

RESEARCH PAPER

How does the Indian Tobacco Industry Respond to Prohibitory Acts? An insight

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Received: 23-11-2024

Revised: 25-02-2025

Accepted: 06-03-2025

ABSTRACT

Tobacco (*Nicotiana tabacum*) cultivation is a significant economic driver in India, making it the world's second-largest producer with annual yield of about 0.8 million tonnes, despite using only 0.24% of arable land. This narcotic is well known for its ill effects on human as well as environmental health which necessitates enactment of several prohibitions on production and consumption of tobacco products worldwide. Using time series analysis, this study finds that despite implementation of multifarious tobacco control laws, tobacco acreage and production in post-enactment period are steadily rising at CAGR 0.5% and 3.2% respectively in Indian sub-continent. What will be the possible way out of this situation having the duality of health hazard and economic benefit? This study tries to throw some light on that and calls for a pragmatic approach on the part of concerned authorities (global as well as domestic) to deal with the tobacco economy as a whole.

HIGHLIGHTS

- ❶ Restrictive measures implemented by the Government of India to control the health hazards of tobacco products.
- ❷ No noticeable direct effect of the prohibitory laws on the consumption and production of tobacco.
- ❸ Tobacco acreage and production in the post-enactment period rose at CAGR 0.5% and 3.2% respectively.
- ❹ Exports of tobacco (manufactured and unmanufactured products) grew by SAGR 5.61% per annum.

Keywords: Indian Tobacco Industry, CAGR, Prohibitory Acts, Strategic approaches

Globally, tobacco production and marketing have seen significant expansion, with major contributors being China, Brazil, India, the United States, Indonesia, Turkey and several other countries. China holds the top position in tobacco production, followed by India, which ranks second (Table 1). Brazil comes in third, with Indonesia following closely. These countries dominate the global tobacco industry, contributing substantially to the overall production and marketing of tobacco products worldwide.

Tobacco cultivation is a significant economic driver in India, making it the world's second-largest producer with an annual yield of about 0.8 million tonnes, despite using only 0.24% of arable land. The sector

contributes significantly to tax revenues, exceeding ₹ 72,788 crores and tobacco exports generate over ₹ 4,400 crores in foreign exchange annually. Approximately 45.7 million people, or 3% of the population, are employed in the tobacco industry, including farmers, laborers, tribals, women workers and their families (Tobacco Institute of India, n.d.). This labor-intensive sector is financially rewarding, often outperforming alternative crops (Das *et al.*, 2017). However, the health and environmental

How to cite this article: Kar, S., Das, S. and Das, K.K. (2025). How does the Indian Tobacco Industry Respond to Prohibitory Acts? An insight. *Econ. Aff.*, 70(01): 65-73.

Source of Support: None; **Conflict of Interest:** None



concerns associated with tobacco require a balanced approach, exploring sustainable alternatives while recognizing its socioeconomic importance (Sharma *et al.* 2017). Despite these challenges, current technology doesn't offer economically viable crop replacements (Panchal *et al.* 2021). Comprehensive strategies are essential to harmonize tobacco control policies with the livelihoods of those dependent on the industry.

Tobacco consumption remains a critical global health issue, causing millions of deaths annually. In 2017 alone, approximately 8 million people died from tobacco-related diseases (Tobacco Institute of India, n.d.). Despite declining usage rates, these numbers are expected to rise due to the delayed manifestation of tobacco-related illnesses. The WHO Framework Convention on Tobacco Control (WHO-FCTC), established in 2003, marks a global commitment to combat the tobacco epidemic, outlining evidence-based actions for member states to reduce tobacco demand. The UN Sustainable Development Goals emphasize the importance of strengthening WHO-FCTC implementation (World Health Organization, 2017).

Table 1: Global perspective of tobacco production
(Year: 2020-21)

Country	Production (million tonnes)	Rank
China	2.13	1 st
India	0.76	2 nd
Brazil	0.74	3 rd
Indonesia	0.24	4 th
United States	0.22	5 th

Source: FAO, 2021.

The WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases (2013–2020) aims for a 30% reduction in global tobacco use by 2025, compared to 2010 levels. Tobacco kills up to half its users, with over 8 million deaths annually: 7 million from direct use and 1.2 million from second-hand smoke. Most users live in low and middle-income countries, which bear the heaviest burden of tobacco-related illnesses and deaths. The economic impact is significant, with substantial healthcare costs and loss of human potential. In some regions, children work in tobacco farming, risking health issues like “green tobacco sickness.”

Monitoring the tobacco epidemic is crucial, yet only one-third of countries conduct regular surveys. Second-hand smoke exposure, with no safe level, leads to over 1.2 million premature deaths yearly and severe diseases, affecting nearly half of the children in public spaces and causing significant infant and pregnancy complications (Ministry of Health and Family Welfare, Government of India, n.d.). Comprehensive strategies are essential for effective policy implementation and public health protection.

The Government of India introduced the National Tobacco Control Programme (NTCP) in 2007-08 with several key objectives: raising awareness about the harmful effects of tobacco consumption, reducing the production and supply of tobacco products, ensuring effective enforcement of the provisions outlined in the “The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003 (COTPA), assisting individuals in quitting tobacco use through Tobacco Cessation Centres (TCCs). NTCP operates through a three-tier structure:

- ♦ **National Tobacco Control Cell:** At the central level, the cell is responsible for coordination and policy development.
- ♦ **State Tobacco Control Cells:** At the state level, focused on implementing and monitoring tobacco control measures, including training, information, education and communication (IEC) activities, school awareness programs and the establishment and strengthening of cessation facilities.
- ♦ **District Tobacco Control Cells:** At the district level, these cells work to implement and oversee tobacco control initiatives.

These components have been integrated into the Non-Communicable Diseases (NCD) Flexi-pool of the National Health Mission (NHM) for more effective implementation. The program operates in all 36 States/Union Territories, covering approximately 612 districts across the country.

In India, tobacco usage is prevalent among approximately 25% of urban adults and 38% of rural adults (Ministry of Health and Family Welfare, Government of India, n.d.). Small-scale industries produce bidis, while cigarettes are

Table 2: Prohibitory Acts on tobacco use in India

Year	Act	Prohibition
2003	The Central Government amended The Cinematograph Act	To ban scenes that endorse or promote the consumption of tobacco in any form.
	The Delhi Prohibition of Smoking and Nonsmokers Health Protection Act	To prohibit the sale of cigarettes to minors and prohibit the sale of 100 m from a school building, this law allowed for enforcement in public places and public transport by police and medical professionals.
	The Kerala Prohibition of Smoking and Protection of Non- Smokers Health Bill	To prohibit smoking in public places, including parks and highways.
	The Central Government amended the Drugs and Cosmetics Act	To ban the manufacture and use of toothpaste and toothpowders containing tobacco.
2004	The Cable Television Networks (Regulation) Act	To ban any direct or indirect advertisements related to the use or trade of tobacco on cable television, and, introduced penalties of imprisonment or fines for offenders.
	The Tamil Nadu Prohibition of Smoking and Spitting Act	Every person in charge of a place of public work or use shall display and exhibit a board at a conspicuous place in or outside the place prominently stating that the place is a 'No Smoking and No Spitting place' and that 'Smoking or Spitting is an Offence' which shall be both in Tamil and English and the version in English shall be in the second place below the Tamil Version.
2005	World No Tobacco Day	The Ministry of Health announced that the depiction of any form of tobacco use in films and television serials would be banned. Any advertisements related to tobacco were prohibited on national television and All India Radio. The sale of tobacco was banned around educational institutions.
2008	Smoking is banned	To commemorate Mahatma Gandhi's birthday, the government imposed a ban on smoking in public places, offices, restaurants, bars, and open streets. A fine of 200 rupees was imposed for contravening this regulation.
2009	The Goa Act	Bans tobacco advertising in the form of writing instruments, stickers, symbols, colours, logos, and trademarks, and prohibits display on T-shirts, shoes, sportswear, caps, carry bags, and telephone booths.
	People awareness act	A ruling of the Delhi High Court in January 2009 lifted the ban on smoking scenes in movies because such a ban contravened rights of expression.
2010	The Cigarettes and other tobacco products (packaging and labelling) Rules	There must be a warning that tobacco causes cancer in tobacco packs.
2012	The Cigarettes and other Tobacco Products Amendments Rules	The owner or manager of a cinema hall or theatre screening old films that display tobacco products or their use shall ensure that anti-tobacco health spots of a minimum of thirty seconds each are screened at the beginning and middle of the film.
2020	The Cigarettes and other Tobacco Products (Packaging and Labelling) Third Amendment Rules, 2020	Textual Health Warning for smoking and smokeless forms of tobacco products, the words "TOBACCO CAUSES PAINFUL DEATH" shall appear in white font colour on a red background, and the words "QUIT TODAY CALL 1800-11-2356" shall appear in white font colour on a black background.
2022	The Cigarettes and other Tobacco Products (Packaging and Labelling) Amendment Rules, 2022	Textual Health Warning for smoking and smokeless forms of tobacco products, the words "TOBACCO CAUSES PAINFUL DEATH" in Image-1 and the words "TOBACCO USERS DIE YOUNGER" in Image- 2 shall appear in white font colour on a red background. The words "QUIT TODAY CALL 1800-11-2356" shall appear in white font colour on a black background.

