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Paper

**Multisectoral and Intersectoral Approach to National
Tobacco Control**

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The magnitude of global tobacco epidemic has tremendously increased since 1950s, despite of wide reading and acknowledgement of the mounting evidence of the association of tobacco use with more than 25 diseases¹. Tobacco is responsible for death of an estimated 3.5 to 4 million persons each year. However, frightening are the projections for the decade 2020-2030, when it is expected to kill about 10 million people annually. About 70% of these deaths would occur in developing countries, where the epidemic is currently on the increase and where the efforts for its control are not optimal. Despite of clear description and understanding of modalities for tobacco control, more than one billion people around the world use tobacco and this will continue to increase due to increase in third world population, poor knowledge of health risks in many populations, increased prevalence of tobacco use, intensive marketing by transnational tobacco companies, poor funding for control programmes and difficulties in implementation.

Although the important role of sectors other than health has been realized for a long time, the tobacco control has largely been restricted to a public health initiative. Over the 20th century, tobacco production has seen tremendous systematic growth. This has resulted in a complex relationship and dependence between the tobacco growers, processors, product manufacturers, transporters, traders, advertising agencies, users and the regulatory authorities like agriculture experts, governments, etc. (Fig. 1). These sectors considered the immediate economic effect as positive contribution to the society. On the other hand, the delayed health effects were given a backseat with health sector struggling to manage the ever increasing load of patients of tobacco related diseases. While health sector tried various modalities for tobacco control, tobacco manufacturers adopted various measures for promotion of tobacco use, often with active support of sectors other than health. The lobbying by tobacco industry has resulted in conflict between objectives of different sectors connected with tobacco. Although, the argument of health sector regarding tobacco's role in increased morbidity and mortality is quietly accepted by all, agricultural experts continue to improve the yield of tobacco and provide facilities to growers; commerce and trade sector continuously harps on the economic contribution by tobacco; mass media does not wish to loose its earnings by banning tobacco advertisements; and educational institutions often express inability to provide wider coverage on tobacco education on account of already heavy curriculum. Clearly, the priority of different sectors is limited to the boundaries of their respective expertise, and the need for a social change and action for tobacco control as a social cause has not been realized by them.

Fig. 1

Multisectoral Connections of Tobacco

Tobacco Industry	Other Connected Industries	Tobacco Trade
Farmers	Paper	Wholesalers
Agriculture Labourers	Tendu Leaf	Retailers
Fertilizers	Arecanut	Sales Managers
Irrigation	Match Box	
Tobacco Nurseries	Cigarette Lighter	
Tobacco Curing	Advertising Media	
Tobacco Processors	Transportation	
Tendu Leaf Collector	Health Services	
Bidi Rollers	Welfare Services	
Betel Leaf Growers	Revenue Agencies	
Tobacco Factories	Customs & Excise	
	Trade & Commerce	
	Consumer Affairs	
	Labour	
	International Trade	
	Law & Justice	
	Education	
	Environment	

Global Concern and Initiatives for Intersectoral Approach for Tobacco Control

There have been some good collaborative efforts between health and other sectors on tobacco control. Educational efforts through mass media are an excellent example of intersectoral activity for tobacco control. In some developed countries, no other health topic has received consistent and diverse media coverage². In USA, after the Fairness Doctrine in 1960s, the Public Service Announcements on tobacco had high frequency, extended reach and long duration, but later were reduced to smaller number of spots often at odd times, due to increased competition from other areas and consideration of the issue as old by the media managers. This resulted in more anti-tobacco messages being transmitted as paid advertisements rather than as collaborative activities between sectors. Anti-tobacco awareness through educational institutions has also been a successful example of intersectoral and even multisectoral collaboration (also involving mass media) in some countries. Multisectoral approach adopted in

Bangladesh for substitution of tobacco crop (described elsewhere) involved religion, education, health and other social set ups.

