

## **Popularizing Grape Cultivation and Wine Production in India – Challenges and Opportunities**

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Wine grape cultivation is gaining strong impetus in tropical climatic conditions throughout the world. Tropical viticulture has only been practiced commercially, since approximately 50 years. Countries such as Brazil, India, Thailand and Venezuela play a leading role in the tropical grape production. However, it can be noted that there is a trend towards the expansion of tropical viticulture in the world, since there are vineyards being established in different countries in South America (Bolivia, Colombia, Peru, Guatemala), in Africa (Madagascar, Namibia, Tanzania) and Asia (Vietnam, China). The production technology in the tropical regions differs significantly from the one employed in the traditional temperate regions. It is necessary to break the bud dormancy in order to foster bud burst, and special management techniques have to be employed to overcome problems of low fertility and to control vigor.

It is generally opined that wine grapes require a temperate climate that includes predominantly winter rainfall, frost-free late spring, and warm to hot summers to ensure ripening, thus the global wine industry has been analyzed predominantly in terms of Old World and New World wines from regions characterized by those criteria (McLennan, 1996). However, this largely ignores the nascent frontier of new climate wines, including the new altitude wines of tropical zones. Between 1996 and 2006 the area under commercial grape cultivation in tropical zones in Africa, Asia and Central and South America, north and south of the equator, between the Tropic of Cancer (23.27°N) and the Tropic of Capricorn (23.27°S) increased by 155% from 55,000 ha to over 140,000 ha. The increase was most rapid in Asian

countries like India, Thailand, Myanmar and Vietnam where new vineyards for table grape and wine production are established every year (<http://estructuraehistoria.unizar.es/gihea/documents/GwynCampbell.pdf>).

Canopy management practices in wine grape cultivation have been developed with an aim of optimizing sunlight interception, photosynthetic capacity and fruit microclimate to improve fruit yield and wine quality, especially in vigorous and robust growing varieties with dense canopies. For wine making, significant benefits have been obtained from comprehensive approaches, to control shoot vigour through the use of different methods of trellis system, training systems, pruning methods, deficit irrigation, rootstocks and canopy management practices (Smart, 1985; Smart *et al.*, 1990).

Initially, wineries in tropical climate used to follow production technologies similar to traditional old world wine producing countries. But, these production technologies did not work well and hence new and specialized techniques and equipments are being used in tropical wine grape production. The quality of grapes has been improved tremendously, after the establishment of two pruning and single cropping cultivation practices. Though sunlight is not a limitation in semi-arid tropics of India, excess sunlight can harm the production and as well as can reduce the wine quality. The other major drawback in tropical climate is the more vigorous nature of vines which needs to be curtailed to improve fruit composition, especially in wine grapes.

Due to India's large land area size and varied topography, many different climates exist within the country. Geographic features such as the northern Himalayas or Thar Desert create micro-climates, and hence, greatly influence grape growing, wine making, and distribution.

### **Challenges for Grape Cultivation**

Grape is traditionally, a temperate region crop and in India it is grown in tropical belts for fresh consumption and processed products and thus faces many challenges on different fronts. In coming years, challenges may become tougher due to shift in climate, changing global scenario and associated factors.

### **Climatic Changes**

Grape is one such crop that is highly sensitive to climatic changes. There are certain critical/sensitive phases like bud- break, bloom and harvest. As majority of the grape growing vineyards in India are located in semi-arid tropics, the problems of irrigation water availability and salinity, already a serious issue will get aggravated due to climate change. The elevated CO<sub>2</sub> levels may increase productivity in arid

and semi-arid regions but, the drought stress caused by higher evaporative demand may override beneficial effects of increased CO<sub>2</sub> in the atmosphere unless irrigation can be stepped up to compensate these effects. Higher temperature may advance the ripening of berries and alter the berry composition in both table and wine grapes, thereby affecting the quality of the produce. Development of heat tolerant grape varieties, salt and drought tolerant rootstocks, though essential but requires longer period of research. Until new varieties/technologies are developed to improve water use efficiency and cope up with salinity, the emphasis needs to be given on propagation of existing crop production techniques that can mitigate the impact of climate change.

Another dimension to climate change is that the pathogens may become more virulent and/or the plants may become more susceptible, thus increasing disease severity. New pathogens may also emerge or the existing once may mutate/develop resistance. Unseasonal rains may lead to serious downy mildew incidence. There is also likelihood of change in the incidence and pattern of insect pests like mealy bug, thrips and mites. Similarly the disease incidence pattern is also likely to be affected with the change in climate as has been observed in case of downy mildew.

