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**PERFORMANCE ANALYSIS OF CHAMPHAI WINERY IN THE
POST MLPC ACT: ECONOMIC ENVIRONMENT IN MIZORAM**

**(A DESSERTATION SUBMITTED FOR THE AWARD OF THE
DEGREE OF MASTER OF PHILOSOPHY IN ECONOMICS)**

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II



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CERTIFICATE

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III DECLARATION



I, Kamminthang Hangshing, hereby declared that the subject matter of this dissertation entitled **‘Performance Analysis of Champhai Winery in the Post MLPC Act: Economic Environment in Mizoram’**, is the record of work done by me. To my best knowledge and believe the contents of the dissertation is not based on any work done by others scholars for the degree of M.Phil. or other degree. This dissertation has not been submitted by me or any other for research degree in any other University/Institutions.

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(KAMMINTHANG HANGSHING)

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INTRODUCTION

This Chapter will highlight the information about Champhai town and its wineries. Information on grapes and wines will also be discussed. Important information about the MLPC Act will also be highlighted. Further, the research significance, objectives, hypothesis and methodology will also be highlighted.

1.1 Champhai town

Champhai is a notified town city in district of Champhai, Mizoram, located in the Indo-Myanmar border which is a strategically important location. According to the 2011 Census, Champhai town has a population of 32,734 of which 16,265 were males and 16,469 were females. Champhai town has a literacy rate of 96.54%, in which 97.67% were male and 95.44% were females (2011 Census). Out of the Population, 11,199 were usually employed, 3,627 were casually employed and 12,843 were not employed.

Champhai town has a salubrious climate and a number of tourist attractions. It is also called 'The rice bowl of Mizoram' with its wide flatland cultivation. In 2011 around 19,200 quintals of rice was produced and 10,000 quintals of grape were cultivated, churning 20,000 bottles of grape wine. These two are the main agricultural products of Champhai.

1.2 Grapes

Grape means *Vitis Vinifera*, which is the most common variety; other variety includes *Vitis labrusca*, *Vitis riparia*, *Vitis rotundifolia* (mostly common in North America) and *Vitis amurensis* (common in Asia). It can be used for making Wine, Jam, Juice, Jelly, Grape seed extract, raisins, Vinegar, and grape seed oil. Grapes are a non-climacteric type of fruit, generally occurring in clusters. Grapes are of different colours, like, crimson, black, dark, blue, yellow, green, orange, and pink. Grape cultivation began around 6,000 – 8,000 years ago in Western Asia. Due to the natural occurrence of Yeast, early known domesticated Microorganisms, in its skin, it led to the discovery of Alcoholic drinks such as wine. The earliest known archaeological evidence for a dominant position of wine-making in human culture dates back from 8,000 years ago in Georgia.

Grapes has several importance and uses, it is said to prevent heart disease, *French paradox*, a phenomenon that French tend to have a lower heart disease is due to their consumption of red wine. Other uses like, prevention of molecular mechanisms in blood vessels, reducing susceptibility to vascular damage, elevate blood pressure. Even though some health authorities does not recommend the consumption of grape wine, research indicates that there are several positive health benefits, especially in the Cardiovascular system, in grape wine. Moreover, grape wine also has its religious significance, in

Christian culture, grape wine has been regarded as the blood of Jesus Christ, the redemption of sin. As such, a partial amount of grape wine has been occasionally consumed by the Christians, which is termed as Sacrament or the Lord's Supper.

1.3 Favourable Climate and Soil

Temperature, humidity and light are important for grapes. Hot and dry climate with low rainfall and humidity are suitable for grape growing. Warmer, longer growing seasons have allowed grapes to stay on the vine longer, producing fruit that results in stronger, bolder wines with higher alcohol content. The rising temperatures nowadays have allowed grape growers to keep the grape on the vine longer- which does not work 30 or 50 years ago. As the heat rises, so does the resulting wine's alcohol content. A warmer growing season or longer hang time on vine produces more sugar in the grapes. In other words, greater the grapes' sugar concentration, the higher the wine's potential alcohol level. However, if temperature shoots to high, the heat can shut down photosynthesis altogether. Because photosynthesis helps activate the genes needed to develop colour and flavor compounds in the fruit, a shutdown will wash out the grapes' colour and alter the acid and sugar contents, resulting in the loss of some flavour and aroma.

Grapes can be grown on a variety of soil ranging from gravelly sands to clay loams and shallow to very deep. The best suited soils are sandy loams that are

well drained and fairly fertile with good amount of organic matter. The presence of moderately saline and alkaline but not excessive lime is good for grape. Soil with good drainage and water-holding capacity in a pH range of 6.5- 7.5 is ideally- suited for grapes. In India, Grapes are grown on a variety of soils. Alluvial in the north, heavy black clay in Maharashtra and North Karnataka, red loam in Southern Karnataka and Tamil Nadu and very light sandy locally called 'Chalka' soils in Andhra Pradesh.

1.4 Harvesting and Yield

The heat requirement for proper ripening of grapes differs from the variety of grapes. Early- maturing varieties require about 1,600 degree-days to mature, and late varieties require at least 3, 500 degree- days. The variety grown in Mizoram i.e. Bangalore Blue, needed about 3, 562 degree-days for ripening. Grape may be termed as a pre-harvest climacteric fruit. Hence it is essential that grapes are harvested only when they are fully ripe. Over-ripening also spoils the quality of grapes. The proper stage of harvesting grape is adjudged by the development of characteristic colour of a variety and also by touching the grapes from the apical portion of the bunch. Three major colours viz. White, red and black, are found in grape. The criteria used to judge ripening differ according to the use of grapes. For making raisins and currants, harvesting at a later date is preferred, to get more sugar in grapes for

increasing the weight of dried products. For all other purposes, the ripening is adjudged on the basis of sugar.

Grapes are harvested preferably during morning and the harvested bunches are kept in shade till sorting of the damaged or over-ripened berries. Grapes are transported from the field to storage in wide-mouthed baskets lined with soft green grasses to protect them from being bruised. Peduncle should be intact with bunches.

1.5 Storage and Marketing

Grapes need to be stored properly to keep them fresh, delicious and nutritious. Also for further processing, the storage facilities should be properly maintained. The different important aspect in storing grapes are-

1. **Temperature-** Grapes can be stored at 0° C and 80-90% relative humidity for 4 weeks (Rao 1973) and for 6 weeks with potassium metabisulphite at 1g per 1 kg of grapes. Pre-cooling of grapes at 2.2-4.4°C for 6-24 hrs are essential before keeping grapes in cold storage to minimize damage of grapes.
2. **Storage and Handling-** Grapes should be kept away from other product having strong smell since they absorb odours. It must not be tightly packed together and there must be adequate air flow around the grapes.

3. Transport- In order to transport grapes to different places, it must be loaded in refrigerated or insulated containers.

The grape export from India started in the year 1991 with the initiation of economic liberalization. Total export was about 20, 646 tonne. In order to export their grape product the Grape exporter has to be register with the Agriculture & Processed Food Products Export Development Authority (APEDA). However, due to lack of transport facilities and high cost of exports, many of the grapes products were sold in the domestic market.

1.6 Processing of Grapes

In India, 1.2 million tonnes of grapes are produced (2007) out of which 78% percent of grapes are used for table purpose, 17-20% for dried raisins, 1.5% for juice and 0.5 percent for manufacturing wine.

There are three common methods in the processing of grapes-Raisins, Wine making and Juice making.

a) Raisins- It is prepared from the sound dried grapes. By using suitable ingredients, different forms of raisins: marketable raisins with or without coating was processed. India in 2007 produced a range of about 55,000 to 65,000 tonnes of raisins.

b) Wine making- The clean and fresh grapes, which are not overripe are selected for making wines. It is fermented in the presence of yeast,

which converts the berries' sugar into alcohol and carbon dioxide. The methods of preparation of wine from high-acid "Bangalore Blue" grapes are as under-

Grapes

↓ Cleaning, sulphating and crushing
 Amelioration with sugar

Must

↓ Inoculate with *Sch. Pombe* (fission yeast)
 Fermentation (3-4 days); centrifuge

Partially fermented juice

↓ Inoculate with *Saccharomyces cerevisiae* (top-cropping yeast)

Fermented juice

↓ Raking and clarification

Wine

Source: R.M. Pandey and S.N. Pandey "*The Grape in India*".

c). Juice Making- Grape juice, coloured and white, may be prepared from grapes having sweet taste and pleasant lasting aroma. The juice is extracted from crushed grapes by means of basket press. It is again filtered for some time at a low temperature, so that the cream of tartar may settle down. The clear juice is again bottled and pasteurized for different purposes. In the juice

of 'Bangalore Blue' grapes pectolytic enzymes have to be added for extraction and clarification.