Collaboration with sectors like agriculture and commerce has been at the other end of the spectrum, where any major tobacco control activities by health sector has often been resisted. These sectors have actually been using taxpayers' money to subsidize the tobacco industry, in developed as well as in developing countries³. Law sector requires a special mention. Its role cuts across most of the strategies for tobacco control. Through appropriate legislation, it can not only control tobacco usage by the community, but also would indicate the policy direction of the government and create a positive social environment for tobacco control.

World Health Organization (WHO), since its inception recognized the importance of intersectoral action in health protection and included this aspect in its constitution. The concern on tobacco is reflected by adoption of resolutions by World Health Assembly on national and international tobacco control measures. The resolutions call on member states to implement comprehensive tobacco control strategies, including actions related to protection of non-smokers, educational efforts, elimination of social & behavioural incentives promoting tobacco use, prominent warnings on tobacco products, promotion of viable economic alternatives to tobacco production, etc. Intersectoral action for health was also an important component in achieving the goal of "Health for All by the Year 2000 AD". The need for intersectoral action in health has been emphasized in many conferences⁴. Intersectoral Action for Health (IAH) was established at WHO headquarter in 1996 in support of the renewal of the policy of "Health for All in the 21st Century". Intersectoral work in health (including tobacco) at the local, national, and global level was extensively reviewed^{5,6}. This background work provided a frame of reference for the International conference on "Intersectoral Action for Health", in Canada in 1997. This conference defined intersectoral action for health as "a recognized relationship between part or parts of the health sector with part or parts of another sector which has been formed to take action on an issue to achieve health outcomes (or intermediate health outcomes) in a way that is more effective, efficient or sustainable than could be achieved by the health sector acting alone"⁷. On the basis of current experience and research in various fields, including reduction of tobacco use, the conference validated the partnership approach and recommended that the success must continue to be documented and analysed more systematically to determine what works under which political, social and cultural conditions. Benchmarks and best practices must be established (including measurements and evaluation models) and the results communicated better and more widely. The experts felt that analytical framework and tools are needed for more quantitative indicators, instead of reliance on anecdotal descriptive accounts.

International health community has recognized that tobacco control efforts must come from all sectors and a partial solution to this problem is not enough. The key elements for tobacco control recommended by World Health Assembly, for comprehensive tobacco control programmes include measures from various sectors, such as, health, finance & treasury, customs & excise, trade & commerce, consumer affairs, agriculture, external affairs & international trade, law & justice, labour, transport & public service, education, environment, defense, culture & sports, and religion (WHO Fact Sheet No. 159. Governments for a tobacco-Free World. May 1998).

Religion is a comparative arena for collaborative work on tobacco control. As most religions preach promotion of healthy lifestyle and religious preaching have a tremendous following, tobacco control efforts through religious organizations is likely to be effective. Despite of moral injunction underlying almost all religion, most representatives of institutional religions have been relatively silent on issue of investments on tobacco⁸. Potential of religion in tobacco control is increasingly being realized during the recent years. It is probable that the ancient scriptures from various religions may not mention about tobacco, as the substance was probably not known at that time. However, tobacco use is prohibited among Sikhs on account of religious sanctions. Discussions during the WHO meeting on Tobacco and Religion⁹ in 1999, indicated that most religions would promote healthy lifestyle and tobacco use would not be compatible with religious preaching and therefore, religious communities have a significant role to play in tobacco control. The meeting recommended collaborations with religious organizations on evidence-based education programmes.

Increasing use of tobacco products in any society would result in greater social acceptance of the tobacco use. While health sector people may be more enlightened about the health hazards of tobacco and may have actually seen the patients' suffering due to tobacco related diseases, other sectors although aware of the hazards, may not perceive it as a real threat due to its social acceptance. Also due to the common observation of frequent use of tobacco product, they may conceive it as an uphill task and often a utopian dream. Thus, many sectors other than health, agree with the health hazards due to tobacco and the need for its control, but lack a drive to carry out intervention programme as an activity of their own. Often such collaboration would turn out to be short-term passive actions by these agencies. A greater interaction between different sectors, the understanding of the problem, and comprehensive planning and execution by all the concerned sectors, seems to be the only practical strategy for an effective and long-term control of tobacco. The attempt in this communication is to identify the role and scope of intersectoral and multisectoral approach for tobacco control, with specific examples from India on past efforts as well on scope for future collaboration. Law sector does not find its mention in the specific strategies, because when these strategies get implemented,

often a legislative change has already taken place. Therefore, interaction of law with other concerned sectors is extremely important before as well as after the promulgation of any legislation for its appropriate framing and implementation.

