The Economics of Tobacco Control in India and the Effective Strategies to Control its Use

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Abstract - Tobacco (Nicotiana tabacum) is a preternatural product as it is an important cash crop, whose cultivation is spread over 15 states in India. Studies carried out by Central Tobacco Research Institute indicate potential use of tobacco plants as a source of protein, edible oil, nicotine sulphate, lowcalorie sweetener and solanesol. Tobacco derivatives are used in pharmaceutical oil, paint soap and chemical industries. Extracting nicotine derivatives and nicotine products like nicotine sulphate (used as insecticide), nicotine hydrogen tartarate, nicotine bi-tartarate, nicotine salicylate and nicotine hydrochloride is a handsome source of revenue to the government exchequer and the production and processing to distribution provide livelihood to 36 million people comprising 6 million farmers, 20 million farm labour engaged in tobacco farming and 10 million engaged in processing and manufacturing of tobacco, contributing INR 4400 crores towards foreign exchange earnings.

The other side of the coin, tobacco is the only legal consumer product that kills half of its users when used or consumed. As per WHO studies, 30% of cancer deaths, majority of cardio-vascular and lung disorders, 38% of tuberculosis death are associated with tobacco use, and 13.5 lakh precious lives are lost every year. The Economic cost attributable to tobacco use from all diseases and deaths between 2017 and 2018 for persons above 35 years was INR 1773.4 billion. The estimated cost was more than 1% of GDP. This was 12% more than the combined State and Central Government expenditures on health.

Tobacco is detrimental to environment as well. Tobacco crop pollutes the soil and water sources, its cultivation causes deforestation, as 8 kg of fuel wood is used for preparing 1kg of tobacco, moreover, plastic pouches of smokeless tobacco products and cigarettes butts generate huge non-biodegradable solid waste.

The Indian Government has adopted strategies for tobacco control. On the demand reduction side, there are awareness generation drives including the NGOs, Media and National Tobacco Control Cell. Use of tobacco among juvenile is tired to be checked by School Health Programme and further the real prices of tobacco and its product are raised by increasing taxes.

On the supply side, laws such as Cigarettes and other Tobacco Product (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, (COTPA), 2003 have been enforced. Alternative cropping policies are being suggested to farmers, and vendor licenses for tobacco shops, are efforts to curb the use tobacco.

It is rightly said, "supply creates its own demand". So inspite of all these efforts there is one tobacco related death every 6 seconds, which will sum up to 10 million deaths annually by 2030. Inspite of this alarming figure the Government is reluctant to put a total ban on, processing and manufacturing of tobacco products.

This article evaluates the cost and benefit of tobacco production in India and indicates whether production of tobacco is worthwhile, or it ought to be banned like other narcotics. This is a sincere effort further, to suggest viable strategies to our policy makers to curb the menace of rising cases of morbidity attributable to use of tobacco product. This article may be worth wadding the flume in the research field in this area.

Index Terms - Preternatural, potential, derivatives, pharmaceutical, exchequer, processing, manufacturing, exchequer, detrimental, deforestation, non-biodegradable awareness, reluctant evaluates, morbidity, wadding.

INTRODUCTION

Tobacco (Nicotiana tabacum) is a drought tolerant, hardy and short duration crop which can be grown on soils where other crops cannot be cultivated profitably in India. Even worldwide, tobacco is considered as one of the most frugal and consequential crops. In India a variety of Flue-cured Virginia(FCV) and different types of non-FCV tobacco is produced under diverse agro-ecological situations spread all over the nation. The significance of tobacco in Indian agrarian economy can be easily understood by the fact that 15 states in India grow tobacco.