1.7 Grape Cultivation in India

Grape was believed to be first introduced in India by invaders from Iran and Afghanistan in the 1300 AD. India is among the first ten countries in the world in the production of grape. The major producers of grape are Italy, France, Spain, USA, Turkey, China and Argentina. In India grape is cultivated in different region:

- a) Sub-Tropical Region: This region extends to the north-western plains corresponding to 28° and 32° latitude including Delhi, Meerut district of Uttar Pradesh, Hissar and Jind District in Haryana, Bhatinda, Farozpur, Gurdaspur and Ludhiana districts of Punjab. Vines undergo dormancy and bud break starts in the first week of March while the rains start in the first week of June, and therefore, one 90-95 days are available from the initiation of growth to harvest. Consequently, 'Perlette' is the only early ripening type cultivated in this region. Rain is harmful and this damage is a problem with Thompson Seedless in this area. Single pruning and a single harvest is the accepted practice here.
- b) Hot Tropical Region: This region covers Nashik, Sangli, Solapur, Pune, Satara, Latur and Osmanabad regions of Maharashtra; Hyderabad, Ranga Reddy, Mahbubnagar, Anantapur and Medak districts of Andhra

Pradesh; and Bijapur, Bagalkot, Belgaum, Gulberga districts of northern Karnataka lying between 15° and 20°N latitude. This is the main viticulture area accounting for 70 percent of the region under grapes in the country. Vines do not undergo dormancy and double pruning and a single harvest is the general practice in this region. Maximum and minimum temperature is 42°C and 8°C, respectively. The main problems in this region are soil type and water salinity and drought. Berry growth is impaired and in some locations pink blush sometimes develops on green berries due to temperatures that drop to a low of 8°C. Thompson seedless and its clones (Tas-A-Ganesh, Sonaka), Anab-e-Shahi, Sharad Seedless and Flame Seedless are the types of grapes grown in this region.

1.8 Grapes Cultivation in Mizoram

Grape cultivation in Mizoram has been successfully taken up by the Horticulture Department, especially at Champhai District. In Mizoram, ‘Bangalore Blue’ (*Vitis labrusca*) is the most common variety of grapes cultivated. This variety is suitable for ‘Red Wine’ (Port Wine). The grape growers in Mizoram has witness a great success in the past few years, which led to the setting up of two wineries in Champhai District viz. The Champhai Winery and Hnahlan Winery, both the wineries in the past few years have been performing very well earning a huge amount of income. Within a short span of

time, more than 3 lakhs litres of grape wine have so far been produced from the two wineries and hence giving them a huge income.

1.9 Winery in India

Winery in India has been showing a steady progress over the years. The industry is expected to grow at an annual rate of 27%. The wine market in India is basically dominated by the domestically produced wine while the consumption of wines imported from other countries is anticipated to rise at a CAGR (Compound annual growth rate) of around 33%, which is much above the overall growth of the industry. Some of the Wineries in India are shown in Table 1.

Table 1: *Wineries in India*

Winery	Location	W.e.f	Capacity in KiloLtr	Key Brand
Grover Vineyards	Bangalore	1992	500	Grover
Hampi Heritage Winery	Bijapur	2006		Kinvah
Pampasar Distillery Ltd	Bangalore		1000	Golconda ruby
Le Meredien Distillery & Winery	Goa			Donna Maria
Naveen Distillery	Goa	-		Vinho de Goa
Nita Industries	Goa	-		Port No 7
Oceanking Distilleries	Goa - Mapusa	-		

Table 1: Wineries in India (Contd.)

Winery	Location	W.e.f	Capacity in KiloLtr	Key Brand
Pinsons Wine Industries	Goa	-		Pinsons
Springfields (India) Distilleries	Goa	2003		San Andre etc
Vinicola	Goa - Margao	1975		Vinicola
Vinbros & Co	Goa (Margao) & Pondicherry	2005		Globus, Vinho de Goa
Associated Wines Pvt Ltd	MHR – Baramati	2005	100	
Baramati Grape Industries Ltd	MHR – Baramati	1975		Bosca
Malhar Winery Pvt Ltd	MHR – Baramati	2005	110	Chateau d’Ori
Pyramid Wines Pvt. Ltd.	MHR – Baramati	2004	100	Yellowstone
Chateau d’Ori	MHR - Nashik	2007	200	Chateau D’Ori
Chaya Winery Pvt Ltd	MHR - Nashik	2005	35	
Flamingo Wines	MHR - Nashik	2004	200	30th Lat
Girana Valley Vineyards	MHR - Nashik	2001	500	
India Food Company	MHR - Nashik	2008	100	Vin & Vouloir

Source: gryphonbrands.com

La Reserve, Chateau Indage, Grover, Sula, Heritage Port, Vinsura Wines, Nine hills, Chateau d’Ori are some of the famous Indian brands in the wine segment. The prospects of the Indian wine industry are very positive and the

consumption of wine has been expected in the next few years. As of the year 2008-2009, growth was about 25% to 30%. But there was a decline in the sales the very next year. Despite this, there is an anticipation of the increase in the sales in the wine industry in India. At the same time, the tax burden is both high for local wine producers and importers. However, few Indian states such as Maharashtra, Karnataka and Himachal Pradesh have taken steps to liberalize the excise regime, reducing excise duties to encourage the growth of the wine industry. Cities such as Mumbai, Delhi, Bangalore, Goa record the highest consumption of wine in India which accounts to 80%.

The Indian wine market is dominated by the domestic wine companies, as the consumption of the domestically manufactured wine is increasing. The domestic market size is approximately amounting to 1 million cases per year and is growing at about 35 per cent. Chateau Indage (Indage Group) is the leader in the market with over 35 per cent share in the industry. The Indage Group is followed by Sula Wines with 15 per cent and Grover Vineyards with 8 per cent (2015).

1.10 Winery in Mizoram

For the past decades, grape was said to be planted in Champhai. Blue *Vitis Lebruska* Variety of grapes is the variety which was grown in Champhai. The grapes produced in Champhai have been usually processed for Grape wine. Due to the Mizoram Liquor Total Prohibition (MLTP) Act (1995), which

earlier prevented the large scale commercialization of Wine making from grapes in the state, grape production has been quite low before 2007. However, with the amendment of the Act in 2007, which relaxed the prohibition of Wine in the state, the grapes production began to grow.

After the ammendation of the MLTP Act in 2007, “Mizoram Excise and Narcotic (Wine) Rules” 2018, implemented which started functioning on 9, April, 2008. Based on this rule, the excise department of Mizoram in 2008 issued licence for establishing winery to Champhai and Hnahlan Grape Growers’ Society. Thus, The Champhai Winery was set up in 2007 with the trade licence and registration number of MSR 94 of 14/11/2007. Hnahlan was also set up in 2007 with the registration number of MSR 94 of 14/11/2007. Thus, these two wineries are the manufacturer of a unique wine called ‘Zawlaidi’. Both Champhai and Hnahlan Grape Growers’ Society borrowed money from the state government under the programme of Mizoram Intodelh Project (MIP) of Rs 84 lakh each and get financial load of Rs 140 lakhs each from Mizoram Rural Bank for their initial set up of the Winery. (Laltlankima Fanai, Secretary, Hnahlan GGA)

The Winery functions under the Excise and Narcotic Department, Government of Mizoram, and the wine content was 14 per cent alcohol and other pure grape juice which is cultivated under the modern technology by the horticulture department. In Champhai Area around 500 farmers were engaged

in the cultivation of grape growing out of which 164 (May 2017) were registered on the Society. Of all the grape growers around 300 were now presently active. The Champhai Grape Growers Association is a cluster of different farmers from different 10 villages' viz. Ngur, Khawbung, Champhai, Zote, Hmunhmeltha, Tlangsam, Zotlang, Ruantlang, Mualkawi and Khuangleng. In recent years the sales of wine hits around 2 lakh, accounting to revenue of around 50 lakh rupee. The variety of wine produced were Zawlaidi (Rs. 105/bottle), Zowine (Rs.95/bottle), Champwine (Rs. 49 /bottle) and Concentrated Wine (Rs. 65/litre).

1.11 The MLPC Act

The Government of Mizoram had been implementing the MLTP Act, 1995 for more than a decade though without much success story while foregoing all the revenue which could have been accrued to the State Government. By the end of the Annual Fiscal Year of 2014, with the Mizoram Liquor Total Prohibition (MLTP) Act (1995) being replaced by the Mizoram Liquor Prohibition and Control (MLPC) Act (2014), the new Act MLPC was passed on 10th July, 2014, and was enforced on 15th January 2015, it allows the opening of Wines shop and buying of wine with certain degree of restrictions. It prohibit and control the production, manufacture, possession, transport, import, export, purchase, sale and consumption of intoxicating liquor and provide for the imposition of excise duty thereon in the State of Mizoram and for matters

connected therewith. The most important difference between the MLPC and MLTP Act are:

In the MLTP Act Chapter III (7), Prohibition and Penalties:

Prohibition of manufacture, traffic in, and consumption etc. of liquors: No person shall-

- (a) (i) Transport, import, export, or possess liquor;
 - (ii) Sell or buy liquor;
 - (iii) Manufacture liquor;
 - (iv) Use or keep for use any material, utensil, implement or apparatus whatsoever for manufacture of liquor; and
 - (v) Construct any distillery or brewery.
- (b) Consume liquor except on a prescription of a registered medical practitioner, or on a permit granted under the provisions of this Act or the rules.