(Source: Ministry of Health and Family Welfare, Government of India, n.d.)

mainly manufactured by large scale industries. Despite its paramount economic merits, there was general consensus on the hazards/ill effects of tobacco products on human health as well as on environmental health (Shaikh *et al.* 2022). The environmental consequences (abuses) of tobacco warrant strong laws to control its cultivation, sale, and use (Teja *et al.* 2017). The International Legal Consortium (ILC) offers expert technical aid and resources to tobacco control lawyers and advocates, assisting them in implementing evidence-based policies in line with the WHO Framework Convention on Tobacco Control (Bradlow and Hunter, 2022). Keeping in parity with the global enactment (in this regard), India started to control the tobacco economy by introducing certain Acts/Rules/Regulations (Table 2). But the question comes about the effect of these prohibitory measures – how is the industry (tobacco) shaping up in India in the face of various regulations? Is it still increasing or, is experiencing a declining trend? Hence, the study. By conducting an economic analysis of this nature, valuable insights can be gained for better understanding of the ‘true’ picture and policy perspective thereof.

METHODOLOGY

This investigative research study is based on secondary data to achieve its goal. Secondary data is sourced from diverse outlets, including Gram Panchayat Offices, relevant government departments in West Bengal such as the Assistant Director of Agriculture and Regional Research Centre, as well as pertinent government websites, published reports, articles, and other available resources. Relevant data on the area, production and productivity of tobacco have been culled for the period 1990-91 to 2020-21. The data relates to country, state and district (Cooch Behar) as well. Exponential form of trend equation is found to be the best fit for time series analysis of all the output (area, production)-both in the sub-period and main period.

$$\ln y = a + bt + u_i$$

Where,

y = Dependent variable (area/production of tobacco over the time)

a = Constant

b = Coefficient of time

t = Time

u_i = Stochastic disturbance term

The growth rate = $b \times 100$

$\hat{b}$ = Estimated value of time co-efficient

RESULTS AND DISCUSSION

During the triennium ending in 2020-21, Gujarat emerged as the leading state in terms of both tobacco area (about 44% of the total) and production (about 50% of the total). Uttar Pradesh, which ranked 4th in area coverage (about 7% of the total), claimed the top position in tobacco productivity (3,105 kg/ha). As for West Bengal, it secured the fifth spot, contributing about 3% of national production and 4% of area coverage (Table 3). These rankings highlight the varying performances of these states in the tobacco sector, with Gujarat excelling in the area and production, Uttar Pradesh demonstrates high productivity and West Bengal occupies a middle position in terms of overall tobacco cultivation and output.