Tobacco provides livelihood to 36 million people comprising 6 million farmers and 20 million farm labour engaged in tobacco farming and 10 million involved in processing, manufacturing and experts of the said crop. Bidi rolling alone provides employment to 4.4 million people and 2.2 million tribals are involved in tendu leaf collection. The main beneficiaries are the small and marginal farmers, rural women, tribal youth and the weaker sections of the society. As per central Tobacco Research Institute, tobacco annually contributes, RS. 4,400 crores towards foreign exchange earnings accounting for 4% of the country's total agri-exports and RS. 14,000 crores to excise revenue which is more than 10% of the total excise revenue collected from all sources. India is the second largest producer and exporter of tobacco next to Brazil. During the past five years, exports of tobacco and tobacco products increased by 76% in terms of quantity and 209% in terms of value. Flue-cured Virginia, bidi, hookah, chewing, cigarwrapper, cheroot, burley, oriental, HDBRG, Lanka, Pikka, Natu, Motihari, Jati etc. are the different types of tobacco grown in the country of which FCV, Burley and oriental tobacco are the major exportable varieties. Studies carried out by CTRI indicate potential use of tobacco plant as a source of protein, edible oil, nicotine sulphate, low- calorie sweetener and solanesol. Tobacco derivatives are used in pharmaceutical, oil, paint, soap and chemical industries, extracting nicotine derivatives and nicotine products like nicotine sulphate (used as insecticide), nicotine hydrogen tartarate, nicotine bi-tartarate, nicotine salicylate and nicotine hydrochloride.

PRETERNATURAL PRODUCT

Tobacco is scrutinized as a preternatural product because of its significance as an important agricultural crop by the Ministry of Agriculture. The commerce ministry regards it as the source of revenue. The Labour Ministry regards it as source of livelihood and last but not the least the Health Ministry considers tobacco as a cause of major public health problems.

TOBACCO USE AMONG YOUTH

14.6% of the youth aged (13-15) years consume tobacco in some form or the other (GYTS-2009) More than 5500 children/ adolescents start tobacco

consumption daily (Indian Journal of Pediatrics 1999; 66: 817-824). Average age of initiation of tobacco use was 17.8 years with 25.8% of females starting its use before the age of 15 years. (GYTS -2009).

TOBACCO AS A CAUSE OF MAJOR PUBLIC HEALTH PROBLEM

Tobacco is the legal consumer product that kills half of its users when used. Tobacco product contains around 5000 toxic substances. Most important and dangerous constituents are nicotine, a poisonous substance that leads to addiction. Carbon Monoxide reduces the amount of oxygen blood can carry and causes shortness of breath. Tar is a sticky residue containing benzoprene, one of the deadliest cancer causing agents known, other compounds are carbon dioxide, nitrogen oxides, ammonia, nitrosamines, hydrogen cyanide, volatile sulphur compound, containing volatile hydrocarbons, alcohols, aldehydes, and ketones. Some of these compounds are known to cause cancers of various organs of body.

CONSEQUENCES OF TOBACCO USE

Tobacco is considered as a major factor for noncommunicable disease one of the leading causes of death. Manufacturing, packaging and transportation cause environmental pollution. Apart from cultivation of which forests are destroyed.

1. Cancers associated with tobacco:-

Tobacco is associated with cancer of respiratory tract, lungs, upper gastrointestinal tract, liver, pancreas, kidney, urinary bladder, oral cavity, nasal cavity, cervix, etc.

- 2. cardiovascular diseases :-
- a. Stroke is vascular disease of the brain where tobacco either constricts the blood vessels or rupture, leading to loss of consciousness and paralysis.
- b. Tobacco affects coronary vessels of the heart leading to decrease of blood supply or death of heart muscles which is known as ischemic or coronary heart disease, causing cardiac arrest.
- Smoking acts synergistically with other risk factors like high cholesterol and blood pressure to increase the risk of coronary heart disease (CHD).

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3. respiratory diseases like Chronic Obstructive Pulmonary Disease including chronic bronchitis and emphysema, acute attacks of asthma, tuberculosis.

4. Effects on Pregnancy:

Bleeding during pregnancy, ectopic pregnancy, miscarriage, premature delivery of baby, stillbirth, abnormalities of placenta.

5. Effects on newborn and childhood:-

Maternal tobacco use during pregnancy and exposure of child to second hand smoke is known to be a risk factor for congenital malformations in baby, risks of allergies, high blood pressure, obesity, stunted growth, poor lung function, asthma.