### **Changes in Consumer Behaviour and Preference**

Consumer preferences are affected by various factors like awareness, media, economic status, easy availability in market, substitute, health issues etc. Government policies are more focussed on awareness of consumers and food safety. There is misconception in the mind of majority of consumers that grapes receive large number of spray and residual component of these sprays are packaged with the berries.

Day by day, consumers are becoming more aware about the quality of produce/ processed product, food grade packaging, food safety and traceability, availability of substitutes in the market etc.

Consumer awareness through media play vital role in decision. In coming years, availability and market competitiveness based on quality and diversification of value added products will govern consumers' choice. The demand for functional foods based on personalized dietary requirement will drive research and grape sector to focus on value added products including processed food and need for varieties with high concentration of nutraceuticals. The availability of such products in turn will affect preference of more consumers.

More demands for chemicals free “Organic Grapes” will increase by leaps and bounds first in major Urban Cities, then in District and Sub-Divisional Towns and ultimately in vast rural areas in India in the coming years.

### **Labour Shortages and Wage Hikes**

Unlike other agricultural/horticultural crops, grape cultivation requires skilled man power to manage the vineyards. Unavailability of skilled and sufficient labour at crucial stages of crop is becoming an issue in every grape growing region. Delay in execution of time bound viticulture practices directly affects crop and quality and leads to lower return from grape production. In coming years, increase in literacy, employment availability in soft sectors and improved economy will drive youth away from farm jobs. Thus, development of tools and machinery including robotics for mechanization of vineyard operations will become mandatory and is a challenge.

### **Higher Costs of Inputs**

Grape is a temperate perennial crop but adapted in tropical and subtropical regions in India. Maintenance and harvesting of optimum quality production requires specialized trellis system, two pruning and intensive crop protection measures since crop is prone to diseases and insect pests during adverse climatic conditions. These factors results in high cost of grape production. Cost of vineyard establishment is also higher than any other fruit crop. Maintaining and harvesting a good quality crop require higher input cost like labour, agrochemicals etc. The processing industry like wine is also fully dependent on imported plant materials of wine grape varieties, machinery and equipment of wineries, cultures of microbes/yeast and packaging materials etc. The cost of imported material is high and increases the cost of wine production, thus making it less competitive in global market.

### **Competitive World Markets**

The trade policies in international arena are changing very fast. Supply, demand, trade policies, consumers are the drivers of market competitiveness. Fruit type i.e. seeded or seedless, berry colour, taste, other fruit quality parameters, diversification and availability of processed and value added products are main factors for creating new markets and making them more competitive in the years to come. The supply and availability of other fruits in the season also have influence on competition. Availability of new fruits or processed products may affect consumer demand and create competitiveness in markets during coming decades.

### **Availability of Resources**

Urbanization and infrastructure development are major factors which are responsible for faster shrinkage in cultivable land. Change in land utilization pattern also decides availability of land for grape growing. The effect of climate change

may open up other sites for grape growing than existing. In the same way, grape cultivation may have to be extended to unconventional and marginal land areas. Developing varieties and production/protection technologies for such regions will be research challenge in coming decades. Increasing population has resulted in pressure on availability of other resources like water for irrigation purpose and electricity. There is need for varieties/technology for improving water use efficiency and development of energy efficient farm and processing machinery and cooling structures.

### **Issues of Quarantine**

Market policies, consumer demand, quality of produce etc. are major factors affecting import and export of the fruits. Transportation of fruits and plant material from one place to other always provide chance of introduction of new insect-pests, diseases, weeds etc. which were not available in particular region. Due to change in trade policies and open market, entry of new insect-pests, diseases, weeds etc. with fresh grape may become frequent, which will pose threat to grape cultivation in the country and also divert research focus to management/control of new pests and diseases. The quarantine laws are not abided in full spirit and therefore there is a need to enforce laws in full measure to restrict the entry of new diseases, insect pests and host pests.

### **Soil Health Issues**

The deterioration of soil health is also becoming serious issue. Indiscriminate application of fertilizers, soil drenching of pesticides for controlling various pests, change of irrigation methods and water quality are major factors responsible for soil health degradation. Deteriorated soil health will affect the vine health, its longevity leading to poor crop and berry quality. Consideration of soil health will become prime issue for replanting the grape in same field. New arable land may be required for planting of new vineyards.

