheat, paddy, etc. So far as hybrid seeds are concerned, the farmers even today buy hybrid seed from the seed companies because these seeds lose vigour with successful cultivation of such crops (Siddhu, 1999).

3.2.4. IPRs and Food Security

Food security can be understood at different levels from the household to the international level. At the basic level food security is about fulfilling each individual's human right to food. While the overall availability of food is not the major concern at present, food availability in specific regions of the world and access to food by specific individuals remains a major concern especially in developing countries. Further, population growth in countries where under-nourishment is already a problem and diminishing arable land availability make food insecurity one of the most important policy challenges of recent years. It needs to be mentioned that food security is not only dependent on availability of food but also on effective access and appropriate distribution of existing foodstuffs. Within the broad question of human right to food, food security also relates more specifically to issues of agricultural policy, economic development and trade. Herein, food security has been looked at from the narrow perspective of intellectual property.
IPRs have become increasingly important in the past couple of decades in a number of fields. This includes for instance agricultural biotechnology where IPRs provide a basic incentive for the development of the private sector in this area. The introduction of IPRs in agriculture is directly linked to the realization of basic food needs more so in developing countries. This is mainly because there has been a paradigmatic shift from a system seeking to foster food security on the basis of free exchange of knowledge to a system seeking to achieve the same goal on the basis of private appropriation of knowledge. This is not only due to the fact that IPRs provide different kind of incentives for inventiveness than a system based on free sharing of knowledge but also because some of the new plant varieties are the product of genetic engineering which requires the patenting of discoveries (Cullet, 2003).

Under the TRIPS provisions, the patenting of discoveries would make the research results much more costly and would only benefit the patent holders at the cost of large sections of the farming community in developing countries like India. There would be an increase in seed cost, restricting adoption of improved seed (Bhalla and Singh, 1996). These viewpoints have been also upheld by scholars like, Nayyar and Sen., 1994, Guleria et al., 2000). Secondly, greater focus on market-oriented crops/areas may neglect small and marginal farmers, especially in marginal areas. Thirdly, a seller’s market may emerge gradually restricting technology options available to the farmers and exposing them to greater production risks. The positive view was that rapid technological development would help attain greater productivity gains, strengthening the national food security. However, the major impact on food security can be assessed only when technological changes in major food crops like Rice and Wheat are known (Swaminathan and Pal, 1999).

3.2.5. **Basmati Patents Issue**

The TRIPS agreement covered eight types of intellectual property viz., patent, trademark, copyrights, industrial designs, integrated circuits, geographical indication, and protection of undisclosed information and control of anti-competition practices in contractual licenses. Among them, patents on Basmati have generated controversy in India and its sub-continent. It is in this sector that advanced countries have a distinct edge over the developing and the underdeveloped countries. A patent is given for an invention. To qualify for a patent an invention must satisfy three main criteria viz., it
must be new, it must involve an inventive step and it must be useful in agriculture or industry.

Against this backdrop the issue of Basmati patents has been discussed in detail here. US Patent No. 5,663,484 entitled ‘Basmati Rice Lines and Grains’ was granted to Rice Tec Inc, Inc. Alvin, Texas, USA on September 2, 1997. Rice Tec Inc had developed its Basmati lines from strains obtained before the establishment of the Convention on Biological Diversity (CBD) in 1993, and thereby the above patent was filed in the United States Patent and Trademark Office on July 8, 1994. The inventors of the above patent are Eugenio S Sarreal, John A. Maan, James Edward Stroike and Robin D Andrews.

The US patent application consisted of 20 different claims (a patent application must have at least one). Of these claims No. 15, 16 and 17 related to ‘novel rice grains’, bred by the company, wherein the starch index (a sum of per cent amylose and alkali spread value) which decides the texture, the 2-acetyl-l-pyrroline content (a chemical relating to the characteristic aroma of Indian Basmati rice), the length and width of the grains (a measure of grain dimension) were estimated, range values were given for above characteristics along with burst index (a measure of integrity of cooked rice grains). The firm claimed that the grain developed by its scientists was unique. In essence the invention claimed in the above patent relates to novel rice lines and to seeds and grains of these lines and to a method for breeding these lines. The invention also relates to a novel means of determining the cooking and starch properties of rice grains and its uses in identifying desirable rice lines.

In the US, Rice Tec has been using the names ‘Kasmari and ‘Texmati’ for over 20 years. The Government of India argued that the specific grain traits listed were already found in over 90 per cent of the Basmati germplasm existing in India and Pakistan much prior to the filing of the patent. Rice Tec Inc had basically cross-bred the Pakistani Basmati germplasm with its own local rice varieties, and released the hybrids named, ‘Texmati’ and ‘Kasmari’. However, the Basmati varieties are bred over centuries by farmers of the Indian subcontinent. Crossing different varieties for getting mix traits, transferring characteristics from Basmati and the semi dwarf characteristics are also not novel. In fact, the characteristics for which Rice Tec has claimed a patent are derived from traditional Basmati.