6.Miscellaneous:-

These conditions are known to worsen due to tobacco use such as rheumatoid arthritis, kidney damage, eyedisease, dental diseases, diabetes, inflammatory bowel diseases, erectile dysfunction.

TOBACCO CONTROL POLICIES OF INDIA

Multidimensional policies are adopted in India for control of tobacco use in India some of them are :

1.Demand Reduction

- a. The National Tobacco control Program was launched by Ministry of Health and Family Welfare, Govt. of India in 2007-08 to bring about greater awareness about the harmful effects of tobacco use and Tobacco Control Laws as well to facilitate effective implementation of the Tobacco Control Laws. The National Tobacco Control Cell (NTCC) is responsible for overall policy formulation, planning, monitoring and evaluation of different activities. National level public awareness/mass media campaigns for awareness building and behavioural change are planned to be carried out.
- b. Raising real prices by increasing tax.
- c. School Health Programme constituting Tobacco Free Educational Institutions Guidelines (ToFEI).
- 2. Supply Reduction

2.Enforcement of Law such as Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and commerce, Production, supply and Distribution) Act 2003 (COTPA).

MAIN PROVISIONS OF COTPA

Section-4 Bans Smoking in Public places like hotels, restaurants, pubs, bars, workplaces, railways stations, airports, cinema halls, malls, stadium, auditorium etc. Section-5 Prohibits, advertisement, sponsorship and promotion of tobacco products.

Section-6a Prohibits sale of tobacco products to minors.

Section -6b Prohibits, sale of tobacco products near educational institutions.

Section -7 Bans sale of tobacco products without pack warnings. Inspite of the efforts from Government to minimise the use of tobacco products the use tobacco products the use of tobacco is increasing and according to the World Health Organisation estimates, there is one tobacco related death every 6 seconds which will amount to 10 million annual deaths by 2030 and take a toll of one Billion deaths in 21st Century in India.

ECONOMICS COSTS OF DISEASES AND DEATHS DUE TO TOBACCO USE

According to the study by World Health Organisation (WHO) the Economic cost attributable to tobacco use from all diseases and deaths between 2017 and 2018 for persons above 35 years was USD 27.5 billion (INR 1773.4 billion). Tax revenue from tobacco in 2016 -17 was 12.2% of its economic costs. For every Rs. 100 received as excise taxes from tobacco products, Indian Economy loses Rs. 816.

This article critically analyses the efficacy of tobacco control measures of the Govt., calculates cost and benefit of tobacco production in India and suggests strategies for effective tobacco control in India, which may help our policy makers in formulating effective policies that may curb the tobacco use in India and save our valuable human resources.

This article aims to weigh the costs of tobacco production and benefits to find whether the production of tobacco is worth practicing or not.

The costs of production of tobacco will include the money cost of production as well as costs to the environment and total economic costs attributable to tobacco use from all diseases and deaths. The benefit will of course measure the sum of the money value to of tobacco as a final product.

The purpose of this article is to indicate whether production of tobacco is worthwhile or should its production be banned to cap the supply side of tobacco in India, like it is for other types of narcotics.

This article will thus end up evaluating whether tobacco is even worth producing or not. Lastly, it will sum up by suggesting possible viable strategies to our decision makers, so that they can take proper steps to curb the menace of rising cases of morbidity attributable to use of tobacco product. This article is an ingenuous exertion to fill the gap of research in the direction of tobacco control.

LITERATURE REVIEW

Several articles akin to tobacco control are available both domestic as well as globally, but very few articles studies and reflects the economics of tobacco control in India.

1. Case study of tobacco cultivation and alternative crops in India.

Dr. Vinayak M Prasad Feb 2022

Director (Public Health), Ministry of Health & Family welfare

Study conducted as a technical document for the first meeting of the Ad HOC study Group on Alternative Crops established by the conference of the Parties to the WHO Framework Convention on Tobacco Control.

It suggested the alternative crops to tobacco over different regions in India and the cost of production of tobacco and its selling price in comparison to other alternative crops. The study hardly suggests strategies to control tobacco consumption. It focuses on supply side of the problem and does not deal with the demand side of tobacco use.