### **Genetically Modified Grape**

Genetic modification is a challenging issue in crops like grape. With conventional breeding it is difficult to develop varieties with biotic resistance. The trade of fresh grapes and processed products will be affected by policies of Indian Government and importing countries. Government policies and public resistance to accept genetically modified crop may also influence the research focus on this promising technology.

## **Opportunities for Grape Cultivation**

In the present context, technological challenges are becoming more complex than earlier time as demand for food is increasing and supply sources are dwindling. Incidentally, the science is also changing rapidly with the emergence of new tools, methods, techniques and approaches that promise technological breakthroughs to accomplish the mission.

## **Potential of Genetic Engineering**

Much of the gains in the productivity of the food commodities in the past have been attributed to the genetic alterations of the crops and animals. This will continue to be the primary driver for augmenting productivity in the lesser time, space and cost. The National Research Centre for Grapes is the National active repository for grapes and has about 524 grape accessions.

To address future needs of grape industry in India, the research should focus on characterization, genetic enhancement through clonal selection and pre-breeding, breeding for commercially important traits, development of tools for molecular breeding, functional genomics, proteomics, gene mining, molecular breeding through tools like marker-aided selection and gene stacking.

## **Newer Technologies**

Biotechnology has a considerable potential to address many of the challenges in the grape. Biotechnology tools like MAS should be developed to speed up the grape breeding for important traits. Genomics techniques are advancing at a rapid pace and it is expected that techniques for sequencing of individual genome will become affordable very soon.

Genome analysis will allow allele mining for different traits and global expression analysis by RNA sequencing will allow elucidation of gene function and study of effect of different conditions at cellular level itself. Such analysis must be utilized for developing grape varieties with desirable traits like disease resistance, self-thinning, tolerant to abiotic stress and good quality.

Global protein analysis through different proteomics approaches will allow understanding of host – pathogen interaction for major diseases like downy mildew and powdery mildew and help in developing breeding as well as management strategies. High through put analysis for metabolites could be useful for identification of nutraceutical and development of functional food. Nanotechnology is expected to play important role in processing of grape juice to wine as well as in pest control.

Pesticide formulation based on nanotechnology must be used for effective pest control and ensure food safety. Availability of machinery for different farm operations will improve input use efficiency and circumvent the difficulties associated with shortage of skilled field manpower. Bio-control methods for disease and insect pest control would provide opportunities to grow grapes with minimal pesticide use.

### **Integrated Management of Natural Resources**

More than 80 per cent of the grape cultivation is confined to the hot semiarid agro climatic region. In India, moisture stress and salinity are the key problems faced by the farming community for sustaining grape productivity. Ground water is the major contributing factor to salinity. The nutrient and water use efficiency is very poor because of poor physicochemical properties of the soil, uncertainty in water availability and poor quality irrigation water. The soil organic pool is crucial to improve the fertility status of soil.

Thus integrated nutrient management incorporating the judicious combination of organics, bio fertilizers and in organics and nutrient use based on stock-scion variety combination to mitigate different abiotic stresses is needed. Seasonal changes in climatic conditions have an impact on grape productivity through observable changes in terms of phenological events, such as bud burst, flowering, veraison, harvest and finally yield. Nutrient and irrigation schedule, therefore, needs to be standardized under such situations. Phenomics and precision viticulture practices using the advances in remote sensing has to be implemented to meet these targets.

### **Management of Bio-risk**

Some of the major pests and diseases, threatening the grape industry in other countries (e.g. *Botrytis* etc.) are not reported from our country. Bio-risk is increasing with climate change and owing to trans-boundary insect-pests and diseases. It is adding cost, reducing food production and is adversely affecting farm income. To overcome problem of bio-risk, besides emphasis on classical bio control strategies, efforts would be made to develop effective and integrated risk-and-disaster management production systems and institutional mechanisms, which would bear risk. Bio-risk intelligent system e.g. early warning systems, drought indicators, migratory movement of bio-risk agents would be developed with the help of different information and communication technologies (ICT), for taking informed decision at the local, regional and national level. DNA bar coding and sequencing techniques will be used for monitoring and minimizing bio security elements.

### **Issues for Diversification**

Diversification for value addition and to prevent market glut has great potential. Open global market, expanding hospitality sector, increasing international travel and exposure is likely to increase demand and market for wine. Therefore, research focus would be to develop technologies for improved and cost competitive wine. Native microbial diversity should be explored to obtain quality wine. Research must also be intensified on raisin and juice, enhancing shelf life for table grape and improving commercial traits like size and colour through pre and postharvest approaches to meet the demand of domestic and international market.