If patents of Rice Tec were recognised in India, the patent claim would definitely force the Indian farmers (who are growing Basmati) to pay royalty as the

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claim covers the same type of varieties. Moreover, this would have serious repercussions for not only will India lose out a huge US import market but also its position in crucial markets like the Middle-East, UK, EU, and West and South Africa will be weakened.

The technical committee constituted by the Ministry of Commerce, Government of India realised that it was the only patent given for rice line. The patent was primarily addressed to the breeders and was of very complex nature. It involved the uphill task of collating necessary documentary evidences to destroy novelty and the inventiveness of the said patent and demolish 20 claims put forth by the company. However, there is a clause in the US patent laws that will accept any information already available in published or written form anywhere in the world as ‘common knowledge’. The technical team had succeeded in collating many relevant documents and forwarded them to the US attorneys to seek their opinion about the quality of documents collated.

The Government’s American Lawyers had a multi-pronged strategy to contest the US patent claim. First was to take action with respect to the numerous trademarks registered in the US for Basmati by getting friendly parties to confirm that they are selling only Indian/Pakistani Basmati or to have them cancelled. Thereafter, oppose unfriendly marks in the trademarks registry. Thirdly to file an action under 15 USC S.1125 (a) in a U.S. district court to prohibit those improperly designating U.S. grown rice as Basmati Rice and fourthly to cooperate with Pakistan to arrange for co-ownership of a ‘certification mark’ (compelling Pakistani and Indian traders to agree to respect the certification), thus, permitting it to be enforced in the US and elsewhere. Meanwhile, due to the controversy generated after the Rice Tec Inc being granted a patent on ‘Basmati Rice Lines and Grains’, India filed for re-examination on April 28, 2000. The Indian challenge was related to grain quality such as linear kernel elongation and exquisite aroma of a Basmati grain.

There were several constraints in fighting the Patent. Firstly, there was a lack of information on ‘Prior-Art’ of Basmati in India. Rice Tec Inc had filed a patent application in July 8, 1994, and was granted the patent on September 2, 1997. As per the US patent law and procedures, a patent application when received by the Patent office, is examined by the Examiner / Controller of Patents, who upon the satisfaction that the patent applied for is novel and has inventiveness grants the patent. The patent is valid for a period of 20 years from the date of filing. However, any pending US
patent application is a secret document and no details of such pending US patent application will be available to the public before grant of a patent on the application. Therefore, no opposition to any pending US patent application is possible before the period of its validity by way of re-examination of the patent. To defend a patent, it is mandatory for the appellant to have a ‘Prior Art’ ready one year before the date of contesting the patent. The ‘Prior Art’ is basically information regarding the product like its historical background, details of cultivation, its uses etc. However, in the case of Rice Tec Inc’s patent on ‘Basmati Rice Lines and Grains’, India had no ‘Prior-Art’ available at the time of challenging the patent. So, a marathon search was started to find materials on Basmati such as reports, documents, books, cookery / recipe books, dictionaries etc. Among these was a notable book titled ‘The Scented Pearl of India’.

The author of this book had researched the historical background of Basmati rice cultivation in the sub-continent, its aroma, cooking qualities etc, which served as the basis for contesting the Basmati patent. Some excerpts are: “One can hardly recall in his poem of Heer and Ranjha, the great Punjabi poet Varis Shah has described Basmati in 1766. Much prior to this the earlier reference to red grained Mushkin (Urdu syllable for scented) and Sukhdas is traced back to Abul-Fazl Allami’s Ain-e-Akbari. Thus, it is quite evident that Basmati Rice perhaps from its very occurrence has been recipe entertainer of the elite of elite. In this context not much has changed even today, as this scented pearl is still the ‘dream of the masses’ and ‘charm for the classes’. One need not overemphasize the historical fact that the naturally perfumed or scented varieties were always treasured and possessively guarded by the nobles and in some instances could be grown under the direct supervision of the King with ordinary people not allowed into the proximity of fields. Yet, the supremacy of Basmati cannot be superseded by any other scented variety because of its unique characteristics viz. superfine kernels, exquisite aroma, sweet taste, silky texture, delicate curvature and linear kernel elongation with least breadth - wise swelling on cooking. By any stretch of imagination, Basmati can be equated with ‘Champagne’ among wines and ‘Scotch’ among Whiskies”.