 Economic costs of Disease and Deaths Attributable to Tobacco use in India, 2017-18.
 Rio M John, Praveen Sinha, Vineet Gill Munish, Fikru

T Tullu 2021 Jan 22, 23(2): 294-301, doi:

10.1093/ntr/ntaa154.

Oxford University Press.

The article estimates economic burden of deaths and diseases attributable to smoking and smokeless tobacco used for persons aged \geq 35 years. Its Methods were data from the National Sample Survey data on health care expenditure, the Global Adult Tobacco Survey Data on tobacco use prevalence and relative risks of all cause mortality from tobacco use were used to estimate the economic burden of diseases and

deaths attributable to tobacco use in India, using a prevalence-based attributable risk-approach. Costs were estimated under the heads of 1) direct medical and non-medical expenditure; 2) Indirect morbidity costs and 3) indirect mortality costs of premature deaths. It estimated the said cost to INR 1773.4 billion(US\$27.5 billion) of which 22% is direct and 78% indirect cost. It concluded to suggest massive scaling up of tobacco control efforts in India. But it was silent upon the efforts needed or strategies to control efforts in India.

 Economics of Tobacco and Its Alternative Crops in Nellore and Prakasam Districts of Andhra Pradesh.

Krishna TejaIndurupalli

- S. Rajeshwari Impact Journals
- J. Bhavani Devi Vol.4, Issue 10
- B. Ravindra Reddy October 2016, 115-112.

The article investigates the economics of tobacco and its alternative crops in Andhra Pradesh. It selects Nellore and Prakasam districts where tobacco is grown extensively. 156 tobacco farmers and 78 non-tobacco farmers were surveyed using a pre-tested schedule adopting a multistage random sampling. Primary data collected was pertained to agricultural year 2013-14. Cost viz. bengalgram, redgram and paddy were worked out per hectare and presented in tables.

Cost of cultivation per hectare of FCV tobacco was Rs. 1,16,918 followed by paddy Rs. 63,992 bengalgram (Rs. 53,942) and redgram (Rs. 41,672). Gross return per hectare for said crops were (Rs 1,47,000) for tobacco, followed by paddy (Rs. 78,000), bengalgram (60,112) and redgram (Rs. 52,146). Net returns from the said crops were Rs. 30,081, for FCV tobacco followed by bengalgram, paddy and redgram i.e., 14,007, Rs 10,473 and Rs. 6,170 respectively. FCV tobacco was observed as more profitable and the next best alternate crop was paddy in irrigated conditions and bengalgram in non-irrigated conditions. No doubt, this article reflects that cultivation of tobacco is more profitable for farmers but it hardly talks about the economic burden pertaining to deaths and diseases due to use of tobacco, so that the real economics of tobacco cultivation may be estimated.

METHODOLOGY

Literature reviews, data and information from CTRI, various websites, news reports, Govt. of India Health Reports etc. were studied to carve out the secondary data required for the cost and benefit of tobacco production in monetary terms. Analysis of tobacco cultivation and its economic burden due to deaths and diseases were studied to reach a conclusion on the economics of tobacco cultivation in India.

The Economics of Tobacco Control in India and the Effective Strategies to Control its Use.

Tobacco (Nicotiana tabacum) is a preternatural product as it is considered as one of the most profitable cash crop. Owing to its profitability, its cultivation is spread over 15 states in India. Studies carried out by Central Tobacco Research Institute (CTRI), indicate the implicit use of tobacco plant as source of protein, edible oil, nicotine sulphate, low-calorie sweetener and solanesol. Derivative of tobacco are utilized in pharmaceutical oil, paint, soap and chemical industries. Further it is a source of nicotine derivatives and nicotine product like nicotine sulphate (used as insecticides), nicotine hydrogen tartarate, nicotine binicotine salicylate and nicotine tartarate. hydrochloride. Moreover, tobacco and its derivatives are a robust cradle of tax proceeds to the government exchequer, and the entire production to processing to distribution chain of tobacco and its derivative to final consumption goods extend livelihood to 36 million people, comprising 6 million farmers, 20 million farm labours and 10 million engaged in processing to manufacturing of tobacco, contributing INR 4400 crores towards foreign exchange earnings alone.