Geographical indicators should be developed to provide specificity to the grapes and its processed products e.g. wine, raisins and juice produced in different regions of the country. Growing upper middle class with more expenditure power, increased health consciousness and expanding retail market open up opportunity to explore and promote alternate uses of grape like medicinal/antioxidants, distillery, pigment, grape seed oil etc.

Not only wine, but also the demands for packaged drinks of quality Grapes are rising in an astonishing rate in the urban and semi-urban areas of India. The Grapes producers should now focus their attention on this aspect of value-addition and diversification for fetching more prices from their Grape produce.

### **Extension System**

Although, it is important to continuously strive to develop new and better technologies; but their effective delivery mechanism would greatly help in bridging wide gap between the potential and the realized productivity.

More far-reaching, participatory information and communication technology should be evolved by optimizing production and delivery systems and by showcasing research products for effectively linking research accomplishments with the stakeholders. Public private partnership must also be explored both for technology development and their transfer. Indian Council of Agricultural Research (ICAR) hub meeting inviting state extension department and State Agricultural Universities (SAUs) must also be organized regularly to transfer the technology to beneficiaries. New Information and Communication Technology (ICT) tools should be utilized for effective technology dissemination.

### **Wine in India – Taboos vs. Modernity**

#### **Alcohol in Indian Culture**

Wine is one of the highest taxed products in India as it is considered a luxury, not

a necessity. The use of wine is discouraged by Indian Constitution. The central government normally declares the federal customs duties applicable to imports during the union budget tabled in the Parliament of India in the last week of February every year. Customs duties for most products have declined since the year 2000; however, taxation on alcohol has been an exception to this decline, and, as it is considered a negative product, the duty has actually increased to its current rate of 150 percent ad valorem.

### **Constitution**

Mahatma Gandhi and Dr. Bhimaro Ambedkar, two leaders who had immense influence in the drafting of the Indian constitution, were teetotalers in their day, but believed that it was the responsibility of the states to regulate alcohol. Moreover, Article 47 of the Indian Constitution states that, “The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties and, in particular, the State shall endeavor to bring about prohibition of the consumption except for medicinal purpose of intoxicating drinks and of drugs which are injurious to health”.

Wine has traditionally been considered a type of liquor whereby the government morally obligates itself to protect Indian citizens from its misuse. Methods of alcohol control include: serving alcohol only at specific outlets or during specific hours; prohibiting alcohol in religious places, educational institutions and underage drinkers; and the official age of legal alcohol consumption being established at 25 years old. Most Indian states, however, have not prohibited alcohol and some (e.g. Maharashtra) even facilitate wine grape growing and wineries as an important sector of agriculture.

### **Religion**

Over 800 million Indians, or about 80.5% of the country’s population, are Hindu. The next-largest religious group is Islam, which makes up 13.4% of the population. Other religious groups include Christians (2.3%), Sikhs (1.9%), Buddhists (0.8%), Jains (0.4%), Zoroastrians(0.01%), Jews (0.0005%), Bahá’ís and others who’s percentages are not significant enough. The relationship between these religions and alcohol can be summarized as follows:

**Hinduism:** Alcohol consumption is decided by the individual and how it fits in with their personal way of life.

**Islam:** In Islam, intoxication by alcoholic beverages is generally forbidden, but Alcohol is allowed to be used for medical and other purposes, for example industrial use. Several Qur’anic verses and sayings of Muhammad prohibit the consumption of alcohol, and dealing with such a beverage.

**Christianity:** Christianity has historically had wine as a part of everyday life and also as substance in holy rites and rituals. Many Christians take a moderate approach to alcohol consumption and take care to avoid drunkenness as a form of sin, but delights in wine as a social staple. Some Christian sects have moved to complete abstinence from alcohol; however, the traditional positive view towards Wine is most common among Christians worldwide.

**Sikhism:** The Sikh Code of Conduct states, “A Sikh must not take hemp, opium, liquor, tobacco, or any intoxicant.” At the time of initiation, a Sikh vows not to use any intoxicant. Drinking alcohol is forbidden for Sikhs.

**Buddhism:** The Lord Buddha was against any form of alcohol consumption, even in moderation, because of the effect it has on the mind. Mindfulness is central to Buddhist philosophy. This concept requires a constant awareness of changes occurring in the mind and body. Mindfulness enables the individual to react wisely to emotions and sensations when they arise. Alcohol distorts the mind and makes it impossible to practice this tenet.

**Jainism:** Intoxication is something to be avoided in Jainism because it relinquishes control over one’s body. Many Jains do not consume alcohol.