Secondly, there was no legislation passed on Geographical Indications. The Geographical Indications Act is envisaged in the TRIPS clause of the WTO as an IPR tool that offers protection to goods that can be identified as originating or manufactured in the territory of a country, or a region or locality in that territory where a given quality, reputation or other characteristics of such goods is essentially

Chapter 3: National and International Issues Related to Basmati Rice
attributable to its geographical origin. To invoke the TRIPS provisions, a product needs to be domestically protected through the Act of Geographical Indications. Though India has been growing Basmati since time immemorial, there was no legislation on Geographical Indication during time of contest i.e. in 1997 thereby rendering India’s case untenable. This was a drawback as this act could have served as a weapon for contesting the Rice Tec Inc patent. However, realising its importance, the ‘Protection of Geographical Indications of Goods Act’ was framed in India in 1999 and was promulgated on September 15, 2003.

Thirdly, cost involved in contesting the patent claims. APEDA had fought this legal battle by appointing a patent attorney. All the legal proceedings involved heavy costs. Poor documentation on part of Indian scientists and traders acted as an impediment in contesting Rice Tec Inc’s claims. Basmati cess levied on exports should have sponsored such a research, but these were wasted. Further, since Basmati is an important export commodity in Pakistan, trans-boundary issues seemed to weaken our case further.

Meanwhile, the lawyers who fought the patent case for the Indian government challenged this patent on the basis that the Basmati plant varieties and its grains have already been cultivated and thus cannot be patented. They had encountered some information from the US National Agricultural Statistics Service in its latest Rice Yearbook 1997, released in January 1998, which states that almost 75 per cent of US rice imports are the Jasmine rice from Thailand and the rest are from India and Pakistan. The varieties imported from India and Pakistan cannot be grown in the US. This piece of interesting information was used as evidence against the Rice Tec Basmati patent. The lawyers also criticized the procedures for granting patents in the US claiming it to be opposite to the one followed in India and Europe. According to them, India first examines a patent application, and then widely publishes it for third parties to challenge, and only then grants the patent. However, the US keeps the patent application a closely guarded secret and grants it without allowing other parties to challenge it. After the patent has been granted, third parties are then allowed to petition against the patent. The criticism clearly illustrated the shortfalls in the patent process in the US that ultimately need to be revised to prevent its misuse as happened

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for Indian Basmati rice (TED\textsuperscript{13} Case Studies). However, the only solace to India and Pakistan comes from the fact that the European Commission has agreed to protect Basmati rice under its regulations pertaining to geographical indications. It had allowed only the long grain aromatic rice from India and Pakistan to be packed and sold as Basmati in the traditional markets of EU. However, this trademark like protection has been offered by the natural choice of the consumers but has no legal locus stand domestically. However, the US might force the EU to allow sale of US products at the cost of Indian exporters.

Trademarks are granted for distinctive signs, words or their combinations (including sound and smell in some countries) that help to distinguish products and services. Trademarks help the consumer to select a product of his/her choice in the market place. It is also linked to the labelling of products. In India, Basmati is sold under different trademarks such as ‘Kohinoor’, ‘Lal Quila’ etc. As regards to the issue on trademarks, in 1997 the Trademark Administrative Authority in Greece rejected Rice Tec from using ‘Kasmati’ in Greece on an appeal by APEDA. In January 1999, Rice Tec also withdrew its trademark application for ‘Texmati’ in the UK. Cancellation or rectification aspects of trademark granted to various companies including Rice Tec in respect of deceptively or confusingly similar trademarks to Basmati (such as Rice Tec’s ‘Kasmati’) have been initiated in 19 jurisdictions. So far only limited success has been achieved in the UK, Greece, Chile, Columbia, Spain, and Brazil where the government has successfully opposed trademark applications for registering the name, names or marks, similar to Basmati.

In September 2000, Rice Tec withdrew four grain related claims contested by India (4, 15, 16, and 17). Unlike the four withdrawn ‘grain-specific’ claims, the other 16 claims were basically plant or ‘lines-specific’. That is, these concerned claims of Rice Tec having developed ‘novel rice lines’ that could produce grains having characteristics ‘similar or superior to those of good quality Basmati rice’. Further, these plants possessed the high-yielding, disease-resistance and photoperiod-insensitive traits found in modern semi-dwarf rice varieties. The patent also claimed that the ‘novel’ lines could be cultivated in ‘North, Central or South America, or Caribbean Islands’. That is, while the withdrawal of the grain-specific claims ensured that Rice Tec would not be able to block Basmati rice exports from the subcontinent

\textsuperscript{13} TED Case Studies – Trade and Environment Database (http://www.american.edu/TED/basmati.htm)
to the US, it could, however, produce ‘similar or superior’ grains outside India and thereby end the subcontinent’s monopoly in its trade.