In the MLPC Act Chapter VIII (42), Prohibition, Offences and Penalties:

- (1) No person, without licence, permit or pass under the Act, shall–
 - (a) transport, import, export, or possess liquor;
 - (b) Sell or buy liquor;

- (c) Manufacture liquor;
 - (d) Use or keep for use any material, utensil, implement or apparatus whatsoever for manufacture of liquor; and
 - (e) Construct any distillery, brewery, winery, bottling plant and bonded warehouse;
- (2) No person shall consume liquor except on a permit granted under the provisions of this Act or the rules made there under, as the case may be.
 - (3) No person shall consume liquor in public place.
 - (4) No person shall make nuisance under the influence of liquor.
 - (5) No person shall drive any motor vehicle while under the influence of liquor.

The MLTP Act does not allow selling, buying, manufacturing, transporting, possessing of liquor. And one can only consume liquor when there is prescription of a registered medical practitioner, or on a permit granted under the provisions of this Act or the rules. However, in the MLPC Act, one can obtain license to sell, buy, manufacture, transport, possess of liquor given some terms and conditions of its usage. Therefore there is a huge difference in the Market of Liquor before and after the MLPC Act 2014.

Under the MLPC Rules, 2014 three Bonded Warehouse Licenses were issued and seventy three Vendor Licenses were issued. During the financial year 2015-16 up to an amount of 60.60 crore was collected as Excise Duties from the sales of liquor against the Budget Estimate of 35.68 crore. Again during 2016-17 up to 31.12.2016, Revenue amounting to 54.29 crore had already been collected by the Excise & Narcotics Department against their annual target of 43.00 crore. The increase in revenue collection is obviously due to sale of liquor under the MLPC Act, 2014.

However, the opening of wine shop and selling of wine in Mizoram was believed to have different affects in the performance of Champhai Winery. This may be further analyzed in the other chapters.

1.12 Significance of the Study

Wine/Liquor Prohibition and Control has been an issue for over decades. Even the public opinion on this issue has been quite a debate, some may favour it as it becomes one of the main sources of revenue for the government, while some may disapprove it as it was against Christianity and also harms the society.

However, the passing of Mizoram Liquor Prohibition and Control (MLPC) Act (2014) has played quite a significant role in the sales of the locally produced wine. The sales of Liquor, produce outside Mizoram, has boosted. This resulted in the decline of the domestically produced Wine/Liquor. Many of the farmers in Hnahlan have no choice but to stop growing grapes due to the lack

of markets. However, the grape growers in Champhai were lucky enough that the Champhai Grape Growers Society found an outside market viz. Radiant Manufacturer Limited, with a lesser profit than the domestic market.

The study is therefore confined to the performance of Champhai Winery in the post MLPC Act. It gives special attention to the Production and Revenue of Champhai Winery in the Pre and Post MLPC Act.

1.13 Objectives of the Study

1. To study the trends in the production and sales of Champhai Winery product.
2. To analyze the change in the production and revenue of wine from Champhai Winery in the Pre and Post MLPC Act.

1.14 Hypothesis

The revenue from grape wine and its products in Champhai Winery has significantly decreased after the implementation of MLPC Act.

1.15 Research Methodology

This study attempts to analyze the performance of Champhai winery in the post MLPC Act by analyzing its Production and Revenue data.

This study is based on secondary data. The secondary data was collected from the Champhai Grape Growers Society (CGGS). And through personal

discussion with the Staff in the Winery, several other information were gathered.

2.1 INTRODUCTION

Several books, booklet, journals and reports are gathered for review of literature and to make the research more interesting and informative.

2.2 REVIEWED LITERATURES

Wallnöfer(1885) wrote his idea on liquor prohibition. Prohibition leaves to every man the due exercise of his personal freedom: it prohibits only the manufacture of drunkards, paupers, tramps, and criminals. Prohibition of the use of alcoholic liquors has never succeeded- never can succeed; for it is a tyranny from which every independent mind revolts. If a man will play the fool with his brains and his means, society cannot stop him; but it ought not through its licensed agents to facilitate the process. To stop the sale of alcoholic liquors for consumption on the premises would inconvenience nobody.

Winkler (1949) in his article state that, Wine is the beverage resulting from the partial or complete fermentation of the juice of sound, ripe grapes under controlled conditions. Man, no doubt, ate the fruit of the vine long before he became acquainted with fermentation and its possibilities. Yet, the records of the early spread in grape production show that it was largely of varieties adapted for wine and not for eating fresh. This would indicate that man has long been familiar with wine. The great variety of grapes used, differences in

the environmental conditions under which the grapes are grown, differences in the degree of completeness of the fermentation, and differences in the cellar treatment has resulted in the production of many kinds of wines in various parts of the world.

Khandunja et.al.(1971) in their article wrote about the importance of Grape Industry in India. They stated that, due to the prevailing belief that the tropical climate of India is not ideally suited to grape culture, grapes have been relegated to the background and no serious attempt were made to explore the commercial possibilities. However, attempts made over the past years suggested that with intelligent and assiduous care grapes can be grown with economic success in limited areas of our country. Furthermore, the looking at the harvesting season in different parts of India viz. March to May and August to October in Tamil Nadu, February to March in Andhra Pradesh and Maharashtra, which is in the South India and in the plains of North India it matures in May and June. This can be an advantage for an Indian grape growers as the North temperate zone, where grapes are grown to large extend, harvest their grapes usually in August and September, which gives India a decided advantage in the delivery of grapes to foreign markets at times when supplies from other countries are absent. Even though, attempts were made by the grapes industry in the North and South India, the grape industry were still

lagging behind, and it needs special attention to grow a better quality and to export grapes in foreign countries.

Pandey et.al. (1978) wrote about the Grape in India. The Grape cultivation in India, its history and origin, the scientific methods used for grape planting and the management of vineyard were also highlighted. They also mentioned the special problems faced by the farmers in growing grapes and the diseases and pests which always alter the growth. Further, they it highlighted the different needs for grapes for harvesting and yield, and the storage facilities, marketing and other used were also highlighted in the book.

A booklet of Tribal Research Institute (1983) examined that Zu (Wine/Liquor) plays an important role in the early Mizo society and had been drunk in all important occasion. Without it, no Ceremonial and religious function could not be performed. Traditionally, Zu (Wine/Liquor) was made from fermented rice, millets, maize, etc. mixed with yeast. It was occasionally drunk in festive occasion like Chapchar Kut, Mim Kut, Pawl Kut, Annual sacrificial days and successful hunting. Different types of Wine/Liquor viz. Zufang, Rakzu, Zupui, were prepared, and was drunk on different occasion accordingly. However, after the entry of Christianity in Mizoram, Liquor/Wine is considered as a social evil as it was against the religious practices and doctrines. Therefore, several prohibitions act came to exist.

Lalmuanzuala (1983) wrote about the significance of Wine/Liquor in the early life of Mizo Society. In the early days, Wine/Liquor was a mode of communication, a token of respect, and there were no youth who over drunk Wine/Liquor in the early days, it was regarded as a shame unless it was over drunk by the old men. After the entry of Christianity, as the Christian viewed Wine/Liquor as a substance of malevolent life, thus, they started to preach the evil of Wine/Liquor. The earliest mass campaign on Wine/Liquor in Mizoram dates back to 1934, at Sethlun Conference, where Wine/Liquor was publicly announced as a source of evil and needs a prohibition. However, he further wrote, even though, a prohibition act may be passed against Wine/Liquor, it is obvious from the past experience that, Wine/Liquor will never leave the Mizo Society, it is like stepping on a spring, therefore, a laws which will be more helpful and can be easily followed by the people is needed.

Palaniappan (1989), in his research talks about the effect and several changes that happen due to prohibition of drink (Liquor) in Tamil Nadu. He highlighted that eventhough prohibition was enforced by the excise department in at first; it was later taken up by the Police department. The enforcement was not perfect, the dishonesty and inefficiency gave loopholes to the illicit distillers, which led to illicit distillation of arrack and toddy. However, the on the other side the chief benefit of Prohibition was the reduction of social crime, and the prohibition was followed by several social initiatives from the government.

Several initiatives for the social upliftment like firka (revenue circles) development, cottage industries, adult education and village uplift, in the rural areas help in the success of Prohibition to some extent in Tamil Nadu. Prior to the introduction of Prohibition in 1938-39, drinking in the rural areas among the male adult population was as high as 25 to 30 percent, however, this drop to 3 to 4 percent in 1964. Even Women were habituated to drinking, but after the introduction of Prohibition, it became a thing of the past. The cause for the reduction was the fear of the law and partly the realisation of the evils of drinking. In fact, Prohibition was not merely a negative programme of abolishing the drink evil but a positive programme of reconstruction of rural life in Tamil Nadu.