**Zoroastrianism:** Many Zoroastrians drink alcohol. They have no prohibition.

**Judaism:** Alcohol is only prohibited during the Passover. Alcohol is moderately consumed by Jews.

## **Population, Demographics and Consumer Segmentation**

### **Potential Market**

There has been much debate about the precise number of potential consumers in India’s wine market. Major factors that hinder wine consumption are poverty, age restrictions and specific state alcohol prohibition. About half of the Indian population meets the minimum drinking age of 25 years; however, that number is greatly increasing as the Indian population matures. This maturity creates an opportunity for younger generations to acquire a taste for wine, breaking from a tradition of hard liquor.

### **Other Demographics – Income and Education**

#### **Income**

The Gross Domestic Product (GDP) per Capita for India was 1417.1 current US \$ in 2011-12 which has risen to 1497.5 \$ in 2013-14 (Source:- World Bank,

2015). This number, however, is greatly skewed because of the outliers in both extreme wealth and poverty.

### **Education**

The education levels in India correlate with estimates for potential consumers. In 1984-85, 34,04,096 numbers of students were enrolled in various Courses at all levels in Universities or Colleges and other Institutions of higher education, whereas in 2013-14, this figure rose to 2,37,64,960 (Source:- UGC, 2014). These nearly 24 million who have attained college level degrees could make up a large chunk of potential wine consumers.

### **Tastes, Preferences, and Presentation**

The tastes and preferences of the Indian population err towards still wines, and more specifically, table wines. Though a market exists for champagne and sparkling wines, these varieties sell at a much lesser rate than the still wines. In general, slightly sweet wines and the varietals of *Sauvignon Blanc* and *Chenin Blanc* are fairly popular and also pair well with typical Indian dishes. Similarly, rose and blush have been projected as good fits for the Indian market; however, the majority of sales have stayed on traditional still red and white wines.

In regards to presentation, wine producers have two different demographics in the Indian market upon which to focus: the upper class and the general consumer. While the upper class prefers the classic presentation, i.e. real cork, full bottle size, and dry red and white wines, the growing consumer class in India gravitates towards approachable wine packaging, i.e. screw caps, half bottle sizes, and sweet wines.

**Sources:** - Census of India – 2001.

**Constraints and challenges to Wine Production are manifold in India. Some of them are enumerated below:-**

#### **(A) High Excise Duties and Aligned Tariffs**

A high Excise Duty on majority of wine items along with the non-tariff barrier continues to create an obstruction for wine manufacturers. The added cost gets transferred to the consumer and hinders the adoption of Indian manufactured Wines. The Excise Duty structure ranges from 26% to 74% for wine segment in India. Regular interventions and recommendations are made towards lowering the duties by different trade commissions. However, the Indian government has intervened by amending the duty structure of various food items from time to time, depending upon market conditions and requirements.

### **(B) Lack of Infrastructure**

The poor infrastructure support in terms of transport and storage facility acts as one of the major laggards for locally manufactured Wines segment. The integrated cold chain framework is still at a nascent stage in India and the huge demand and supply gap of support infrastructure acts as a constraint in the supply chain of locally produced Wines.

### **(C) Supply Chain Constraints blocking the reach beyond Metros and Mini Metros**

Majority of India lives in rural and semi-urban areas, the supply chain constraints coupled with poor infrastructure support makes it impossible to reach such markets. The huge chunk of Indian wine consumers remains untapped resulting in poor growth of the segment. Factually the target segment of Indian Wineries is in metros and mini-metros, however if the support infrastructure is in place, the market can be expanded to other cities.

### **(D) Road System and Transportation**

India's infrastructure of roads, rails, ports and airports is the most vulnerable part of its supply-chain presence. India's roads consist of 48,65,394 kilo metres of length of which 76,818 kilometres were National Highways and 1,64,360 kilo metres were State Highways in 2011-12 (Source:- Ministry of Road Transport and Highways, December, 2013). In both cases, quality of much of this Road network is questionable as to reliability for modern transportation needs.

While India's rail network exceeds 66,000 kilometers, the third largest in the World (Source: - Ministry of Railways, 2015), the best two-thirds are broad-gauge and old and a vast portion of the Railways are un-electrified and single lined so as to incompatible with basic modern Rail Goods Transportation System.