Cooch Behar (along with Jalpaiguri) is a leading district in North Bengal known for its extensive tobacco cultivation. It holds a significant percentage share (about 91%) in terms of the area dedicated to tobacco farming, as well as the production (about 93%) and productivity of tobacco within the state of West Bengal (Table 4). The district's prominence in the tobacco industry is evident, as it contributes significantly to the overall tobacco cultivation in the region. Tobacco happens to be one of the major rabi crops and shares about 6% of the cultivable area in the district. Now, we would like to have an understanding of the growth of tobacco acreage and production both from a national as well as district (Cooch Behar) perspective (Fig. 1 to 12). We know that several restrictive measures have been passed/implemented by the governments to reduce/control the health hazards (both to the environment and humans) of tobacco products. The first such instance came during 2002-03. We, therefore, undertake this growth study for two sub-periods i.e., 1990-91 to 2002-03 as Period I (pre-enactment period) and 2003-04 to 2020-21 as Period II (post-enactment period) along with the overall period (1990-91 to 2020-21). Exponential form of trend equation fitted well (relatively greater R^2)

Table 3: Leading tobacco-producing states in India (during the triennium ending year 2020-21)

State	Area (million ha)	Production (million tonnes)	Productivity (kg./ha)
Gujrat	0.170 (43.59%)	0.370 (50.13%)	2,183.66
Andhra Pradesh	0.087 (19.92%)	0.156 (21.24%)	2,051.00
Uttar Pradesh	0.032 (7.34%)	0.087 (11.87%)	3,105.00
Karnataka	0.081 (20.91%)	0.071 (9.63%)	868.66
Bihar	0.010 (2.68%)	0.018 (2.48%)	1,753.66
West Bengal	0.014 (3.78%)	0.020 (2.80%)	1,402.66
India	0.390	0.738	1,902.33

Source: <http://www.indiastat.com/>

*Figures in parentheses indicate % to corresponding national figures.

Table 4: Status of Cooch Behar in West Bengal Tobacco economy

Years	Cooch Behar		West Bengal	
	Area (000 ha)	Production (000 tonnes)	Area (000 ha)	Production (000 tonnes)
2016-17	14.295 (91.13%)	24.281 (91.10%)	15.68	26.65
2017-18	14.857 (82.54%)	25.494 (92.12%)	17.99	27.67
2018-19	13.850 (94.28%)	17.449 (79.74%)	14.69	21.87
2019-20	14.626 (96.50%)	21.858 (97.32%)	15.15	22.46
2020-21	15.094 (91.95%)	20.362 (93.65%)	16.41	21.74

*Figures in parentheses indicate % to corresponding figure of state.

Source: Central Tobacco Research Station, Cooch Behar, Department of Agriculture, West Bengal.

with the observed data in most of the cases and is used for calculating the Compound Annual Growth Rates (CAGRs).

The tobacco economy registered a positive growth rate in India as well as in Cooch Behar over the last 30 years i.e., from 1990-91 to 2020-21 (Fig. 9 to Fig. 12). While tobacco acreage in the country has a marginal growth rate of 0.17% per annum, it is quite higher (2.06% per annum) in Cooch Behar (Table 5). In the production of output, too, the growth rate of the Cooch Behar district (6.06% per annum) out-passes that of India (1.41% per annum). However, the sub-period decomposition of this growth figure shows differential results. During sub-period I (i.e., 1990-91 to 2002-03), both the area and production of tobacco show a declining trend (Fig. 1 to Fig. 4). While the tobacco area declined at 1.70% per annum in the country, it is 2% per annum in Cooch Behar district. Regarding production, the decline was 1.60% per annum for India and 8.4% per annum for Cooch Behar. That is to say, the rate of decline of both area and production was higher in Cooch Behar than that of the nation during the pre-enactment period.