Levine et.al.(1991), in their paper wrote about the Alcohol prohibition in USA and the lessons which can be learnt, for the drug policy in USA. Prohibition becomes a public debate in the 1910's to 1930's, in fact, it was said that the World War I had provided the necessary context for rallying popular support to pass prohibition, while, the Great Depression provided the necessary context for repeal. The prohibition of Alcohol lessen its availability there is always a substitute for it, it was said that, the availability of drugs, which are smaller and easily supplied, paved its way in the society with the prohibition of Alcohol. There are number of important lessons about the future drug policy in USA which may be learned from the post repeal alcohol control system.

Lalhmingliana (1992) wrote that Wine/liquor is a global issue now a day. Even in Mizoram, many of the sufferings and atrocities were caused due to misuse of wine/liquor. It frequently caused social problems and even the producers did not hide the fact that it is the root of many problems. With different laws and rules, Wine/liquor sales and product has been prohibited, even those vendors who sell it has to obtain license from the authority. It is a business that can cause harm to the public/society. From the lawmakers perspective we can understand that it is a product that can harm the society.

A booklet of Mizoram Excise & Narcotics Department (1995), in which the Mizoram Liquor Total Prohibition (MLTP) Act, 1995, and its Amendments was written. It provides information for total prohibition of import, transport, manufacture, possession, sale and consumption of liquor in the state of Mizoram.

Dheeraja (1996) in his research wrote about the impact of prohibition on the habitual alcoholics and their coping strategies, in which the study was done in three(3) village of Anantapur District, Andhra Pradesh. Prohibition was introduced in India several times, in Mahatma Gandhi Era, 1920, prohibition was adopted as an essential part, and comprehensive prohibition laws were enacted in 1937 by various governments of different provinces. But time and again prohibition failed due to several reasons. Each of the State has played the game of 'introduce and lift' of prohibition. The eleven strategies derive from

the study for coping alcoholism are control, optimism, escape, welfare, action, interpersonal, fatalism, perseverance, intellectual denial, restrain and drawing strength from adversity.

Chuaauthuama(2000) in his article wrote about how Wine/Liquor plays a role in the Mizo Society. Even though, some may consider Wine/Liquor as an element which determine the early Mizo life in the earlier Mizo Society, he further addressed that, Wine/Liquor cannot be part of the element, the most important food of the earlier Mizo Society is rice, and nonedrank Wine/Liquor for food. Even thought, there may be some factor like in religious, festival, which involves the use of Wine/Liquor, the present Mizo Society is a Christian Society, a religious which regards Wine/Liquor as a sin. Therefore, there may be some practices which can be Christianized; however, Wine/Liquor will never add to the option, as such, Wine/Liquor must be prohibited.

Chundawat et.al.(2002), wrote that grape is one of the oldest fruits cultivated by man. However, its commercial cultivation is only about 50 years old. Approximately 87 per cent of the produce is consumed fresh, while 10 per cent is dried for raisins, and 2 per cent is processed for juice and 1 per cent for wine. It is considered to be one of the most remunerative enterprises of the present time and therefore, becoming very popular with the farmers of the country. Grape is basically a temperate crop requiring long warm to hot dry summers and cool winters. However, in India it is being cultivated in three

distinct climatic conditions mainly subtropical, hot tropical and mild tropical climatic conditions. Grapes are grown in a variety of soils but best soils are sandy loams that are well drained and fairly fertile with a good amount of organic matter. However, such situation is hardly available in the country suffer from the problems of salinity, sodicity and excess level of free Ca and Na. This problem is, however, overcome or managed by using resistant rootstock. For planting of grapes trenches of pits 1 m wide and 75 cm deep are made and filled with FYM, leaf mould, bone meal (1kg), SSP (1 kg) and allowed to settle by watering. Then cuttings are planted in these trenches by opening a small pit. The soil around the planted cutting is drenched with a solution of chloropyriphos. October is the ideal time of planting unrooted cutting directly in the field. Rooted cuttings are planted in January- February. When rooted plants are planted, budding or grafting is done in July- August, either chip budding or wedge grafting is employed. Wedge grafting is better.

Ramanan (2006) in his paper wrote about the cultivation practices and problems of grape. Grape is cultivated over an area of 60,000 hectares with an annual production of 1.2 million tonnes in India. Although, the return per hectare is very high, grape cultivation does not expand up to expectation due to the high initial cost of establishing the vineyards and high recurring cost of production. The risk of losing the grapes due to unforeseen changes in weather is also very high. There is a high need to diversify the uses of grapes in India.

Diversification of the uses as wine/juice and export of table grapes can ease the marketing problems. Maintenance of quality of table grapes by crop regulation is the priority consideration to increase exports. For the survival of the grape industry in India, the produce should be qualitative and cost competitive. Future efforts are to be concentrated on this direction.

Sharma et.al. wrote about the production of Raisin in India. India accounts for 1.2 million tonnes of grapes production making a share of 1.83 percent of the World production and 3 percent of the total fruit production in the Country. 78% of grape production is used for table purpose, around 17-20 percent for dried raisin, 1.5 percent for juice and 0.5 percent for wine making. The processed product of grapes viz. Wine; Raisins and grape juice are the most popular products from the grape all over the world.

Seikh et.al.(2009) wrote about the production and processing of grape. In India, grape was cultivated on an area of 1,50,000 acres and producing 12,00,000 tonnes of fruits out of which 70% are sold as table grape and from remaining 30% fruits raisins are prepared. They suggested that instead of concentrating in producing raisins, farmers should focus on production of export quality grape. Further, suggestions like starting a wine park by cultivation 200 acres of grape, removing excise on grape wine and wine variety suitable for the region must be explored, were made. In recent days, Indians have started appreciating wine. The upper class Indian is convinced

that good food has to be accompanied by wine. Wine consumption has doubled in the last 2-3 years; the wine-pubs like beer-pubs have started appearing in Indian metropolitan cities. Indian wine lovers are realising that a good wine can very well match with deshi Indian food. As the climatic conditions in India are suitable for growing a number of different varieties of wine grapes, best Indian wines can be made from a blend of grape varieties. By addition of cardamom, cloves, and other spices medicated wines or vermouths can be prepared to popularize wine culture in India so that they can be better accepted. Therefore, there is a wide scope for successfully producing grape wine in India.

Vanlalruata (2010) in his article wrote about the role of the state in levying excise and tax in the locally produced wine i.e. Zawlaidi. Further he talks about the mind-set of the people and the government towards the locally produced wine. Many of the advanced countries regard wine as a part of food items, however, in Mizoram it is regarded as a social evil. Therefore, problems of prohibition pressure from the people and heavy excise and tax in the local wine were the main issues. To promote the sales the society as well as the state has to change their mind-set. Providing more subsidy and decreasing the excise and tax duties must be done to provide markets for Grape wine.

A booklet of Mizoram Excise & Narcotics Department (2014), in which the Mizoram Liquor (Prohibition and Control) Act, 2014, was written provides

information to prohibit and control the production, manufacture, possession, transport, import, export, purchase, sale and consumption of intoxicating liquor and to provide for the imposition of excise duty thereon in the State of Mizoram and for matters connected therewith.

Gaidos (2014) wrote about the transforming wine industry due to the climate change. In his article he talks about the rising global temperature which favours the grape growers to grow their grapes into a larger scale and more productive and better quality. In some areas of France, this climate change is referred to as *le bon probleme*, or the good problem. This is due to the fact that the warmer growing seasons or longer hang time on the vine produces more sugar in the grapes, at the same time, the greater the grapes' sugar concentration, the higher the wine's potential alcohol level. However, if the temperature shoots too high, the heat can shut down photosynthesis altogether. Because photosynthesis helps activate the genes needed to develop colour and flavour compounds in the fruit, a shutdown will wash out the grapes' colour and alter the acid and sugar content, resulting in the loss of some flavour and aroma. The truth is now that the Earth's climate is changing much faster than the wine business, and it is advantageous for the wine industry to be proactive in assessing the impacts.

Halliday (2015) states that, the effect of lifting prohibition (MLTP) began to manifest the declining of wine sales. Following the lifting of Prohibition

(MLTP, which was now turned into MLPC Act), the vineyard growers' societies of Mizoram, who also own the twin wineries at Champhai and Hnahlan, have suffered a huge hit. The availability of imported wine becomes their main problem, as imported wine was more favoured by the drinkers. Even though the winery has increased their production to over 2 Lakh bottles, during 2014-15, more than 80,000 remained unsold.

The Press trust of India (2015) wrote about the deal sign by the Champhai Grape Growers Society (CGGS) with Radiant Manufacturers Limited in Guwahati. It further states that the deal would provide a market for the Champhai Winery, however, Thanseia, General Secretary, CGGS, the deal would helped them in selling of the wine in which many the Local markets has shrink due to the new Liquor Act passed by the State Government.

The Hindustan Times (April, 2016) wrote about the banning of Liquor in Bihar. It further wrote that even though several states imposed a prohibition on liquor it is quite not must effective as liquor can be found easily in those states. In fact, it is believed that prohibition gave rise to bootlegging, corruption and crime. Also, the banning of liquor is also a loss of huge revenue for the states.