In May 2001, Rice Tec withdrew 11 other claims - Nos. 1, 2, 3, 5, 6, 7, 10, 14, 18, 19 and 20, which means that, as of now, only five out of the original 20 claims remain uncontested. Claims 8, 9, 11, 12 and 13 pertained to the specific rice lines developed by Rice Tec and not to any varieties/lines grown in India. These claims relate to three ‘novel rice lines’ namely, Bas867, RT1117 and RT1121, which are capable of producing grains similar or superior to Basmati rice. But, these are relatively harmless claims pertaining to Rice Tec’s specific plant varietal breeding efforts and not open-ended claims covering grains per se. Though the United States Patents and Trademarks Office (USPTO) has dropped the term ‘Basmati Rice Lines and Grains’ from the title of the patent, one of the strains has been allowed to use the word ‘Bas 867’. This could mislead consumers into believing that the product is Basmati Rice originating from India or Pakistan. (Krishna Sarma, 2002)

Therefore, by timely intervention by the Indian government the attempt to patent Basmati rice by Rice Tec Inc was thwarted on the basis of the Act of Geographical Indications and on the grounds that Basmati varieties were farmers’ varieties bred over centuries by farmers of the Indian subcontinent and that the characteristics for which Rice Tec had claimed a patent were derived from traditional Basmati. It has been argued in the case of farmers’ rights that if a country takes germplasm for a particular crop from another country the former has to pay royalty to the latter. No country can purchase germplasm of Basmati from India because it cannot be grown anywhere else in the world other than the Himalayan foothills. So, farmers in India can purchase or reuse seeds. However, the only issue in the WTO that had the potential for affecting Basmati exports adversely was the ‘Patents’ issue under the TRIPs agreement. Fortunately due to timely legislation even this threat was done away with.

3.3. Tariff Structure of Basmati Rice

Since 1995, the import duties on rice were fixed by the EU through a complex process, linked to the EU’s ‘intervention price’ and world ‘reference price’. In India, there was a duty derogation of Basmati of 250 Euros/Tonne for all notified varieties from the year 1995. For Pakistan this was only 50 Euros/Tonne. However, since
September 2003 duty derogation of 250 Euros/Tonne was allowed for even Pakistani varieties. The import tariff on rice in EU is calculated in the following way:

\[
\text{Duty} = \text{Ceiling Price} - \text{Reference Price}
\]

\[
\text{Where, Ceiling Price (CP) = Intervention Price } \times \text{Margin of Preference}^{14}
\]

\[
\text{Intervention Price (IP) = 298.35 Euros/Tonne}
\]

\[
\text{Margin of Preference (MOP) = 1.8}
\]

\[
\text{Reference Price (RP) = 200 Euros/Tonne}
\]

\[
\text{Ceiling Price} = 298.35 \times 1.8 = 537
\]

\[
\text{Duty} = \text{CP} - \text{RP} = 537 - 200 = 337 \text{ Euros/Tonne}
\]

Tariff rate of 337 Euros/Tonne is greater than 264 Euros/Tonne, which is the bound rate and hence will prevail. As the duty derogation on Basmati is 250 Euros/Tonne, subtracting this from the bound rate of 264 Euros/Tonne yields 14 Euros/Tonne, which was the effective duty on Basmati before April 2004. However, despite this no duty was charged on Basmati rice. With reduction in ‘intervention price’ to 150 Euros/Tonne, the effective duty by this calculation comes out to be zero, which had become effective from April 2004.

From January 1, 2004, the EU had allowed a duty free access for seven premium varieties of ‘traditional’ Basmati Rice only (Table 3.1). It included six Indian traditional varieties and ‘Kernel’ variety of Pakistan (Basmati 370 being common to both countries). The move had particularly affected Pakistan because it grows mainly a hybrid variety named ‘Super’ rather than traditional Basmati varieties as grown in India.

**Table 3.1: Duty Free Exports on Traditional Varieties of Basmati Rice from January 1\textsuperscript{st} 2004**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Traditional Basmati Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Basmati-370 (notified by both India and Pakistan)</td>
</tr>
<tr>
<td>2.</td>
<td>Basmati-386 (Indian)</td>
</tr>
<tr>
<td>3.</td>
<td>Taraori Basmati/HBC-19 (Indian)</td>
</tr>
<tr>
<td>4.</td>
<td>Type-3/Dehraduni (Indian)</td>
</tr>
<tr>
<td>5.</td>
<td>Basmati-217 (Indian)</td>
</tr>
<tr>
<td>6.</td>
<td>Ranbir Basmati (Indian)</td>
</tr>
<tr>
<td>7.</td>
<td>Kernel (Pakistan)</td>
</tr>
</tbody>
</table>

Source: APEDA

\[^{14}\text{Margin Of Preference (MOP) is the difference between the duty payable under a given system of tariff preferences and the duty that would be assessed in the absence of preferences.}\]
However, from September 2004, the EU had agreed to a duty free import regime for both traditional as well as hybrid (two hybrid varieties viz., ‘Pusa’ of India and ‘Super’ of Pakistan) varieties of Basmati Rice. The underlying logic is that Basmati is a premium product, which does not really threaten European rice and therefore, deserves special treatment.