In sub-period II (i.e., 2002-03 to 2020-21), we noticed a different picture – area and production increased both in the country and the district as well (Table 5). In the country, the growth rate in tobacco acreage was 0.50% per annum compared to the district's (Cooch Behar) 1.19% per annum (Fig. 5-6). Similarly, while production of tobacco rose at 3.20% per annum in the country, it was 2.87% per annum in the district (Fig. 7-8). Thus, it may be presumed from the growth analysis that the enactment of several prohibitory acts has little effect on tobacco output (physical) in the country as a whole. Overall, there is a steady progress of tobacco acreage and production both in the country as well as in Cooch Behar district.

What about the market? India earns a great amount (1449.54 million US \$ during the 2023- 24 financial year, source: DGCIS, Kolkata) out of tobacco export. The country exports two primary types of tobacco: unmanufactured (raw) tobacco, such as tobacco leaf, and manufactured tobacco products made from raw tobacco. The export quantities and values of these categories have been tracked from 2000-01

Table 5: Compound Annual Growth Rate (CAGR) of tobacco area and production in India and Cooch Behar during different periods

Period	Parameter	India		Cooch Behar	
		Area	Production	Area	Production
Sub-period I: 1990-91 to 2002-03	Fitted equation	$y = 0.4438 e^{-0.017x}$	$y = 0.6193 e^{-0.016x}$	$y = 10114 e^{-0.02x}$	$y = 9865.7 e^{-0.084x}$
	CAGR (%)	-1.70	-1.60	-2.00	-8.40
Sub-period II: 2002-03 to 2020-21	Fitted equation	$y = 0.3883 e^{0.0056x}$	$y = 0.495 e^{0.0321x}$	$y = 11894 e^{0.0119x}$	$y = 14978 e^{0.0287x}$
	CAGR (%)	0.50	3.20	1.19	2.87
Overall: 1990-91 to 2020-21	Fitted equation	$y = 0.3919 e^{0.0017x}$	$y = 0.4944 e^{0.0141x}$	$y = 8054.6 e^{0.0206x}$	$y = 4380.7 e^{0.0606x}$
	CAGR (%)	0.17	1.41	2.06	6.06

Source: Authors' analysis; *CAGR: Compound Annual Growth Rate.

Table 6: Export performance of tobacco

Triennium ending year	Export quantities (million tonnes)		Export values (U.S. million dollars)		
	Unmanufactured tobacco	Manufactured tobacco	Unmanufactured tobacco	Manufactured tobacco	Total tobacco
2002-03	0.002	0.106	0.85	189.76	190.61
2005-06	0.012	0.136	4.38	261.15	265.53
2010-11	0.020	0.226	10.78	836.70	847.48
2015-16	0.016	0.238	7.96	976.05	984.01
2020-21	0.017	0.207	8.99	910.32	919.31

Source: Statista, 2024.