A booklet of Synod Social Front (2017) examined about the impact of Liquor/Wine in the Mizo Society. Looking at different records it is obvious that Liquor/Wine has created many social problems in the society. Even by looking at the Hospital records of different hospitals in Aizawl, the death

related to Liquor/wine in 2013 is 16.32%, 2014 is 9.86%, 2015 is 17.19% and 2016 is 23.38% respectively. Also, the different criminal cases registered related to Liquor/Wine in 2014 is 2995, 2015 is 2514 and 2016 is 1833 respectively. The introduction of Mizoram Liquor Prohibition and Control Act 2014 and its launch in January 15, 2015 has greatly affected the economic environment in Mizoram. Therefore, the Liquor/Wine and its prohibition became a constant debate in different political and academic Platform in Mizoram.

3.1 INTRODUCTION

This Chapter will highlight important information about Champhai Winery and the Champhai Grape Grower's Society. It will also analyse the performance of Champhai Winery, giving significance to the pre and post MLPC Act.

3.2 Performance of Champhai Winery in the post MLPC Act: An Analysis

3.2.1 Introduction

Champhai Winery being one of the first winery established in the North-East India, it plays a significant role in promoting grapes in the Area. Many farmers who, in the past, attached to Jhum cultivation has shifted to Viticulture in and around the area of Champhai. As a result commercial production of Champhai Winery started in the year 2010, even though the cultivation of Grapes started two to three years back, it needs a least a year or two to be matured. Since after the commercialization of wine in the Winery began, the production of grapes has also risen. Table 2 shows the data relating to the production and revenue of the 90 randomly selected farmers during 2011-2017.

Table 2- Production and Revenue of the sample farmers during 2011-2017.

Year	Production (In Kg)	Average prod.(In kg)	Rate (in Rs)	Revenue collected by 90 farmers (in Rs)	Average revenue of 90 farmers (in Rs)
2011	35286.95	392.08	33	11,64,472	12,938.58
2012	87349.5	970.55	30	26,20,583	29,117.59
2013	44428.16	493.65	30	14,16,754	15,741.71
2014	109075.45	1211.95	40	43,63,017	48,477.97
2015	110672.2	1229.69	30	33,20,256	36,891.73
2016	131810.85	1464.57	30	39,54,373	43,937.48
2017	89154.47	990.61	30	26,74,715	29,719.06

Source: Based on the data provided by Champhai Winery.

However, with the introduction of MLPC Act in January 2015, changes can be found in the Winery market and its revenue. We will further discuss how the Act changes the economic environment.

3.2.2 Profile of Champhai Winery: An Overview

3.2.2(a) About the Society

Champhai Grape Growers Society is a registered society under registration no. MSR95' of 14-11-2007, under the Mizoram Societies Act, 2005. There are more than 800 families growing grapes in the region of which in latest data 147 families are affiliated to the society. The society started its first commercial production of wine in the year 2010 with ten(10) branches in the society. The grape variety grown in and around the area is *Vitis Labrussca* in and around Champhai in Mizoram.

The Society manages to get funds for the winery through different sources.

Sources like –

- The Annual membership fee which was paid by every members of the society.
- Self Help Group (SHG) Contribution (The SHG's availed Loan from Mizoram Rural Bank under National Scheduled Tribes Finance and Development Corporation (NSTFDC) and contribute for the project).
- Grant/Soft Loan from the Government.
- Sales profit.

Presently, there are four (4) Administrative and technical Staffs and 15 trained workers. Seasonally 40-60 women are engaged in the factory.

3.2.2(b) About the Winery

Champhai Winery is one of the first wineries established in the entire North East India (Mizoram is the only wine producing state in North East India except Sikkim). The Winery started with a loan of 140 lakh from the Rural Bank through the Self-help group in 2007 and 84 lakh from the State government under the programme of Mizoram Intodelh Project (MIP). The installed annual capacity of the winery is 180 tons. The plant and machinery used in the winery are of semi-automatic and it has a daily production capacity of around 600 cases of wine. The winery manufacture fortified red port wine in

the brand name Zawlaidi (750ml) and Zowine (650ml), Champwine (325ml) and Concentrated wine exported outside Mizoram.

3.2.2(c) Marketing

The marketing of wine is the most important part in the functioning of the Winery. Marketing of wine usually takes place in two different ways- Local Market (inside Mizoram) and Outside Market.

Local Market- Wine was sold in three major district of Mizoram viz. Aizawl, Lunglei and Champhai. 30% of the populations in these districts are the targeted buyers. Consumption of wine is recurring in nature and hence the proposed sales can be project by around 95,000 bottles per year.

Outside Market- In 26 January, 2015, the Champhai Grape Growers society signed a deal with the Radiant manufacturers Limited in which the Company agreed to buy 3.6 litres of concentrated wine annually. The Radiant Manufacturers Limited has for close to a decade been making and selling the *Vihno Porto* port wine brand through the North-East region and Bhutan. After the signing of the deal concentrated wine has been supplied to the Company till date. However, the profit from this concentrated wine was far lesser then the normal processed bottles of wine produced by the winery.

3.3 Performance of Champhai Winery: An Analysis

As mentioned in the objective and methodology, the main aim of this research is to analyze the performance of Champhai Winery. Analyzing the Winery data and dividing it into different fragments so that we can find out the trend in production and sales revenue in the pre and post MLPC Act.

Thus, following the objectives and the hypothesis we will analyze the data of Champhai Winery expecting findings which relate to research objective.

3.3(a) Total Production and sales of the Winery

Before dividing the data into different fragments, the production and sales of Champhai Winery is highlighted in Table 3.

Table 3: *Total Production and Sales of Champhai Winery during 2010- 2017.*

Year	Total Production of Wine	Amount
2010-2011	1. Zawlaidi- 7523 cases (90276 bottles)	1. Rs 1,53,01,782.00 (@ Rs 169.5 per bottle)
2011-2012	1. Zawlaidi- 1509 cases (18108 bottles) 785 cases (9420 bottles) 724 cases (8688 bottles)	1. Rs 25,08,930.00 Rs 15,96,690 (@ Rs 169.5 per bottle) Rs 9,12,240 (@ Rs 105 per bottle)
2012-2013	1. Zawlaidi- 9636 cases (115632 bottles) 2. Zo Wine- 3622 cases (43464 bottles)	1. Rs 1,21,41,360.00 (@Rs 105 per bottle) 2. Rs 41,29,080.00 (@ Rs 95 per bottle)
2013-2014	1. Zawlaidi- 5036 cases (60432 bottles) 2. Zo Wine - 20463 cases (245556 bottles)	1. Rs 63,45,360.00 (@Rs 105 per bottle) 2. Rs 2,33,27,820.00 (@ Rs 95 per bottle)
2014-2015	1. Zawlaidi- 8793 cases (105516 bottles) 2. Zo Wine- 4339 cases (52068 bot.)	1. Rs 1,10,79,180.00 (@ Rs 105 per bottle) 2. Rs 49,46,460.00 (@ Rs 95 per bot.)

Table 3(Contd.): Total Production and Sales of Champhai Winery during 2010- 2017.

Year	Total Production of Wine	Amount
2015-2016	1. Zawlaidi- 2267 cases (27204 bottles)	1. Rs 28,56,420.00 (@ Rs 105 per bottle)
	2. Zo Wine - 2468 cases (29616 bottles)	2. Rs 28,13,520.00 (@ Rs 95 per bottle)
	3. Champwine- 2944 cases (35328 bottles)	3. Rs 17,17,824.00 (@ Rs 48.625 per bottle)
	4. Concentrated wine- 64000 ltrs	4. 39,20,000.00 (16000 ltrs @ Rs 50 per litre & 48000 ltrs @ Rs 65 per litre)
2016-2017	1. Zawlaidi- 1205 cases (14460 bottles)	1. Rs 15,18,300.00 (@ Rs 105 per bottle)
	2. Zowine- 164 cases (1986 bottles)	2. Rs 1,88,670.00 (@ Rs 95 per bottle)
	3. Champwine- 2737 cases (54740 bottles)	3. Rs 26,61,732.50 (@ Rs 48.625 per bottle)
	4. Concentrated wine- 93000 ltrs	4. Rs 60,45,000.00 (@ 65 per litre)

Source: Champhai Winery data

Table 3 will be further analyzed to complete the objectives. Moreover, it is to be noted that most of the sales of wine excluding Concentrated Wine, takes place in the Local Market ie. Inside Mizoram, and the entire price mentioned are inclusive of all taxes.

3.3(b) Total Grape crushed in Champhai Winery

Presently, about 145 farmers supply grapes in the Champhai Winery for further processing. The average production of the farmers was highlighted in the above Table 2. After collecting the grapes, it was crushed for processing into wine. The Grape crushed in between 2010 to 2017 is shown in Table 4.

Table 4: *Total grape crushed in Champhai Winery (2010 to 2017).*

Year	Grape crushed (in quintal)
2010-2011	918
2011-2012	1648
2012- 2013	1200
2013- 2014	756
2014- 2015	1450
2015-2016	1682
2016-2017	1566

Source- Champhai Winery data.