Contribution of Tobacco towards Indian Economy : Economic Contribution :

In its latest study on economic aspect of tobacco, industry chamber ASSOCHAM has found that the sector contributes a whopping Rs. 11,79,498 crore to Indian Economy and employs an estimated 4.57 crore people.

Total Cost of Tobacco Production in India:

The total cost of tobacco production in India includes the following:

A.The Economic Costs of disease and deaths attributable to tobacco use in India includes the following:-

- 1. Direct medical costs due to tobacco attributable diseases amounted to INR 37,344 crores annually.
- Direct non-medical costs amounted to INR 1364 crores annually.
- The lost income for households due to hospitalization and hospital visits amounted to INR 6181 crores annually.
- 4. Cost from premature death due to tobacco related diseases was estimated at INR 1,32, 452 crores annually.
- 5. Cleaning up littered tobacco products costs India INR 6128 crores annually.

B.Ecological and Environmental costs of Tobacco production and its use includes the following:

- 1. Environmental implications of tobacco like clearing of forests, consumption of fuel wood in various production stages, water demand in drylands, excessive use of fertilizers and pesticides, large quantities of waste in form of tobacco slurries, solvents, oils and greases, paper, wood, plastic, packing materials and air pollution. Environmental costs, if incorporated into cost of manufacturing the product would increase the price of raw tobacco by 20% and finished product by 40%.
- Deforestation is caused due to caused due to clearing of forest for cultivation of tobacco, fuel wood from forests for curing tobacco product and forest resources used for packing of tobacco products.
- Soil erosion and degradation such as depletion of soil nutrients, causing loss of 45 kg of top soil on every acre per annum, loss of selective nutrients and organic matter makes soil prone to rapid erosion
- 4. Biodiversity Losses due to plantation of tobacco for successive seasons is deleterious to local biodiversity, thereby making the ecosystem quite fragile. Displacement of indigenous flora and fauna against tobacco cultivation leads to the local evanesce of several flora and fauna, thereby causing collapse of food web.

C.Social Cost of Tobacco includes use of child labour, exploitation of hired labours, female workers in factories, psychological trauma on the children of demised or morbid parents affected by diseases related to tobacco use. If converted into monetary terms it

amounts to 20% of the monetary cost of cultivation of tobacco.

D.Monetary Cost of Production of Tobacco:-

Tobacco is a cash crop, which is grown in 0.4 million hectares of land which amounts to 0.27% of net cultivated area in India Its annual production is 700 million kg, which stages India as the third largest producer of tobacco in the world, only next to China and Brazil who are the first and second largest in the world respectively.

Per hectare cost of cultivation of tobacco crop in (Anand Zone) for the year 2011-12 was Rs.49.670. If this cost is taken to be true for all regions.

Then, cost of cultivation of tobacco in 0.4 million hectares will amount to:

 $0.4 \times 1000,000$ hectares = 400000 hectares is equal to 4,00,000 hectares× Rs.49,670

= Rs. 1986,80,00,000 = Rs. 1986.8 crores

If total cost of production of tobacco is calculated : i.e. (A+B+C+D) Then in monetary terms annually, they amount to :-

Cost of (A) = 1+2+3+4+5

= Rs. (37,344 crores + 1364 crores + 6181 crores + 1,32,452 crores + 6128 crores)

= Rs. 1.83,469 crores.

Cost of (B) = 20% of the cost of cultivation of tobacco = 20% of (D)

= 20% of Rs. 1986.8 crores = Rs.397.36 crores.

Cost of C = 20% of the cost of cultivation of tobacco

= 20% of D

= 20% of Rs. 1986.8 crores = Rs. 397.36 crores.

Cost of D = Rs. 1986.8 crores.

Thus, total cost of production of tobacco converted into monetary terms amounts annually to:

Cost of A+B+C+D will amount to:

Cost of A = Rs. 1,83,469 crores

Cost of B = Rs. 397.36 crores

Cost of C = Rs. 397.36 crores

Cost of D = Rs. 1986.80 crores

Total Cost = Rs. 1,86,250.52 crores.