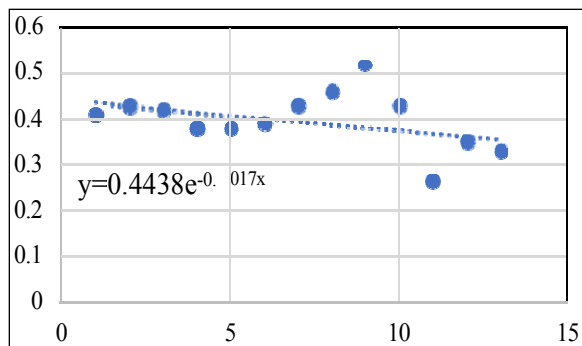


Fig. 1: Trend of tobacco acreage in India before enactment of the laws

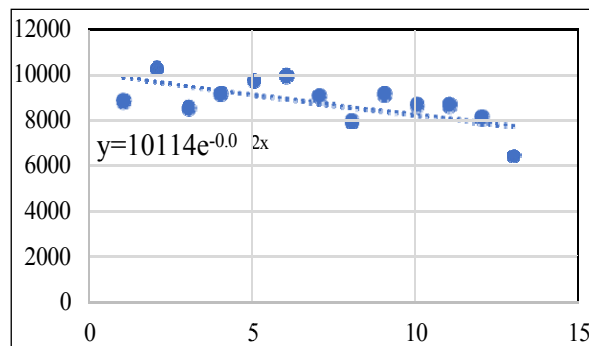


Fig. 2: Trend of tobacco acreage in Cooch Behar before enactment of the laws

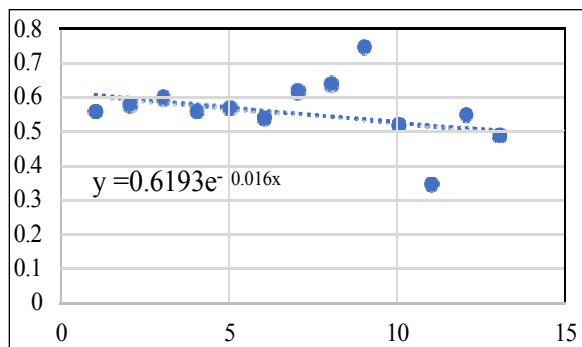


Fig. 3: Trend of tobacco production in India before enactment of the laws

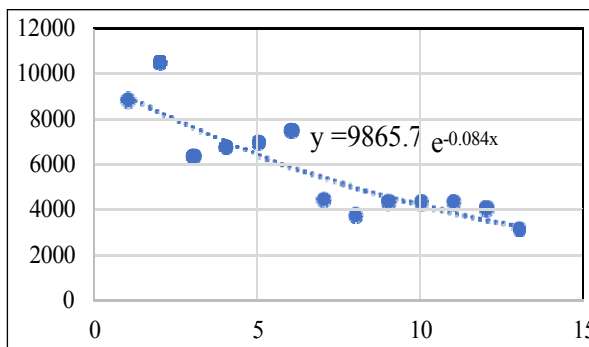


Fig. 4: Trend of tobacco production in Cooch Behar before enactment of the laws

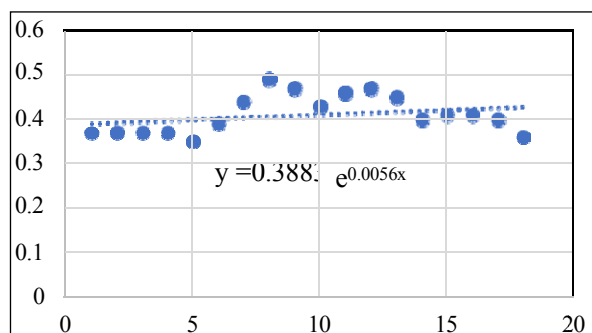


Fig. 5: Trend of tobacco acreage in India after enactment of the laws

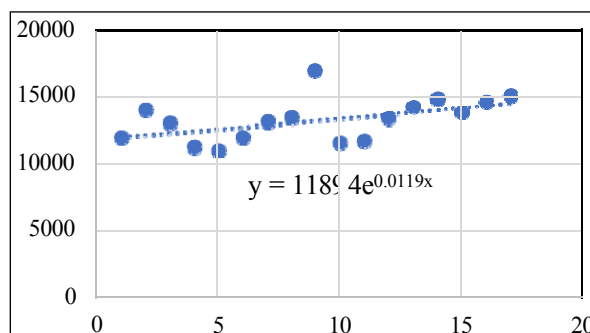


Fig. 6: Trend of tobacco acreage in Cooch Behar after enactment of the laws

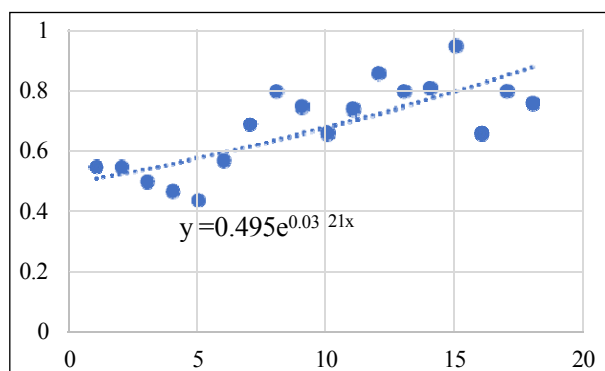


Fig. 7: Trend of tobacco production in India after enactment of the laws

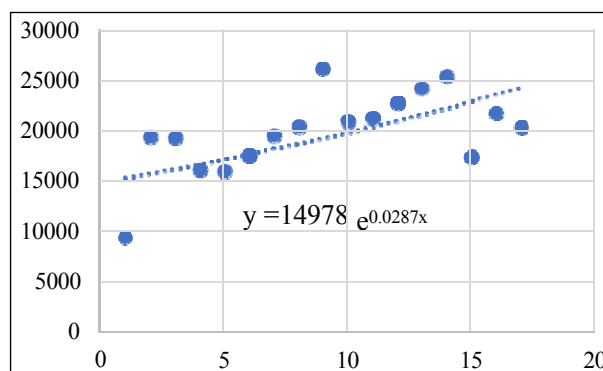


Fig. 8: Trend of tobacco production in Cooch Behar after enactment of the laws

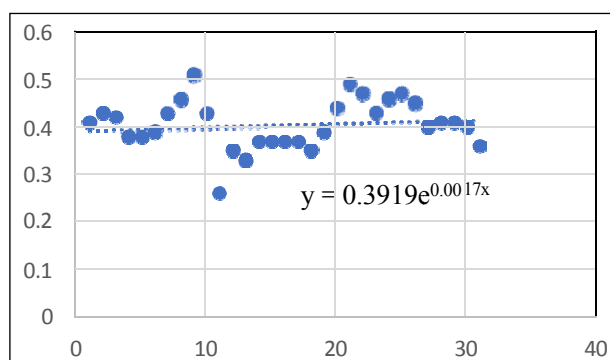


Fig. 9: Trend of tobacco acreage in India during 1990-91 to 2020-21

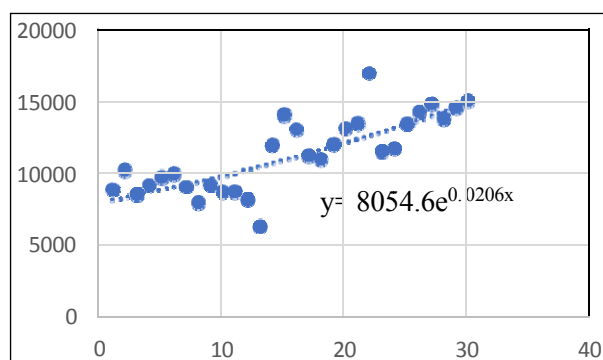


Fig. 10: Trend of tobacco acreage in Cooch Behar during 1990-91 to 2020-21

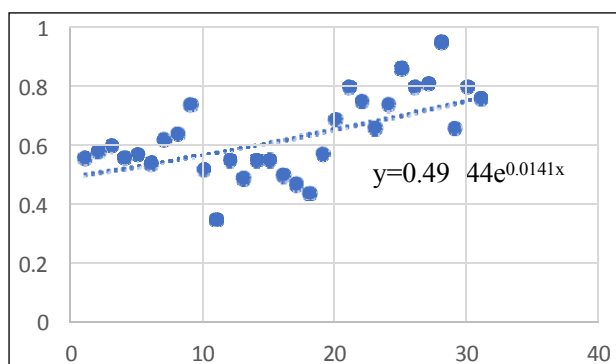


Fig. 11: Trend of tobacco production in India during 1990-91 to 2020-21

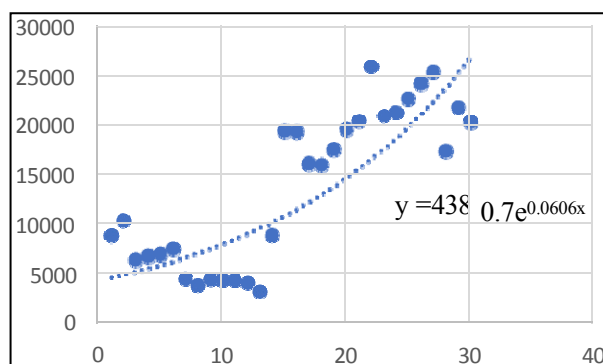


Fig. 12: Trend of tobacco production in Cooch Behar during 1990-91 to 2020-21

to 2020-21, offering insights into the trends and performance of India's tobacco exports. This data highlights India's significant role in the global tobacco trade, showing how the country contributes to international markets through both raw and processed tobacco products. The analysis of these export values helps in understanding the economic impact and trade dynamics of India's tobacco industry over the years.