In 2010 the commercial winery production began. The annual grape crush has risen, however in 2012-13 due to natural calamities, like heavy rainfall, strong wind etc. the grape crushed has fallen below 1000 quintal in 2013-14. However, it rose again in the following years. The data was further analysed and the average grape crushed in the pre and post MLPC Act has been highlighted in Table 5.

Table 5: Average grape crushed in the pre and post MLPC Act in Champhai Winery.

Period	Average Grape crushed (in quintal)
Pre- MLPC Act (2010-14)	1194.4
Post- MLPC Act (2015-17)	1624

From Table 5, it is obvious that the average grape crush has not fallen but increased after the MLPC Act, hence, the Winery production will also increase.

3.3 (c) Production of Zawlaidi

Zawlaidi is the first wine produced by Champhai Winery. The wine is packed with glass bottle and one bottle contains 750ml and cost Rs 165.5 per bottle initially. However, the price was soon dropped to Rs 105 per bottle.

The production and sales of Zawlaidi is shown in the Table 6.

Table 6: Production and Sales of Zawlaidi(2010 to 2017) in Champhai winery.

Year	Total Production of Zawlaidi	Revenue collected (in Rs.)
2010-2011	7523 cases (90276 bottles)	1,53,01,782.00 (@169.5 per bottle)
2011-2012	1509 cases (18108 bottles) 785 cases (9420 bottles) 724 cases (8688 bottles)	25,08,930.00 15,96,690 (@169.5 per bottle) 9,12,240 (@105 per bottle)
2012- 2013	9636 cases (115632 bottles)	1,21,41,360.00 (@105 per bottle)

Table 6 (Contd.): Production and Sales of Zawलाई(2010 to 2017) in Champhai winery.

Year	Total Production of Zawलाई	Revenue collected (in Rs.)
2013- 2014	5036 cases (60432 bottles)	63,45,360.00 (@105 per bottle)
2014- 2015	8793 cases (105516 bottles)	1,10,79,180.00 (@105 per bottle)
2015-2016	2267 cases (27204 bottles)	28,56,420.00 (@105 per bottle)
2016-2017	1205 cases (14460 bottles)	15,18,300.00 (@105 per bottle)

Source: Champhai Winery data.

As shown in Table 6, the production of Zawलाई amounted to 7523 cases (90276 bottles) which were very high for a starter. However, in 2012-13 the demand for Zawलाई decrease and as such price adjustment occurs, the price falls from Rs 169.5 to Rs 105 per bottle and hence improved the demand in the following years. However, from 2012-13 the winery began to produce several other wine viz. Zo Wine, and in 2015-16 Champwine, which decrease the production of Zawलाई to some extent.

The average production and Sales of Zawलाई in the pre and post MLPC Act is shown in Table 7.

Table 7: Average Production and Sales of Zawलाई in the pre and post MLPC Act.

Period	Average Production (in bottle)	Average Revenue collected (in Rs.)
Pre MLPC (2010-14)	77992.8	94,75,322
Post MLPC (2015-17)	20,832	21,87,360

As shown in Table 7, we can conclude that the Average revenue of Zawलाई in the Post MLPC Act greatly decreases.

3.3 (d) Production of Zo wine

Zo wine was first introduced by the Champhai Winery in 2013. Packed with glass bottle and contain 750 ml, Zo wine cost Rs 95 per bottle (inclusive of all taxes).

The production and sales of Zo wine is shown in the Table 8.

Table 8: *Production and Sales of Zo Wine (2012 to 2017) in Champhai Winery.*

Year	Total Production of Zowine	Revenue collected (in Rs.)
2012- 2013	3622 cases (43464 bottles)	41,29,080.00 (@95 per bottle)
2013- 2014	20463 cases (245556 bottles)	2,33,27,820.00 (@95 per bottle)
2014- 2015	4339 cases (52068 bottles)	49,46,460.00 (@95 per bottle)
2015-2016	2468 cases (29616 bottles)	28,13,520.00 (@95 per bottle)
2016-2017	164 cases (1986 bottles)	1,88,670.00 (Rs 95 per bottle)

Source: Champhai Winery data.

Table 8 gives us a clear scenario in the performance of Zo wine in the Local market. And comparing the table by dividing it into pre and post MLPC Act, the Average sales and production of Zo wine Before (2012 to 2014) and after (2015 to 17) MLPC Act is shown in Table 9.

Table 9: *Average Prod. and Sales of Zo wine in the pre and post MLPC Act.*

Period	Average Production (in bottle)	Average Revenue collected (in Rs.)
Pre MLPC (2010-14)	113696	Rs. 1,08,01,120
Post MLPC (2015-17)	15,801	Rs. 15,01,095

As shown in Table 9, we can conclude that the Average production and revenue of Zo wine decrease after the MLPC Act.

3.3 (e) Production and Sales of Champwine

Champwine was first produced in 2015, after the MLPC Act, it was packed with 325ml glass bottle and cost Rs. 48.625 (inclusive of all taxes) per bottles.

The production and sales of Champwine is shown in the Table 10.

Table 10: *Production and Sales of Champwine from 2015 to 2017 in Champhai Winery.*

Year	Total Production of Wine	Revenue collected(in Rs.)
2015-2016	2944 cases (35328 bottles)	Rs 17,17,824.00 (@ Rs 48.625 per bottle)
2016-2017	2737 cases (54740 bottles)	Rs 26,61,732.50 (@ Rs 48.625 per bottle)

Source: Champhai winery data

In Table 10, we can see that the production of Champwine from 2015 resulted in the decrease in the production of other wine viz. Zawलाई and Zowine, however, not to a large extend. The production of Champwine is also accompanied by the selling of concentrated wine outside Mizoram.

3.3 (f) Production and sales of Concentrated wine

The most significant outcome of the MLPC Act was the widening of the grape wine market outside the state of Mizoram. As mentioned before, Champhai Grape Growers' Society signed a deal with the Radiant Manufacturers Limited, for the supply of 3.6 lakhs litres of concentrated wine annually.

The production and sales of concentrated wine by the Champhai winery is shown in Table 11.

Table 11: *Production and Sales of Concentrated wine from 2015 to 2017 in Champhai Winery.*

Year	Total Production of Wine	Revenue collected (in Rs.)
2015-2016	64000 ltrs	39,20,000.00 (16000 ltrs @ Rs 50 per litre & 48000 ltrs @ Rs 65 per litre)
2016-2017	93000 ltrs	60,45,000.00 (@ Rs 65 per litre)

Source: Champhai Winery data.

As shown in Table 11, in 2015-16, concentrated wine was at first sold at Rs 50 per litre, however it was again revised to Rs 65 per litre. Concentrated wine and bottled wine are quite different in their revenue generation. The price per litre of bottled wine and Concentrated wine is shown in Table 12.

Table 12: *Price per litre of bottled wine and Concentrated wine in Champhai Winery (prices are all inclusive of all taxes).*

Sl No.	Type	Price/Litres (in Rs)
1	Zawlaidi	140
2	Zowine	144.829
3	Champwine	146.153
4	Concentrated wine	65

Source: Champhai Winery data.

The cost of one empty bottle is Rs 13.5. Even so, looking at the table, it is obvious that the Winery revenue per litres of Wine is very low in the sales of concentrated wine compared to the bottled wine viz. Zawlaidi, Zo wine and Champwine. However, the sales of concentrated wine in Radiant Manufacturers Limited, is the only markets for their surplus product.

3.3 (g) Average Production and Revenue of the Winery

Summing up of all the above data we can have the average Production and Revenue of the Winery. Before highlighting the Average Production and Revenue, let us first highlight the Total Production and Sales of Wine in Table 13.

Table 13: *Total Production (in litres) and Sales of Champhai Winery.*

Year	Total Production of Wine (in litres)	Revenue Collected (in Rs.)
2010-2011	67707 litres	1,53,01,782.00
2011-2012	13581 litres	25,08,930.00
2012- 2013	1. Zawlaidi- 86724 litres 2. Zo Wine- 28251.6 litres Total= 1,14,975.5 litres	1,21,41,360.00 41,29,080.00 Total = 1,61,70,440
2013- 2014	1. Zawlaidi- 45324 litres 2. Zo Wine - 159611.4 litres Total= 2,04,935.4 litres	63,45,360.00 2,33,27,820.00 Total = 2,96,73,180

Table 13 (Contd.): Total Production (in litres) and Sales of Champhai Winery.

Year	Total Production of Wine (in litres)	Revenue Collected (in Rs.)
2014- 2015	1. Zawlaidi- 79137 litres 2. Zo Wine- 33844.2 litres Total= 1,12,981.2 litres	1,10,79,180.00 (@ Rs 105 per bottle) 49,46,460.00 (@ Rs 95 per bottle) Total= 1,60,25,640
2015-2016	1. Zawlaidi- 20403 litres 2. Zo Wine - 19250.4 litres 3. Champwine- 11481.6 litres 4. Concentrated wine- 64000 litres Total = 1,15,135 litres	28,56,420.00 (@ Rs 105 per bottle) 28,13,520.00 (@ Rs 95 per bottle) 17,17,824.00 (@ Rs 48.625 per bottle) 39,20,000.00 (16000 ltrs @ Rs 50 per litre & 48000 ltrs @ Rs 65 per litre) Total= 1,13,07,764
2016-2017	1. Zawlaidi- 10845 litres 2. Zowine- 1290.9 litres 3. Champwine- 17790.5 litres 4. Concentrated wine- 93000 litres Total = 1,22,926.4 litres	15,18,300.00 (@ Rs 105 per bottle) 1,88,670.00 (@ Rs 95 per bottle) 26,61,732.50 (@ Rs 48.625 per bottle) 60,45,000.00 (@ 65 per litre) Total= 1,04,13,702.5

Source: Champhai Winery data

Figure 1: Figure showing the Production of Wine in Champhai Winery from 2010 to 2017.