Indian Experience on Multisectoral and Intersectoral Collaboration in Tobacco Control

Like many other countries, India also faces a conflict of objectives of various sectors connected with tobacco¹⁰. The Ministry of Health & Family Welfare is convinced about the need for tobacco control measures, and has taken many administrative steps for reduction of tobacco use. However, other sectors in view of their mandate have often resisted some of tobacco control actions or have actually been working for promotion of tobacco use. The Directorate of Tobacco Development, in collaboration with State Departments of Agriculture, primarily aims at planning, coordinating and supervising development and marketing programmes of tobacco at national level. The Indian Tobacco Development Council, constituted in 1966, serves as an advisory body for this purpose. This Directorate is implementing programmes on production and distribution of pure seeds and seedlings of tobacco, and on training in improved methods of tobacco cultivation to the farmers. The Central Tobacco Research Institute is conducting research on improving the yield and quality of tobacco. A multicentre project by Indian Council of Agricultural Research helps in agronomy, plant breeding, soil chemistry entomology and plant pathology, as related to tobacco. The main functions of Tobacco Board, constituted in 1976 are, regulation of production of Virginia tobacco, ensuring fair and remunerative prices to the growers, maintenance & improvement of existing markets, and development of new markets for Indian tobacco outside the country. While the Tobacco Board is concentrating on Virginia tobacco, the interests of non-Virginia tobacco are being looked after since 1983, by the National Cooperative Tobacco Growers Federation Limited.

Agriculture is not the only sector in India that resists major tobacco control initiatives. The labour sector points out the prospect of millions of bidi rollers losing their job due to major tobacco control actions, the upheaval in unemployment among farmers is expressed by agriculture sector, and the prospect of reduced revenue in slow economic conditions is not considered practical by the financial sector. While there have been dialogues between health and other sectors on tobacco control measures, there has been a limited progress towards development of a concerted programme for tobacco control and for development of a national policy on tobacco.

The need for intersectoral and multisectoral collaboration for tobacco control in India has been realized for more than a decade. Realizing the potential of educational institutions, the

Indian Council of Medical Research (ICMR) carried out a research project in Goa, from 1986 to 1992, on anti-tobacco community education through school children. The project tested the feasibility and efficacy of educating school children in empowering them for non-initiation of tobacco use and the effect of this education on the tobacco use prevalence in the community, through children-parent interaction. The prevalence rates of tobacco habit were determined through baseline survey, mid-term survey and a final community survey. The overall reduction in the prevalence of tobacco usage among men was 11.8% & 13.4% in two experimental areas and 2.0% in control area. Decrease in prevalence of tobacco use among women was 9.1% and 13.3% in two experimental areas and 10.2% in control area. Based on the experience of this project, Ministry of Education, Goa, agreed to include an 8 hour course on tobacco as a part of co-curricular activities for standard five and above.

Agricultural experts participated in a workshop organized by health sector on tobacco and health in 1987, and presented their experiences on alternate substitutes of tobacco by other crops and alternate uses of bidi tobacco¹¹. Comparison of net realization from tobacco in Gujarat with other crops grown in Middle Gujarat revealed that irrigated castor and irrigated cotton fetched better per hectare profit than tobacco. Rotation of tobacco crop with other crops also provides more remuneration than producing only tobacco crop in the field. The anticipated problems in substitution of tobacco with other crops included, advantage of tobacco crop against theft and stray cattle; specialized facilities created for tobacco processing which can not be used for any other crops; increased chances of pesticide residues with other crops; the difficulties of finding a substitute crop in rain-fed area in view of the drought resistant nature of tobacco crop; and the dependency of millions of people on bidi rolling and tendu leaf collection. Alternate uses of bidi tobacco included extraction of nicotine sulphate to be used as pesticide in orchards; pharmaceutical grade organic acids and solanesol; food grade tobacco leaf protein; and pentosans for production of ferfural, an industrial solvent.