### **(E) Ports Infrastructure**

In 2013-14, India has 12 Major Port Systems consisting of Kolkata, Paradip, Vizag, Kamarajor (Ennore), Chennai, Chidambaranar (Tuticorin), Cochin, New Mangalore, Mormugao, Mumbai, Jawharlal Nehru Port (JNP) and Kandla with traffic handled was 5,55,488 thousand tones (Source:- Ministry of Shipping, Govt. of India, 2015). But according to Sinker, Sri Lankan ports are serving India now for large container ships. Still, even these are very congested. This can mean many extra days, or weeks, to get goods to or from an importer or exporter in India.

At the same time, still a majority of Indian ports are manually, paving ways for inefficiency, malfunctioning and delays in clearing.

#### **(F) Warehousing Facilities for Goods**

The infrastructure in India in terms of road, rail, and air links are not sufficient. Therefore, warehousing plays a major role as an aspect of supply chain operations. The Central Government owned Central Warehousing Corporation has 471 numbers of Warehouses with a Storage Capacity of 104.94 Lakh MT in 2013 – 2014. However, 52.80 percent of Storage Capacity were utilized for storage of Food-Grains and Fertilizers. State Warehousing Corporations have 1689 numbers of Warehouses with a Storage Capacity of 148.33 Lakh MT in 2013 – 2014. However, refrigerated Warehousing facility for Wine storage is very limited both in numbers and in Storage Space (Source: - Central Warehousing Corporation, 2014).

#### **(G) Air Conditioning Facility**

The Government of India (GOI) considered air conditioning and refrigeration products as luxury items about 10 years ago and assigned high duty rates to the products. But the situation now changes into a somewhat positive direction. The duty rates are now more rationalized than ever in India. **Refrigeration is now allowed for Wine producers.** Imports of air conditioners and refrigerators continue in small quantities. Indian exporters import these products for their own use rather than for resale. Until recently, the import of refrigerators was restricted. Foreign firms are now allowed to establish joint ventures with local manufacturers. Indian industry looks forward to technology collaborations with other countries including the United States of America (USA).

#### **(H) Diverse Drinking Habits across the Nation**

Wine Drinks is like a religion in India, the different cultures make it a home for an array of drinks. The nation is known for diversified and distinct drinking habits throughout the globe. The assorted drinking habits work as an opportunity as well as a challenge for Indian Wine manufacturers.

Customizing the product offering according to the Indian platter has gained popularity in recent times, but the same is limited to drinking services. Catering to the diversified drinking habits and fulfilling the expectations in terms of quality and affordability will remain both as a goal as well as a challenge for the Indian Wineries.

#### **(I) Preference for Fresh and Traditional Drinks**

“Fresh is better” serves as a cacophony for drink manufacturers in India. Apart

from such misconceptions, the Indian consumer is also still very much aligned with traditional drinks, depending on region and culture. The awareness level and adoption of Wines processed and packaged in India as safe choices are picking up in India, but still much remains to be done, if Wine is to be established as a popular drink.

#### **(J) Affordability Versus Availability of similar or better Drinks at Competitive Prices**

India serves as the food basket of the world; it leads the production charts in the perishables and grains category. However the level of processing is low but it has picked up in the recent past and the industry is witnessing a year on year growth of 7-10%. Indian manufacturers are much aligned with the consumer's need, as the offerings are more cost competitive, than imported products. Availability of similar or better quality drink products like Whiskey, Rum, Vodka, Gin, Beer etc. continue to serve as a challenge for Wines produced in India. On the other hand, better quality imported produce also sets a benchmark for Indian manufacturers to raise the quality level matching the cost effectiveness.

#### **(K) Retailers and Manufacturers**

Apart from the above mentioned challenges, direct sourcing also comes as a major constraint in front of retailers and manufacturers. The direct sourcing module is still nurturing in India, only few formats like Le Marche adopt partial direct sourcing from manufacturers around the globe (Thailand, Spain, Italy, etc). The direct sourcing approach has only worked for the large retailers, with either hyper formats or gourmet selections. Apart from these hi-end retailers (Gourmet/Hyper), all other retailers depend on the distributor cum manufacturer mode for sourcing of manufactured Indian wines. This helps retailers in overlooking the Excise Duty structure, associated paper work and regulatory licensed procedures. The cost incurred in maintaining the distributor mode cannot be easily charged to the end consumer, as locally manufactured Wines do not anyway carry a pre-conceived notion of "Premium" to it.

If the above mentioned challenges can be addressed, then the sky is the limit for locally manufactured wines in India. The key opportunity areas in the future will revolve around direct sourcing, planting local bases, price betterment, introducing new products and reaching the untapped market. Apart from these, vast opportunities in the "affordable premium" market segment will be the next big opening.