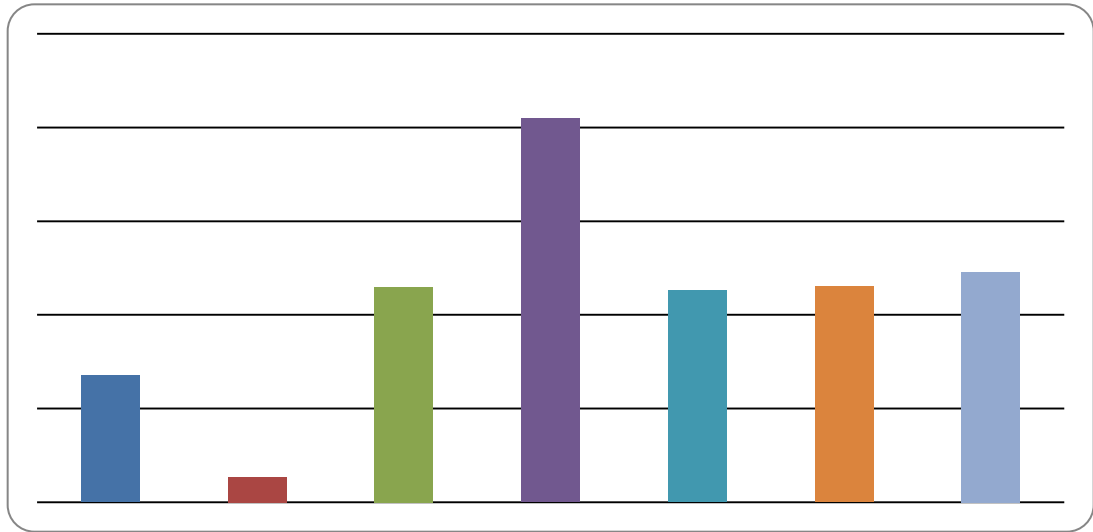


Figure 2: Figure showing the Revenue from Wine in Champhai Winery from 2010 to 2017.

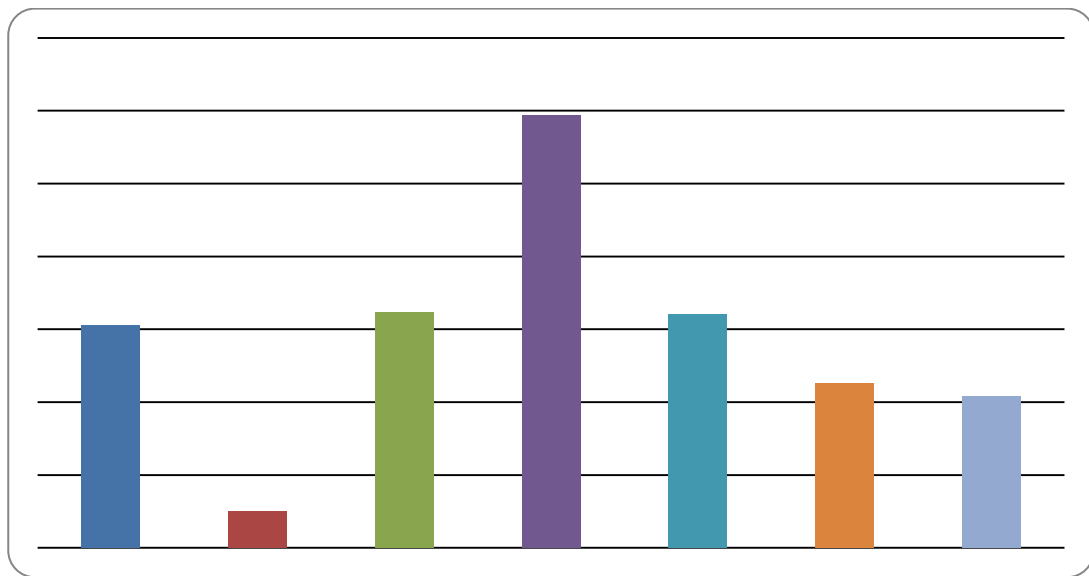


Table 13 clearly highlights the Winery production and sales of wine. At the same time figure 1 and 2 shows the Production and Revenue pattern of Champhai winery from the year 2010 to 2017. To make the table more in

depth, let us take the average production and sales of the winery in the pre and post MLPC Act, so that we can see the difference in the production and revenue.

Table 14: *Average Production and Revenue in the pre and post MLPC Act.*

Period	Average Production of Wine (in litres)	Average Revenue (in Rs.)
Pre MLPC (2010-15)	1,02,836.02	1,59,35,994.4
Post MLPC (2015- 17)	1,19,030.7	1,08,60,733.25

Figure 3: *Figure showing the Average production of Wine in Champhai Winery in the pre and post MLPC Act.*

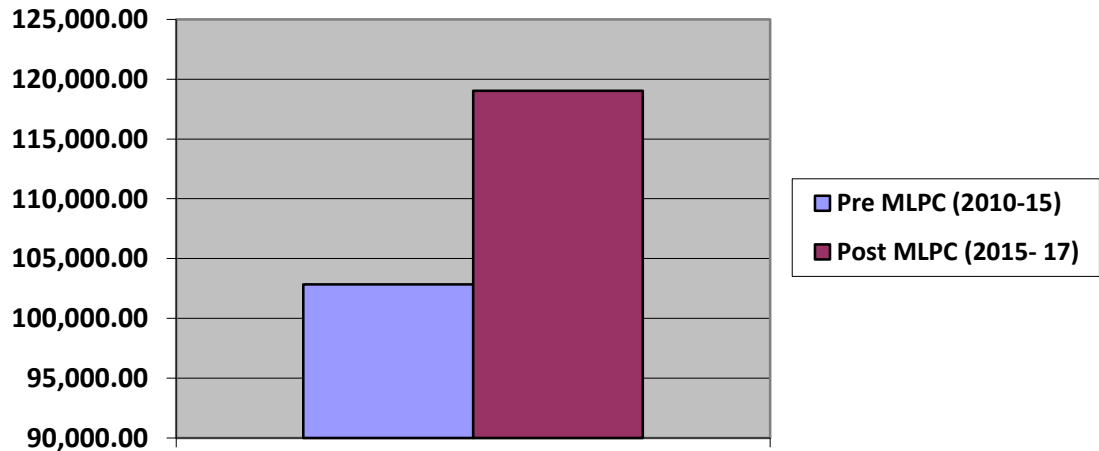
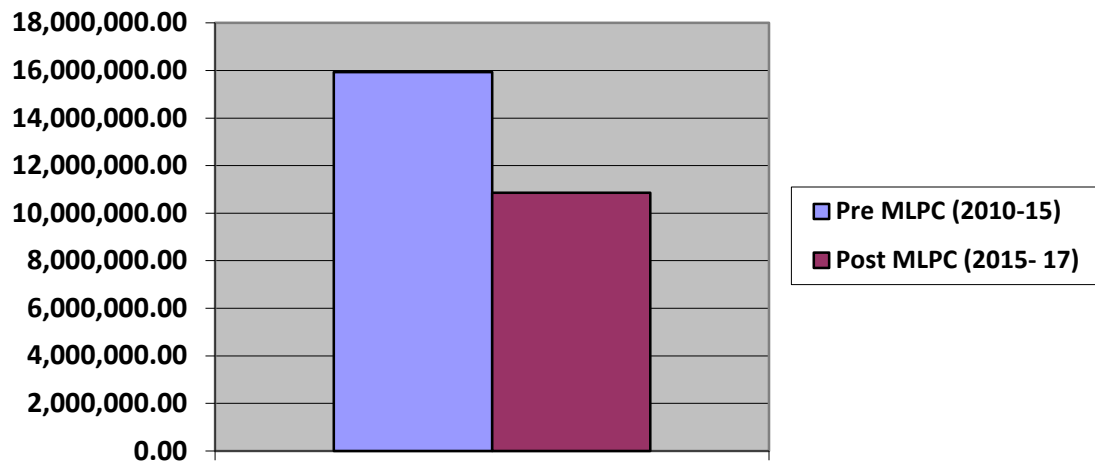


Figure 4: *Figure showing the Average revenue of Wine in Champhai Winery in the pre and post MLPC Act.*



From Table 14, it is obvious that the Average Production of Wine in the pre MLPC Act was less than the post MLPC Act by 16,194.64 litres. However, looking at the Average revenue the Average Revenue in the pre MLPC Act was much more than the post MLPC Act, with a difference of Rs 50,75,261.15. This is due to the widening of the Market for selling the surplus product, which was mentioned in 3.3(f). The implementation of the MLPC Act does not have much impact on the production of Wine; however, due to the decrease in demand in the local markets, the surplus wine has to be sold outside Mizoram with less than half the price in the local markets.