During an ICMR meeting on tobacco related health hazards in 1989, agriculture experts informed that technology for lowering the tar and nicotine levels in tobacco did exist in the country. The newly developed technique of bright air curing would decrease the problem of deforestation. The tobacco crop can also be used for production of vegetable oils. More remunerative alternate crops did exist in different areas, but excess production of these crops was likely to bring down their prices, thus, rendering them non-remunerative.

A major success in intersectoral approach for tobacco control was the collaborative project between ICMR and All India Radio, the state owned and only radio network in India. The acronym DATE stood for Drugs, Alcohol, and Tobacco Education. The radio programme was in the form of 30 weekly episodes of 20 minutes each. Ten episodes focussed on tobacco, eight

each on alcohol and drugs, and two episodes on legal aspects¹². The introductory and concluding episodes touched all the three themes. The episodes were broadcast from 84 stations of All India Radio (out of 104 existing at that time) at prime time, simultaneously in sixteen languages. The Hindi prototype was sent to selected radio stations of All India Radio for translation in regional language, as per the specified guidelines. The broadcast was during a specified time (between 8.00 A.M. and 9.00 A.M. on Sundays, with a repeat broadcast during the week, generally in the evening). The reach and effect of the tobacco component of the programme was evaluated through two community based surveys, carried out after the broadcast of tobacco episodes (which was the first topic to be covered), in areas not having any organized anti-tobacco programmes. The surveys showed that the potential listeners of radio comprised 80.4% of the population in Goa and 59.1% of the population in Karnataka. In Karnataka 31.6% of the potential listeners and in Goa 26.7% of the potential listeners, heard at least one of the first eleven episodes (on tobacco). Most of the listeners considered the programme to be very good or good, and felt that it would have effect on the tobacco users to quit their habit as well as on children to prevent the initiation of habit. About 4% tobacco users in Goa and about 6% users in Karnataka quit their habit after hearing the programme. About 98% to 99% of the listeners expressed that such programmes should continue.

The major impetus for multisectoral approach for tobacco control occurred in 1995, with submission of the twenty second report of the Indian Parliament's committee on sub-ordinate legislation (Tenth Lok Sabha), the recommendations of which have also been briefly reported by Chaudhry & Unnikrishnan¹³. The committee consisted of Members of Parliament and considered the information and views of various ministries, departments, experts and unions/ associations, connected with tobacco control as well as tobacco promotion. Considering the issue of tobacco in totality, the committee made wide-ranging recommendations, including, strong & rotatory warning in regional languages on tobacco products; ban on direct as well as indirect advertisements of tobacco products; prohibition of smoking in public places; initiation of measures for awareness on tobacco through health infrastructure, educational institutions and mass media; and initiation of efforts for persuasion of farmers to switch over to alternate crops. The recommendations of Parliament's committee, although not binding on the government, are considered in high esteem and the government makes efforts towards their implementation. The subsequently heightened "political and bureaucratic will" on tobacco control did see some actions from various ministries/ departments on tobacco control. The Ministry of Agriculture requested major tobacco growing states to consider actions for reduction in production of non-FCV tobacco. Efforts were initiated in the states of Andhra Pradesh, Tamil Nadu, Orissa and Karnataka. The Department of Agriculture and Cooperation and Indian Council of Agriculture Research in a joint meeting decided to explore the potential of alternative crops like, medicinal plants, soybean, sugar cane, waxy type maize, oil palm, vegetables, etc. It was considered that

the schemes for assistance to tobacco system should be discontinued. Research efforts should concentrate on development of low-tar low-nicotine FCV tobacco crop, and on alternate uses of tobacco. A scheme be chalked out for weaning away of farmers from cultivation of non-FCV tobacco. Follow up discussion on implementation of these recommendations with various concerned ministries showed that various concerned sectors are conducive to drastic measures for tobacco control, but also pointed out their fallout on Indian economy and trade.