For duty free imports in the EU, the traditional Basmati varieties were selected on country of origin basis and evolved varieties such as Pusa Basmati (Indian) and Super (Pakistan) were selected on a collapsed basis. Collapsed basis refers to that even if Super Basmati of Pakistan is grown in India and Pusa Basmati of India is grown in Pakistan, they will avail duty free access into EU for those varieties. It is applicable for six varieties of ‘traditional’ Basmati Rice or pure line cultivars and two ‘hybrid’ varieties. Now both countries would be able to export Super and Pusa and simultaneously to avail of the duty free windows on these shipments (Table 3.2).

Table 3.2: Duty Free Exports on Traditional and Modern Varieties of Basmati Rice from September 2004

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Traditional Varieties</th>
<th>S.No.</th>
<th>Hybrid Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Basmati-370 (India &amp; Pakistan)</td>
<td>1.</td>
<td>Pusa Basmati (India)</td>
</tr>
<tr>
<td>2.</td>
<td>Basmati-386 (India)</td>
<td>2.</td>
<td>Super Basmati (Pakistan)</td>
</tr>
<tr>
<td>3.</td>
<td>Taraori Basmati-HBC-19 (India)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Type-3/Dehraduni (India)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Basmati-217 (India)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Ranbir Basmati (IET-11348) (India)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: APEDA

However, to control surge in imports into the EU and to protect its farmers’ interests, the EU has put in place a new simpler dual tariff regime, involving a duty of 65 Euros/Tonne on Brown Basmati rice varieties of notified varieties other than those listed in the Table 3.1 and zero duty for varieties listed in Table 3.2. For the brown rice varieties like Punjab Basmati-1, Haryana Basmati-1, Mahi Sugandha and Kasturi, a tariff of 65 Euros/Tonne has been imposed.

However, there is a leverage provided even in this duty free regime. In the event of ‘market disturbances’ taking place such as import surges the EU will consult with India’s competent authorities to seek an appropriate solution and if no agreement is reached then the EU could charge a duty of 65 Euros/Tonne on all six traditional and the two hybrid varieties mentioned in Table 3.2.
The Middle-East countries, which are the largest importers of Indian Basmati rice, do not impose tariffs on Basmati rice. The situation is similar in the case of USA and all other countries importing Indian Basmati rice.

3.4. The Issue of Basmati Adulteration

There were cases reported on Basmati rice adulteration especially from the European countries. In India, the quantity of rice supplied varies across ‘mandis’ (grain markets). Processors and exporters generally purchase from grain mandis irrespective of its quality. As Basmati rice being a premium product it fetches higher prices than other long-grain varieties. However, it is very difficult to distinguish the original from the duplicate until it is cooked. Unscrupulous rice traders use these varieties to mix with high grade Basmati for profiteering.

A Food Standards Agency (FSA) survey in Britain showed that by comparing samples with DNA from 16 approved varieties of Basmati, grown in India and Pakistan 46 per cent of all Basmati was adulterated to some degree and almost 80 per cent either did not contain the variety advertised on the packet or made it up only a minor component (Milmo, 2004).

Scientists in the UK have developed a reliable DNA screening method for identifying adulteration in Basmati rice. Under rules set by the Grain and Feed Trade Association (GAFTA), the body which regulates international rice trade, the lowest grade of Basmati can legally contain up to 20 per cent of a different variety of long grain rice. But, with the new DNA analysis the threshold limit has to be lowered to 7 per cent (Milmo, 2004). To assess the quality and purity of rice, the EC has imposed the condition of DNA test in the new import regime. Accordingly, the FSA recommended that information of the nature of a mixture of Basmati rice with other (Non-Basmati) long grain rice should be given to consumers as per the Quantitative Ingredient Declaration (QUID) provisions in the Food Labelling Regulations, 1996 and the specific variety’s name may be given as voluntary information to the consumer.