According to ASSOCHAM, the tobacco sector contributed Rs 11,79,498 crores annually to the Indian Economy.

Thus, total profit to the Indian Economy from production of tobacco and its products amounts to total contribution of tobacco sector to the Indian Economy subtracted by the total cost of production of tobacco in India (in monetary terms)

= Rs. 11,79,498.00 crores

- Rs. 1,86,250.52 crores

Net Profit = Rs. 9,93,247.48 crores annually.

From the analysis of the economics of tobacco, it is clear that, inspite of the fact of tobacco being a unique legal consumer product that kills half of its users when used. It is the only product that causes 150 deaths per 20 minutes in India, the Indian Government is most unlikely to curb the production of tobacco and its products from the supply side. The rueful truth is that no government in this world, which has some economic acumen, would be ready to sacrifice a whopping 9.93 thousand crores annually compromise a livelihood of 4.57 crores people. When it comes to a democratically elected government, again, no government with political astuteness would take a decision which may axe its vote dynamics. So the elapse inference is that the cultivation of tobacco and manufacture of its products will not be execrated in India.

Being a welfare Government what it will try to do and is in fact, best in doing or rather is capable of doing is to mitigate the demand side of tobacco by social awareness, advertisement, and framing laws.

Effective Strategies to control the Use of Tobacco:-The effective strategies to control the use of tobacco and its product are as follows:-

- a. Fiscal Strategies:-Fiscal strategies to curb the use of tobacco and its product should include greater intendance of tobacco products such as increasing taxes on tobacco and its production in all its stages on annual basis which may make tobacco products costlier and hence unaffordable to its consumers.
- Non- Fiscal Strategies:- Some of the non-fiscal strategies to mitigate the use of tobacco in any of its forms are as follows.
- Boosted investment in National Tobacco controls
 Programme (NTCP) so that its role and
 responsibilities may not be compromised due to
 dearth of funds.
- Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003, (COTPA), should be made more effective by proper supervision and

- monitoring the implementation of its Acts and Sections at the grass root level.
- 3. Alternative cropping to tobacco should be profusely encouraged by providing agricultural subsidies to its alternate crops such as pulses, coarse cereals, groundnuts etc.
- Making Vendor License Mandatory for all retail outlets of tobacco and its products, so that the retail shops may come under direct scanner of the government agencies.
- 5. In order to dwindle, the area under cultivation of tobacco progressively, successful reposition from tobacco cultivation to other volition lucrative activities requires provisions of technical, scientific research and development, capacity building, promotion of community participation along with financial support specially in the transition period.
- 6. For promotion of the principles of sustainable development, eradication of poverty, accentuating the capability of cultivators to tend natural resources sustainably, with less hostile environmental impact. Policies ought to be chalked out which are economically and environmentally sustainable, volition subsistence be comprehensive, multi-sectoral and consistent.
- Farming Rational Public Health Policies that are inclusive and identifies the risks involved with tobacco use and mitigate them by all possible precautionary and remunerative ways.
- 8. Replacing the fatal product with ones that may be fairish to the consumers with reduced health risks.
- Finding out and publicising the use of nicotine that can be delivered in ways which are more passable to human body with least health risks.
- 10. Formulation of draconian laws to prohibit the sale of tobacco products to minors.
- 11. Boosted educational efforts like including separate chapters or even subjects regarding the ill effects of tobacco.

CONCLUSION

Tobacco is a unique product that is bountiful for the country's economic health but a scourge for the human resource of India. The rueful truth is that inspite of being a welfare government, the bounty behind the supply side of tobacco products is so high that its vice on human health is highly outweighed, when it comes

to the contribution to the government's exchequer. Moreover the very disease cancer and its treatment right from diagnosis to hospitalization to medication is a huge profitable industry in the country. The votebank dynamics go against curbing the supply side of tobacco. What is left as an option on the side of Indian government is to apply its wit to scavenge the ways to curb the demand side of tobacco product, which will serve the twin purposes of saving its face as a welfare government and won't hurt its exchequer as well. For the Indian masses the best option is to adopt the principle of prevention is better than cure', when it comes to the consumptions of tobacco products.

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