The Government of India realizes that the problem of tobacco in India is complex in view of varied nature of tobacco use, many sectors being unorganized and under control of different agencies. The control of tobacco can effectively be carried out, only with a multisectoral approach involving various concerned sectors. A number of meetings have been organized between health and other sectors to impress upon the urgent need for tobacco control in the country and to find out effective modalities in different sectors for this purpose. Strategies for different sectors are being identified for effective tobacco control in the community, which would help in planning the national strategy for tobacco control in India during the new millennium. Workshops on tobacco control are proposed for sectors other than health to stimulate them for undertaking control programmes as an activity of their own. While major breakthroughs in multisectoral approach for tobacco control have not yet been achieved in India, it is likely that the background efforts made in this direction during the last few years would yield good dividends in the form of different sectors taking the issue of tobacco control as a social responsibility and not merely endorsing the actions by the health sector.

Major Modalities of Tobacco Control and Scope for Multisectoral and Intersectoral Approach

Government Policy on Tobacco

Like in many other countries, India is also facing a paradox, wherein some government agencies are working towards promotion of tobacco, while other departments are working for control of tobacco use. It is important that the government considers the priorities and takes a policy decision for unified direction of working for control of tobacco use. Generation of such "political will" may seriously open the possibility of consideration of the most crucial but so far neglected issue of crop substitution. Availability of a policy framework is likely to help in promulgation of legislations, which is an important tool for tobacco control. Legislation may not only force people to reduce or quit their tobacco use, it can also help in creation of a social environment, wherein tobacco use would be considered as a deviant behaviour. Such a situation would be useful for achieving the goal of a "Tobacco Free Society".

Generally, it is believed by the scientists that the money spent for the treatment of tobacco related diseases is much more than the revenue generated by tobacco. In order to collect authentic figures on it, the ICMR initiated a project for studying the tobacco economics in the country. Under the project, the data on cost of management of tobacco related diseases, is being collected. The information on tobacco economics and the education of politicians and administrators is likely to increase their will to initiate more anti-tobacco activities.

However, in view of the contradictory objectives of different sectors, a policy decision on tobacco would not be easy. The policy-makers in different sectors are also influenced by the societal norms related to tobacco. A regular interaction and discussion of issue between sectors is important to enable them to identify the enormous magnitude of the diseases associated with tobacco use, get convinced about the need to take drastic actions, search and plan strategies for tobacco control related to their area of expertise and execute the plans as their social and humanitarian duty.

Economics of Tobacco

An often-quoted reason for governmental inertia in taking strict tobacco control actions is the economic implications of tobacco use. The direct expenditure on treatment of tobacco related diseases and as well as its indirect cost, both are to be considered while calculating the costs due to tobacco¹⁴. It would however, be useful to consider the economics of tobacco from the point of view of merit and demerit goods, which means that any revenue or income related to unacceptable products should also be considered as unacceptable to the society, irrespective of the quantum of its contribution to the economy. The studies on economics of tobacco generally indicate that the costs incurred by society due to tobacco use more or less match the benefits received by the society³. However, most of these studies have considered only the direct expenses on treatment of tobacco related diseases. The indirect cost of tobacco use, the ecological effects of tobacco production and use, have generally not been used in models for computation of economics of tobacco. The models have also not considered the alternate use of money by community, if it is not spent on tobacco. Similarly, the revenue provision by an alternate crop (in place of tobacco) also needs consideration in an economic model on the subject.