## **Business Opportunities in Wine Production in India:**

### **(A) Establishment of Own Winery**

Establishing a winery requires high investment but there are high opportunities in establishing own brands in a growing economy and growing wine market.

### **(B) Contract Bottling with an Indian Winery**

This requires a lower investment yet has the same benefit as establishing a winery.

### **(C) Export and Sale of Indian Wines**

This opportunity is suggested for entry level wines from India to take advantage of negligible presence of Indian wines in India. Requires a low investment but has a gestation period of 2-3 years.

**The above business options are not mutually exclusive but can be implemented in combination for high growth.**

### **(D) Organized Retail**

The growth trend of the organized retail sector presents significant opportunities for Indian Wineries. Organized retail outlets provide a solidified distribution system for Indian Wines sold in India. These retailers allow for a timely and streamlined flow of goods to the consumer, which translates into a more attractive option for the Indian wine industry. The retail sector in India is divided into two categories: unorganized and organized retailing. Unorganized retailers or traditional retailers are small, independent, single outlet, family-owned operations, also known as “Kirana Stores”. Unorganized retailers represent approximately 99.2 percent of the food and grocery retail sector in 2005-06. Organized retailers include cash and carry, discount, hypermarkets, supermarkets and convenience stores. Indian Wines are predominantly available at organized retail chains and grocery stores that cater to high-end consumers in major urbanized cities, although some fresh Wines have limited distribution in independent shops and vendors.

Organized retailers, specifically hypermarkets and supermarkets, offer the best potential for the sale of Indian Wine products due to better infrastructure and distribution systems. As organized retail expands, distribution opportunities for Indian products are likely to grow. Currently, the organized sector represents only 0.8 percent of the market; however, organized retail is expected to expand at a growth rate of

30 to 35 percent each year. Although approximately 40 percent of the organized retailers are currently located in smaller cities, the most significant expansions in the modern retail sector are occurring in urban areas including Mumbai, Delhi, Pune, Hyderabad, Bangalore, Chennai, and Kolkata.

### **Regional Differences**

India's retail sector is highly segregated by geography. Historically, retailers were primarily located in Southern India; however, in recent years the Western and Northern areas of India have developed and more retailers have expanded their stores to these two regions. California (USA) based Wineries are more likely to penetrate the more developed regions of India (South, West and North) where organized retailers are expanding and consumers are more likely to know about imported offerings and more able to afford them.

### **Percentage of Indian Retail Stores by Region**

North	—	22.10 %
Central	—	00.20 %
South	—	56.00 %
East	—	02.10 %
West	—	19.60 %

### **(E) Wineries/Tasting Rooms**

On-premise sales occur at “outlets where consumers buy beverages for immediate consumption at or near the point-of-sale.” These locations typically involve hotels, restaurants, and specialty shops with wine tastings. On-premise locations are not only readily accessible to the consumer, but they also incorporate the import tariffs and duties within the price of the wine at the time of sale.

### **(F) Marketing and Advertising**

#### **Television**

**Television** advertisements for alcoholic products are illegal in India, so other means have been devised to present alcoholic beverages to the public. Many companies participate in “surrogate” advertising by which they present an advertisement that only mentions the name of the company without any direct reference to their alcoholic beverage or for mainly Mineral Water produced and

labeled in the same Brand Name as the Brand Name/s of the Company's Alcoholic Beverages.

### **Magazines**

**Magazines** are also prohibited from advertising alcohol except for the *Sommelier India* magazine which is dedicated to the wine trade in India. The magazine is written by Indian and international writers, and contains articles and information about the wine culture in India as well as wine profiles that critique different wines.

### **Expos**

Wine Expos and wine shows like IFE-India, Vinitaly India in Delhi, and Annapoorna India in Mumbai have become important vehicles for wine companies to do market surveys and have wine tasted by potential customers. Many expos and shows take place throughout India and are generally posted on *Indianwine.com* and *Sommelier India*.

### **On-Site Promotion**

On-site promotion can often be allowed although it is far less common. In Delhi, it is prohibited to promote/advertise alcohol products; therefore, many companies engage in surrogate advertising, in which they advertise their brand names without referencing alcohol (a common example is for a company to say "Johnny Walker" but have no mention or picture of the whiskey).

## **(H) Educational Institutions**

### **The Institute of Vine and Wine**

The Institute was built by the University of Adelaide, Australia. It has been operational since 2008 and is located 80 kms. from Pune, Maharashtra. There are a 3 year diploma program, a 4 year degree program, and a 2 year masters program in many areas of wine making, grape growing, marketing and finance.