15 During the field survey farmers reported that ‘Sharbati’ was a high yielding Non-Basmati variety which receives better prices (Rs.650/Qtl) than other Non-Basmati varieties. However, rice export houses insisted that ‘Sharbati’ was a Basmati variety.
3.5. Constraints on Basmati Exports

Datta (2000) had identified and analysed the constraints operating in the case of rice exports at various levels. Though these constraints have been discussed for rice in general, they hold true for Basmati rice as well. The major constraints discussed in the above mentioned study have been reviewed here.

3.5.1. Constraints on Supply

There is a need to enhance production of Basmati. Since Basmati rice is produced in limited pockets of certain states, it is necessary to explore the possibility of extending Basmati cultivation to areas like Eastern Uttar Pradesh, and Northern Bihar which also have good soil and irrigation facilities. Even if these regions grow slightly lower grade varieties of Basmati, the farmers, traders and the country as a whole shall be greatly benefited.

Taking into account the bottlenecks in promotion of contract farming, an alternative approach like producers’ cooperatives should be established for healthy, profitable and sustainable backward linkages of exporters with farmers. Private processors and exporters could join hands with producers’ cooperatives and share the benefits of an integrated business structure.

3.5.2. Constraints on Procurement

There is lack of reliable statistics on Basmati rice. The cost of cultivation data published by Directorate of Economics and Statistics, Ministry of Agriculture, Government of India, does not provide data on area, production, yield and other related information. Therefore, the available official data sources are of little help in efficient agricultural planning.

There is a high incidence of local taxes/charges and local restrictions in rice marketing. As compared to Thailand and Vietnam and even Pakistan, India has many layers of intermediaries, who charge commission for their services and also commission on advance payment to the farmers.
Besides local taxes (Table 3.3) the Value Added Tax (VAT) of 4 per cent is applicable on Paddy from April 2003 (Damodar, 2003). Moreover, there are unofficial and illegal restrictions on the movement of raw materials from one district to another within state, which adds to unaccounted costs. However, if India is to capture global markets the government must reconsider these taxes and other restrictive practices.

There are reports on Basmati rice adulteration or mixture of various qualities of rice at the mandi level especially from the European countries (Cahal, 2004). It is reported that there should be 100 per cent purity in case of each variety of Basmati rice exported by India in general and to the European countries in particular. For the promotion of exports from India, certain proposals for subjecting Basmati to quality controls and inspection prior to export had been published in the Export Rules, 1964. Further, the Government of India approved some more proposals for maintaining Basmati quality control and inspection rules on March 1, 2001. It has also established various standards of quality control for exportable Basmati on January 23, 2003.

To assess the quality and purity of rice, the EC has introduced the condition of DNA testing at border in 2004. To ensure the export quality conditions and thereby increase exports, stringent norms have to be enforced by Indian agencies like the APEDA at the mandis as well as export houses as mixing of various grades of rice generally take place here. Proper monitoring at different stages of marketing chains will help farmers realise true price for their produce as well as prevent traders from making super normal profits. If Basmati exports are to be promoted on a sustainable basis the government should collaborate with industry associations to promote selected mandis for handling export quality Basmati with suitable quality checking facilities as per international standards.

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**Table 3.3: Village Local Taxes and Charges (%)**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Taxes</th>
<th>Punjab</th>
<th>Haryana</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Purchase Tax</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Market Fee (including Rural Development Cess)</td>
<td>4</td>
<td>3-4</td>
</tr>
<tr>
<td>3</td>
<td>Commission (Kuchha Aarhatiya)</td>
<td>2</td>
<td>2-2.5</td>
</tr>
<tr>
<td>4</td>
<td>Commission (Pucca Aarhatiya)</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>5</td>
<td>Brokerage (for purchase through middlemen)</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>6</td>
<td>Total Taxes</td>
<td>11.5</td>
<td>11</td>
</tr>
</tbody>
</table>

Source: Datta (2000)
3.5.3. **Constraints on Processing**

In recent years, rice processing industry is experiencing over capacity problem in India (Datta, 2000). There is excessive investment in rice milling as a large number of huller units have sprung up because of low installation costs as well as low cost of replacement. Moreover with introduction of several varieties of grain, the adjustment of old machinery in milling units becomes difficult and even imported machinery tends to give inconsistent performance. Excessive investment in capacity is partly a reflection of low capacity utilization in Basmati growing states like Punjab, Haryana and Uttar Pradesh where the mills operate for 180-220 days per year at the rate of 20 hours per day. It is also a reflection of lack of modern high capacity mills, for example, rice mills in India have an average capacity of 10-20 tph\(^{16}\) giving 70 per cent recovery while Thai rice mills have an average capacity of 125 tph giving 72 per cent recovery. Therefore, there is an excessive cost burden on both domestic and international consumers due to mindless over-investment in capacity along with lack of focus on efficiency improvement. There is a need for state food departments, APEDA and AIREA to maintain vigilance on this matter while issuing milling licenses or registering exporters.