Due to inadequate degrees of freedom we cannot test the hypothesis using statistical tools. But, from the above analyzed data it is obvious that there is a significant decrease in the average revenue in the post MLPC Act when comparing to the pre MLPC Act.

4.1 Introduction

After analyzing the Winery data several findings, recommendations and conclusions can be made. This chapter will highlights the research findings, recommendations, limitations of the Study, Areas for further research and finally conclude the research.

4.2 Findings

a) The total Grape crushed in the winery

In 3.3(b), the total grape crushed in Champhai Winery was analyzed. The total grape crushed in the winery from 2010 to 2017 was analyzed. Analyzing the data by taking the average grape crushed in the pre and post MLPC Act, it was found that the average Pre-MLPC Act (2010-14) grape crushed was 1194.4 quintal and the Post-MLPC Act (2015-17) grape crushed was 1624 quintal respectively. Therefore, the average grape crushed in the winery Post-MLPC Act was more than the average grape crushed in the Pre-MLPC Act.

b) The production of Zawlaidi

In 3.3(c), the production of a bottled wine, Zawlaidi, was analyzed. The total production in the year 2010 to 2017 in Cases and bottles along with the Revenue collected and the price per bottle was highlighted. Analyzing the data by taking the average production and sales of Zawlaidi in the pre and post MLPC Act, the average production in Pre-MLPC Act was 77,992.8 bottles and

the Revenue collected was Rs 94,75,322 (inclusive of taxes). Again in the Post-MLPC Act, the average production was 20,832 bottles and the revenue collected was Rs 21,87,360 (inclusive of taxes) respectively. Therefore, the Production of Zawlaidi in the Post-MLPC Act was less than the Pre-MLPC Act in which the same case happens in the Average Revenue collected.

c) Total Production of Zo wine

In 3.3 (d), the production of bottled wine, Zo wine, was analyzed. The data which include the production and sales of Zo wine in the Champhai winery in between 2012 and 2017 was highlighted and analyzed. After analyzing the data by taking the average for the pre and post MLPC Act, the pre MLPC Act (2010-14) average production of Zo wine was 1,13,696 bottles and in the post MLPC Act (2015-17) it was 15,801 bottles respectively. At the same time, the average revenue collected from the production of Zo wine in the pre MLPC Act was Rs 1,08,01,120 and in the post MLPC Act it was Rs 15,01,095 respectively. Therefore, by comparing the pre and post MLPC Act, the average production and sales of Zo wine falls in the Post MLPC Act.

d). Widening of the Market

After the implementation of the MLPC Act in 2015, branded wine which was more valued by the locals has entered the markets. This led to the downfall of the sale of the locally produced Wine. As such the winery has no choice but to

search for other markets or to produced different variety of wine to attract customers. Thus, came the 325ml Champwine in 2015. However this does not have much effect on the open market as the branded wine monopolized the market.

As a result of the market breakdown, Champhai Winery has to search for other markets for their finished product in which the Radiant Manufacturer Limited comes up. Thus, after the MLPC Act, there was a widening of the markets outside Mizoram.

e). Average Production and Revenue of the Winery.

The Average production and Revenue which sums up the performance of Champhai Winery has been analyzed in 3.3 (g). In the meantime, the price per litre of bottled wine and concentrated wine was quite different which was shown in Table 12, following the price of the bottle (in bottled wine) at Rs 13.5.

Looking at table 14, which analyzed the average production and average revenue of Champhai Winery in the pre and post MLPC Act, we can summarised that the average production of wine didn't have much impact on the MLPC Act, it increases. However, looking at the average revenue, even though the average productions increase the average revenue decreases. This is mainly due to the cheap selling of the concentrated wine. Therefore, the major

finding of this research was the effect of MLPC Act on the revenue collected i.e. the average revenue decreases after MLPC Act, by the winery.

f). Economic environment in Mizoram

All the above findings were proved statistically. However, the economic environment in Mizoram is primary information which was gathered from the farmers and the society.

Firstly, the MLPC Act affected the two Wineries viz. Champhai and Hnahlan Winery, in the open market, these two winery product does not stand a chance in competing with the branded wine product. Thus, there was a domestic market conflict.

Secondly, due to the market conflict, the local producers i.e. the two wineries, suffers. Laltlankima Fanai, General Secretary, Hnahlan Grape Growers' Society, talks about this issue, saying that, after the MLPC Act, the Winery market was shattered. The finished product in the winery could hardly be sold, as their product could not compete with the imported brand liquor. So, the Hnahlan Winery closed down three years back in 2015. Further, as the market shattered they had no other choice but to sacrificed the winery so that at least one Winery i.e. Champhai Winery, can go on.

Thirdly, there is a socio-effect which occurs in the area of Hnahlan. Due to the closing down of Hnahlan Winery, many of the farmers become helpless. One

of the farmers states the condition: As the Winery did not buy their grapes they had no other options but to processed the grapes and sell it. However, the only market was the locality where the Winery is located. This effect the social condition of the locality, since the grape wine was not considered as harmful as the liquor in the market; people can freely buy and drink it. However, it still becomes a social issue as many of the youth misused it as liquor, by consuming it daily. Thus, after the MLPC Act, the grape wine market shattered, which create a social problem in some of the Grape producing villages.

Lastly, even though the State government generated much revenue from the excise revenue, which was mention in Chapter 1.6. It destroys the grape farmers as well as the Winery. Also, many of the domestic spending on liquor or wine has been transferred to other several companies outside Mizoram.

4.3 Recommendations

After analyzing the data and findings, several recommendations can be made in respect of the Winery and its market. Some of the recommendations are:-

- a) The winery begins with a loan from the MRB (Mizoram Rural Bank), the society was paid 140 lakhs as a loan, and again during the MNF regime in Mizoram, they were given about 84 lakh as a loan through the MIP (Mizoram Intodelh Project). Afterwards, there was no massive

financial assistance from the government. Thus, the winery needs a time to time financial assistance as it only depends on the revenue collected from the sales of wine.

- b) The Champhai Winery can store only about 1,800 quintals of grapes. This has become quite small, as the grape produced differs annually and the need for storing the surplus grapes increases due to the unforeseen natural calamities.
- c) Bangalore blue (fox grape/*vitis labrusca*) is the only variety of grape that has been cultivated in the area. It is a high time that several other grapes are also experimented.
- d) As mentioned earlier, the market for the finished product becomes quite scarce inside Mizoram after the MLPC Act. Luckily, due to the Radiant Manufacturer Ltd. many of the surplus wine can be sold, however it was sold in half the price of bottled wine. Thus, there is a need for a market where the wine can be sold with much higher profit.
- e) The excise duty imposed on the wine is about 14.28% (see table 12 for price per litres). This is quite a bit high for a self-reliance industry. Thus, the excise duty may decreased by at least 4%, which will bring more profit to the Winery.
- f) The transportation of Grapes from the farm to the winery and from the winery to the buyers, take place only by road transportation. The roadways become a bottlenecks for the Winery, as it many of the roads

were unrepaired. Therefore, for the Winery to develop further there is a high need to improve the roadways.

- g) Grape is a fruit which needs a lot of care, thus, many of the farmers in the area are not well aware that they plant grapes in a wide areas, in which they cannot take care of all the grape vines, and this make the grape unproductive. Therefore, instead of the size of the plantation, the qualitative care of the grape matters much more.
- h) In many developed countries, grape wine has been a part of the food menu. Proper use of it helps in digestion and losing weight. Therefore, we must aware people about the advantage of using wine as a source of diet, which will also help in the marketing process.

4.4 Limitations of the Study

Despite the best co-operation received from the management and staff of the Champhai Winery, the researcher found it difficult to meet the farmers in good number for data collection. Champhai is a remote corner of the State of Mizoram and this created a distance barrier.

4.5 Areas for further Research

The prospective researchers interested in working on this area of research may consider the following topics for further research-

- a) Socio-Economic conditions of Grape farmers.

- b) Entrepreneurship development among the Champhai grape growers.
- c) Marketing of Grapes in Mizoram.
- d) Financial inclusion and financial literacy of Grape farmers.
- e) Comparative analysis of Champhai Winery and other wineries in India.

4.6 Conclusion

This paper highlights information about grape cultivation in Mizoram and the performance of Champhai Winery. It gives significant importance to the MLPC Act, comparing the performance of the winery in the pre and post MLPC Act. A secondary data which was collected in the winery was analyzed. After analyzing the production and sales of the winery, we can conclude that, the MLPC Act does not affect the production of Grapes/wine however, it affect the revenue generated from the sales of wine. Moreover, several other findings were also highlighted with some recommendations. It is expected that this paper may be a good source of information for taking steps towards the further development of grapes and winery in Mizoram.

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