India stands uniquely as the only country producing tobacco across tropical, sub-tropical and temperate climates. Its tobacco exports reach over 115 countries globally, with significant markets including Belgium, the Philippines, Egypt, Germany, Nepal, the USA, Turkey, among others. This underscores India's broad international footprint in the tobacco industry, catering to diverse markets worldwide. Despite a slight decline in trade volume during the COVID-19 pandemic, overall exports of tobacco products have shown a consistent increase. Comparing the financial year 2002-03 (the beginning of the restriction in the consumption of tobacco), exports of tobacco (manufactured and unmanufactured products) grew approximately by 5.61% per annum [Simple Annual Growth Rate (SAGR)], in general. While exports of manufactured tobacco products increased by around 4.96% per annum (SAGR), that of unmanufactured tobacco products shows about 8 times jump during the period (Table 6). Correspondingly, the country's earnings through the export of tobacco (manufactured and unmanufactured products) show momentous increase over the years (Table 6). These figures illustrate the expanding global demand for Indian tobacco across various processed and raw forms over recent years.

CONCLUSION

The study shows that tobacco acreage and production in the post-enactment period are steadily rising at CAGR 0.5% and 3.2% respectively in the Indian sub-continent. Thus, despite having imposition of several restrictive measures, there is no noticeable direct effect on the consumption and production of tobacco and tobacco products yet. Rather, there happens to be a sustained rise in both the production and export of tobacco and tobacco products with an overall stagnation (CAGR: 0.17% per annum) in the country's tobacco acreage. In Cooch Behar (West Bengal, India), there happens to

be substantial growth in both area and production of tobacco.