The other problem is lack of high-technology machinery use for processing Basmati rice as compared to those used by Non-Basmati mills like machine dryers and colour sorting machines. Most mills in India do not have blending machines, or warehousing facilities near mill areas; and rice bags are mostly stored in open places. State-of art technology is therefore required to avoid wastage and improve utilization. Further, given the poor payment records of most rice mills, banks are often reluctant to meet their working capital needs. This in turn plays a role in the lack of modernization of the mills.

In India there full potential of by-product processing still remain untapped. There are industrial uses of rice by-products like husk, bran and broken rice. Rice bran oil being the safest edible oil for human consumption, it remains an unconventional product in India. Therefore, by-product processing in an integrated manner along with rice processing would considerably strengthen the competitiveness of rice exports.

\(^{16}\) Tph = tonnes per hour
Further, power cuts and inappropriate power tariffs also pose problems as acute shortage of power in many paddy growing states forces the industry to depend on diesel generators, which add to costs. There is also no adjustment in power supply and tariff in response to requirements of this seasonal industry during peak (November-April) and slack months.

As rice processing comes under small-scale industry, its training requirements continue to be poorly attended to. There is no mandatory requirement to undergo professional training as soon as a license is issued. The intensive training programmes currently available at Central Food Technology Research Institute (CFTRI), Mysore and IIT Kharagpur need to be fully utilized.

High import duties on quality machines puts huge burden on rice millers. It impairs their ability to modernize and to grow businesses. As a consequence it impacts even the export potential of rice.

3.5.4. Problems of Logistics

The quality control system in India is monitored by an official body called Export Inspection Agency (EIA). It inspects samples of all export consignments for reputed exporters, who have a granted authority of self certification based on past performance. Secondly, internationally reputed quality control agencies are also present in India. The importer can depute them to inspect the consignment both at the warehouse and port. Thirdly, APEDA has a laboratory recognition scheme through which it has recognised laboratories like Shriram Institute for Industrial Research, Bangalore and Vimta Labs Ltd., Hyderabad. APEDA is also encouraging export units to develop their own in-house laboratories for this purpose.

Although about 6 to 8 rice mills are in the process of obtaining ISO 9000 certification, the existing quality control set-up is still inadequate. Following the Thai example, an independent but stringent quality control coupled with standardization of products is the need of the hour. If Indian Basmati exports are to be increased, then chemical residues have to be removed at the milling stage, given the sanitary and phytosanitary\textsuperscript{17} clauses under the GATT accord.

\textsuperscript{17} In the GATT accord of the WTO, there exists an agreement on the application of ‘sanitary and phytosanitary’ regulations. Such regulations are applied by countries to protect their plant, animal and human life from the spread of pests and diseases that may be brought into the country by contaminated food products.
In India, there being no exporter pre-qualifications except one registration with APEDA, some rice traders are fly-by-night operators who strive to maximize short term gains at the cost of the country's reputation. Some specific problems are that firstly, small-time traders often back out of export contracts, if the contracted price falls short of the market price. Secondly, in the absence of proper knowledge about price quoted by others on a routine basis, quotations by Indian exporters tend to vary a lot. Thirdly, many traders quote unrealistically low prices, resulting in supply of sub-standard quality rice which usually is much different from the quality of the approved sample. Lastly, without contractual pre-specifications, most exporters ship rice in break-bulk form. These problems arise due to the absence of a strong network of commercial intelligence in India. This is in sharp contrast to the attitude of Thai rice exporters. Moreover, in Thailand, a potential exporter is required to fulfill several criteria before getting the license for export. He must be a member of the Rice Exporters' Association; he must own a warehouse of requisite area and he must have a permanent stock of 500 tonnes of Rice. India must enforce similar criteria for her Basmati rice exporters.

3.5.5. Problems of Transportation

Movement of goods by railways involves much lower cost than road transport. However, the specific problems encountered by the rice exporters with Indian railways are that it is difficult to get wagons during November to February which is the peak season of rice exports. Wagons are sometimes detached somewhere on the way and declared sick, thereby wasting valuable time of exporters in locating their cargo. Further, railways have high, fixed and equal freight charges between any two places (e.g. Delhi-Kandla), both for onward and return journey. Some other problems include long time taken, bad handling, demurrage, liability and unhygienic transport. Due to such problems rice exporters are left with no option but to use costlier truck services, which in turn work out to be costlier than the same in other rice growing countries like Thailand or Vietnam. In case of transportation by trucks, it is also not devoid of any problem. The government stipulates that truck to be loaded only till 9 tonne, whereas the normal practice is to overload up to 12 tonne. Moreover, there are unaccounted costs too in trucking operations.