The studies related to economics of tobacco are important to convince the decision-makers about the need to initiate more strict measures for control of tobacco. In a review of the subject at the Indian Council of Medical Research (ICMR), it was observed that data on cost of management of tobacco related diseases were not available in India. Studies on cost of management of tobacco related cancers; coronary heart disease (CHD); and chronic obstructive lung diseases (COLD) were carried out by ICMR. The study collected data from patients of

these diseases on the expenditure incurred by them on diagnosis & treatment of their disease, expenses incurred on travel for their treatment/ diagnosis, additional expenses for lodging & food during the treatment period, loss of wages because of the disease, and expenses incurred by their relatives/ friends. The expenditure incurred by the treating institution on management of these patients was also collected. In case of premature death, the cost imposed upon the society (due to premature death) was calculated. The average cost due to a case of tobacco related cancer was observed to be Rupees 134,449 (discounted at 1990 level - the year the study began)¹⁵. The patients in the cohort spent an average of Rupees 17,965 (including loss of income due to absenteeism), with another Rupees 4,009 being contributed by the institution in the form of various services. The loss due to premature deaths of patients of tobacco related cancers amounted to Rupees 112,475. Using discounting methodology as applied in the study, the average cost of tobacco related cancers for the year 2000 would be approximately Rs. 350,000 per case. The report on cost of CHD and COLD in India is likely to be available shortly.

Taxation on Tobacco Products

Price of tobacco products vis-a-vis the income level of the community is one of the major factors influencing the extent of its use by the society. Relative variations in the price of tobacco products through increase in taxation or through changes in paying capacity of the people has one of the clearest and most immediate influences on tobacco use. In order to adjust for the two variables, real price of cigarettes (current price/ price of all goods and services) at different time periods have been compared with the consumption of cigarettes. Such comparisons in UK, Canada, and South Africa over the last 2 to 3 decades have shown counter movements of smoking with relative cigarette price¹⁶. This data indicates that if prices are increased the smoking rate declines, but it tends to increase with a decrease in price of cigarettes in comparison with the inflationary trends. Thus, a sustained increase in price, which is more than the inflation rate is necessary for the optimum effect of this measure.

The effect of price increase due to taxation is not uniform over all strata of the community. The most price sensitive smokers have been found to be women and men aged 25-60 years. Variable results have been reported from USA on effect on younger population, who generally has low incomes but a high proportion available for discretionary expenditure. In some countries low-income groups tend to smoke more, but also reduce their smoking in response to tax increase. Conversely, they are also likely to be encouraged to smoke by a reduction in real price. UK data does suggest that. Price responsiveness tends to be particularly high among people in disadvantaged circumstances, and they reduce consumption and expenditure on cigarettes in the wake of a price rise. In many societies, the price elasticity of demand for cigarettes by the adult population is around -0.5 , i.e. a tax rise which increases the price by 10% is likely to reduce smoking by 5%. However, taxation rate on other tobacco products would also

determine if sensitive people are likely to quit tobacco use or they may shift to other related products. This suggests that although increased taxation would be a good modality for tobacco control, each country would need to examine it closely in their own circumstances to develop an optimum strategy and fall outs and consequent actions indicated for other sectors.

A wide variety of tobacco products are sold in India. It is smoked in the form of bidis, cigarettes, hookah, chilum, cheroot, chutta, etc. The common forms of smokeless tobacco use include betel quid, pan masala, chewing tobacco, khaini, misher, etc. About 19% of tobacco in India is consumed in the form of cigarettes, while 53% is smoked as bidis. Remaining tobacco is used mainly in smokeless forms. Different modalities do differ in terms of quantum of tobacco per unit consumption. An average cigarette has about 1 g tobacco while an average bidi has about 0.2 to 0.25 g of tobacco. The unit quantum used for chewing purposes is also smaller than a cigarette. However, analysis shows that the levels of tar and nicotine in a bidi are comparable or higher than Indian cigarette, which in turn are higher than their levels in developed countries.