### **(I) Wine Market Development Consultancy Firm**

The Indian Wine Academy is a New Delhi-based market development consultancy firm with extensive contacts among food and beverage professionals and hotel management institutes around the country.

The Academy was launched in 2003 by Subhash Arora, President, Delhi Wine Club, Net entrepreneur, and author, and Sourish Bhattacharyya, a food and wine

journalist with 22 years behind him in the profession. Together, they launched delWine, the country's first eNewsletter on wine, food business, retail and hospitality sectors, which is now in its 134th edition and is being circulated to 5,500 wine producers in 28 countries as well as food and wine importers, hospitality decision-makers, retail sector heads and hotel management institutes. They have coauthored the Italian Wine Guide, a guide to Italian wines listed in Indian hotels and restaurant, for the Italian Trade Commission (ICE).

### **(J) Wine Websites**

Indiawine.com is a very informative website that has articles, stories, blogs, links, and a calendar for events having to do with the development of the wine industry and the popularity of wine in India.

### **Recommendation for Up-bringing the Indian Wine Industry**

The Maharashtra State Excise Policy – 2001 may be adopted in other Indian States, if they are sincere to promote their own Wine Industry.

In 2001, the Government of Maharashtra established the following policies governing its grape processing industry:

**1. Declaration as a preferential area:** The state will be declared a preferential area for the wine industry, which will enable financial institutions to grant loans to the wine industry.

**2. Declaration as a small scale industry:** The wine industry within the state will be considered a small scale industry so that it falls within the investment regulations prescribed for small scale industries in India.

**3. Concessions in excise duties:** For those wine industries whose production was started before September 19, 2001, the excise duty will be charged at the rate of 50 percent of the production expenditure incurred by such units instead of the current 100 percent rate. For those wine industries whose production was started or would be started on or after September 19, 2001, the excise duty is charged at the rate of 25 percent of the production expenditure incurred by such units. These concessions will be admissible for a five year period.

**4. Concessions in sales tax:** All Indian states had previously set the floor rate of sales tax on liquor at 20 percent. However, the Maharashtra government will submit a request to the Empowered Committee of Finance Ministers to reduce the floor rate of sales tax on wine.

**5. Wine sales license:** Both beer bars and wine bars will be permitted to sell wines.

**6. Wine sales license fee:** A license fee of Rs. 5000 per year will be charged for wine sales. This rate will not be changed for the next ten years.

**7. Simplification of the licensing system and permission for wine production:** Investment in wine production through wine parks will enable producers to receive a production license at the district level at the time of plot allotment. Outside of wine parks, production licenses must be issued to investors/producers within 30 days.

**8. Establishment of wine institute:** To maintain the quality of wine at the international level, a separate wine institute will be established. To set up the wine institute, the government will allot the plot at the nominal rate as given to 36 other educational institutes. This institute will look after training and wine quality control as well as serve as a research and information center for the wine industry.

**9. One window system:** For the wine industry, essential license, plot, electricity supply, and infrastructure will be made available with the one window system.

**10. Establishment of a grape board:** A Grape Processing Industry Board will be established for the wine and grape processing industry in Maharashtra. The board will consist of representatives from the wine industry, grape growing farmers, the state government, government laboratories, and the previously mentioned wine institute. The jurisdiction of the grape board will be to inspect and control the quality of grape growing and wine production; approve labels; inspect quality and standard norms; and draft various schemes for the international sale of processed grape products.

**11. Facilities of food processing industries:** Wine production units will be given the status of food processing units.

**12. Wine production units – permission for tourists:** In Maharashtra, tourists will be permitted to visit wine production units for wine tasting. These wine production units will also be given licenses to sell wine on a retail basis.

**13. Taxation on imported wine:** An excise duty cannot be charged on imported wine. Likewise, no fee on labels or brands will be charged on imported wine.

## **Conclusion**

Presently Indian wine industry is in a nascent stage, though it has kick started only from Maharashtra, much remains to be seen at the national level. The growers will have to reorient themselves for wine grapes cultivation. The Indian wine makers should learn from new world's (especially from Countries like Australia and Chile) wine makers and strictly adhere to international quality standards so that exports of

wines will be at par with their prime target. Indians will have to go generously and in celebrating manners for wine consumptions and be able to discriminate wines with other alcoholic liqueurs. *The wine in fact is a social and health drink, its consumption has to be promoted through various media campaigns and wine festivals. We hope subsequently there exists a huge scope for expansion in area and production of wine grapes in our country.*

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