There are also constraints on free movement of rice as some state governments demand special clearance for the movement of food grains from their territories to
ports. The government could look into the modalities to ensure free movement of the grains. They could also ensure development of a cadre of specialists and export-friendly bureaucracy for handling export related matters as part of the country's reform programme.

The specific problems at the Kandla port include capacity constraints which create lot of congestion, acute shortage of pilots, insufficient dock labour board gangs, insufficient number and poor maintenance of shore cranes, and unhelpful crane drivers, absence of good and modern communication facilities, vulnerability to pilferage and theft due to lax security and lack of properly fumigated and contamination-free space for storage of directly consumable products like rice. To overcome these problems, expansion of port capacities at Haldia, Kakinada, and Bombay is needed. Moreover, a part of the huge surplus land around Kandla port should be made available on long lease to relevant traders and their associations for constructing their own and separate godowns for each commodity. Labour reforms to discipline labour are needed at this critical juncture of the country's reform process. Currently, a joint venture project with the state governments of Punjab, Haryana, Rajasthan and private parties, APEDA is trying to mechanize one of the berths for grain exports.

As for customs related problems, the customs officials delay the completion of simple formalities. They are also reported to question the provision for 'self-certification' granted by the Commerce ministry only to reputed exporters.

There are also moisture problems and the problem of growth of 'Weevils' during shipment. Grain deteriorates due to insect attack, and mould damage and can even become poisonous if mycotoxins form and if adequate care is not taken particularly when rice is imported into regions with high temperatures. Formal and statutory training of exporters could be instituted.

3.5.6. Constraints of Marketing

There is stiff competition and near stagnation of Indian Basmati in the traditional Middle-East market. Basmati grown in Pakistan is 20-25 per cent cheaper than India.

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18 'Weevils' are insects that have a tendency to grow on Basmati rice grain once the temperature crosses 28° to 30° Celsius in spite of adequate cleaning and full fumigation prior to shipment from India.
and this is coupled with the fact that the consumers in the Middle-East countries are more biased towards trading with a fraternal Islamic country. It poses stiff competition to Indian exporters as most of India's Basmati exports are targeted towards the Middle-East countries.

However, Indian Basmati supposedly has vast untapped potential markets in Africa, Latin America, Australia, New Zealand and even Japan. Concerted promotional efforts need to be directed towards countries having large Indian population who can act as catalysts in promoting Basmati rice. Additional measures should be introduced to promote branded products (currently only 30 per cent of total Basmati exports) as well as to discipline the exporters through a statutory body like the proposed Rice Export Promotion Council (REPC) and circulation of a list of processors-cum-exporters with proven track records to embassies of importing countries.

Apart from these problems eco-friendly and environmentally acceptable packaging is also required. Besides being eco-friendly and environmentally acceptable, the packaging material must be commensurate with the premium quality image of Indian Basmati rice. Multi wall paper bag packaging is receiving wider global acceptance and therefore such type of packaging can be introduced.

Finally, marketing efforts must be based on better understanding of international rice demand, its trend as well as of factors influencing such demand in various importing countries, which unfortunately has not been the case except in very broad terms. Detailed information on buying habits and the type and size of packaging required is also needed for successful marketing. APEDA and AIREA can make investments in information gathering and dissemination.

3.6. Concluding Remarks

This chapter firstly critically reviewed two major studies undertaken on issues related to Basmati rice in India. These included a study by Datta (2000) and an unpublished document submitted by a Chandigarh based NGO called 'Green World People' to APEDA in 1997. However the present study was different from these two previous ones as it dealt with the economics of Basmati production and trade in a comprehensive manner.

Secondly, from the study of literature some national and international topics related to Basmati Rice were discussed. These topics were on traditional and modern
Basmati varieties, issues under TRIPS such as Geographical Indications for Basmati, Bio-piracy, Farmers' Rights and Food Security and IPRs and Rice Tec Inc’s Basmati patents issue. Apart from this tariff structure of Basmati and the issue of Basmati adulteration was also discussed. Further, Samar.K.Datta (2000) had identified and analysed some constraints operating for Indian rice exports. Though these constraints had been discussed for rice in general, they held true for Basmati as well. The major constraints reviewed in this study were regarding constraints on supply, procurement, processing, logistical problems, transportation problems and marketing constraints.

Against this backdrop, issues regarding Basmati at the grass-root level that is at the farmers’ level, temporal and spatial aspects of Basmati trade and its international competition would be studied in the ensuing chapters.