The central government tax structure on tobacco products is as complex as its available variety. Unmanufactured tobacco (which is mainly used for chewing purposes) not bearing a brand name does not have any excise duty on it. Chewing tobacco and snuff with a brand name attracts 50% excise duty (ad valorem) on it. Till the year 1994-95, 40% tax was being levied on chewing tobacco. There is no tax on cigars and cheroots. Smoking mixtures for pipes and cigarettes has a tax rate of 300% ad valorem. Bidi manufacturers producing less than 2 million pieces annually do not have to pay tax. Bidis (other than paper rolled) produced without the aid of machines needs to pay Rs. 5 per thousand pieces. Other bidi manufacturers are currently paying tax of Rs 15.5 per thousand pieces. Currently pan masala is taxed at 40% ad valorem (24% basic duty plus a special duty of 16%). Majority of tobacco taxes is from cigarettes. During the financial year 1997-98, the cigarette industry contributed an estimated Rs. 55 Billion. In 1987, the excise structure on cigarettes was changed from ad valorem to specific duty rates on the basis of length. The current excise rates applicable on filter cigarettes vary from Rs 1,470 per thousand pieces on cigarettes longer than 85 mm to Rs 550 per thousand pieces for cigarettes smaller than 70 mm (Table 1). The excise on non-filtered cigarettes is still less, being Rs 370 per thousand pieces on 60 to 70 mm long cigarettes and Rs 110 per thousand on smaller cigarettes. During the financial year 1999-2000, excise duty was increased by 10% on non-filtered cigarettes smaller than 60 mm. Taxes on all other cigarettes remained same as last financial year. Besides the excise levied by the Central Government, several States also levy luxury tax/cess on cigarettes. These rates vary from State to State.

Table 1**Central Government Excise on different types of Cigarettes in India (Rupees per thousand cigarettes)**

Financial Year	Filter Cigarettes (according to length)				Non-filter Cigarettes (according to length)	
	>85 mm	75-85 mm	70-75 mm	<70 mm	60-70 mm	<60 mm
1996-97	1,350	1,070	800	430	315	75
1997-98	1,350	1,100	820	500	350	90
1998-99	1,470	1,200	900	550	370	100
1999-2000	1,470	1,200	900	550	370	110

Studies conducted abroad indicate that taxation has an important role to play in smoking control. People in India also do seem to be affected by price variation of tobacco products. Such concerns have been expressed by many, including tobacco companies before each of the national budget presentations. Depending upon the changes in cost, apprehensions have been expressed by tobacco companies about shift of habit from one modality of tobacco use to others. In view of the differential taxation on tobacco products, people are expected more to shift to cheaper varieties of tobacco, rather than consider a reduction in tobacco use.

Micro studies would indicate that in India also the higher taxation, if used on all products, is likely to be an effective tool for tobacco control. An example in this respect is the effect of tax variation on non-filter cigarettes smaller than 60 mm. Till the financial year 1992-93, these cigarettes attracted a central tax of Rs 120 per thousand pieces, which was reduced to Rs 60 per thousand pieces during the year 1993-94. Cigarette industry described it as an initiative towards expanding the tax base. Taxes on this segment of cigarettes were raised to Rs 75 per thousand pieces in the year 1996-97, Rs 90 per thousand during 1997-98, Rs 100 during 1998-99, and Rs 110 for the year 1999-2000. During 1993-94, cigarettes priced at Re 0.20 were introduced in the market, with intentions of competing with bidi industry. This micro segment of cigarettes grew from a level of 600 million cigarettes per annum to nearly 23 billion cigarettes in 1997-98. The increase in tax in this segment over the last three years, has resulted in decreased sales, the sale during 1998-99 being 13% less than the sales in 1997-98 (extract from speech by Mr. Y.C. Deveshwar, Chairman, ITC Limited at the 88th Annual General Meeting of the Company on 30.7.99. The Times of India, New Delhi, 7th August 1999, page 19).