If we critically examine the prohibitory laws, it can be clear that these laws are mostly concerned with appealing to the general people 'not to consume tobacco or tobacco products' (warning type), building awareness about health hazards of tobacco consumption (both passive and direct), building awareness about environmental hazards of tobacco consumption etc. These laws remain mostly silent about the imposition of 'penal' measures for tobacco consumption (or, its limit) as it is exclusively a 'private' domain – related to individual's addiction or affinity (towards intoxication).

Answering the question of continuation with tobacco cultivation generation after generation (despite having restrictive laws), the tobacco producers (in the Cooch Behar district of West Bengal, India) responded by citing several economic and non-economic benefits. While the existence of readymade market assured and stable market price of tobacco (especially, the raw tobacco leaves), etc. are important economic incentives, the potentiality of participation of family members (children, farm females along with males) in various pre and post-harvest operations in tobacco cultivation are other motivational factors in this regard. Also, perceived relative superiority of return per rupee (cost of cultivation) in tobacco compared to its competing crops (maize, mustard, potato, lentil, etc.) is an important factor for the continuation or increased allocation towards tobacco over the years. Also, the earning potential of tobacco industry (export, especially) can not be overlooked at all. Hence, it warrants pragmatic/strategic approaches like raising taxes on tobacco and reducing the affordability of tobacco products; bans on tobacco advertising, promotion and sponsorship (TAPS); raising taxes on tobacco products; continuing to strengthen tobacco surveillance systems for getting up-to-date information on tobacco use among adults etc.

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