An account of tobacco taxation policy of India suggests that it has not been governed by health hazards of these products. The rates of taxation have been generally in line with the guiding government concern that the people in the lowest strata of community should pay lesser taxes. The smokeless tobacco products, common among rural masses, are not taxed. Bidis, which are known to be used by people in lower economic strata, were not taxed till early 1990s, but currently are being taxed lightly. The non-filtered cigarettes attract a much lower tax than filtered cigarettes, and cigarette companies aim the sale of highly taxed cigarettes towards the higher socio-economic groups of the society. The Ministry of Finance tried to keep the prices of certain tobacco products cheaper for low-income groups. The fact was never considered that a higher tobacco use rate among lower strata would also result in higher occurrence of tobacco related diseases in this strata. It is important to note that the total amount spent by patients (as well as by the government) on treatment of tobacco related cancers in India, does not differ significantly according to socio-economic strata¹⁵.

A reason for no tax on unmanufactured tobacco has invariably been that this is an unorganized sector and it would not be practical to impose tax on this sector. However, bidi industry also belongs to a scattered small industrial sector. The operational problems related to tax collection would remain the same irrespective of the taxation level. Thus, the rationale for a low tax on bidis may not be associated with logistics. There has been no interaction of financial experts with tobacco experts from other specialties, including health, regarding taxation on tobacco products. The limited pleas from non-governmental organizations active in the field of tobacco so far have not yielded the desired effect. It may not be entirely correct to blame the financial experts for a disproportionate tobacco taxation policy. Often specialists in a field concentrate on the aspects related to their sphere of expertise. In case of tobacco taxation, the Ministry perhaps had been using the general principles as applicable to other products. A greater interaction with specialists from other sectors like, health, commerce, agriculture, labour, welfare, police, border security force, foreign affairs, etc., would help them assess the real magnitude of hazards due to tobacco use and the positive influence which can be generated by a rational taxation policy.

A well conceived taxation strategy should assess its likely implications and intersectoral or multisectoral plans should be prepared to match the imbalance likely to result from it. For example, if an increase in taxes on bidis is implemented, likely implications may be a shift of tobacco users from bidi smoking to smokeless tobacco use, cessation of bidi smoking, a reduction of bidi tobacco production in medium term, and increasing unemployment rate among bidi rollers. Experience from elsewhere suggests that there may not be any reduction in revenue for a long time. As far as health sector is concerned, only cessation of bidi smoking as well as other tobacco products is the only desirable outcome of this step.

To avoid upheaval by the increased taxation on bidis, it would be important for the finance sector to tax smokeless tobacco products to render them equally costly. If increase in taxation of smokeless tobacco products has immediate or short-term operational problems, the agriculture sector would need to plan appropriate measures to avoid increase in production of smokeless tobacco. Even if people wish to shift to smokeless tobacco use, the increase in its demand and static supply would result in increase in prices, forcing people to consider tobacco cessation as the practical approach. The commerce and agriculture sectors should remove the facilities provided to farmers for tobacco cultivation and sale of their produce. The labour sector, which is intimately connected with bidi rolling, should work out a plan along with welfare sector for appropriate rehabilitation of bidi workers. Given a positive social atmosphere and personal incentive (like need to avoid expenditure on tobacco products) most of tobacco users can quit the habit. However, a smaller segment of tobacco users would require support from health agencies in quitting their habit. The health sector would need to create tobacco cessation clinics which would utilize techniques appropriate to the social set up (not to be confused only with nicotine replacement therapy).

An often-pointed out effect of increased taxation on tobacco products has been the increased smuggling in tobacco products. High tobacco taxation in one country opens up the avenues for legal or illegal imports from countries having lower rates of tobacco tax. Conservative estimates indicate that smuggling in cigarettes is causing an unaccounted outflow of foreign exchange upward of Rs 5,000 million and the related loss of revenue to the exchequer that would otherwise accrue on equivalent domestic manufacture. This contraband trade is estimated to be growing at an alarmingly high rate upwards of 20% per annum. (Speech of Mr. Y.C. Deveshwar, Chairman, ITC Limited at the 88th Annual General Meeting of the Company on 30.7.99. The Times of India, New Delhi, 7th August 1999, page 19). While the health activists are concerned about the negation of effect of tobacco taxation, the tobacco industry is also concerned about their reduced business. Cigarettes smuggled from Nepal and Myanmar cost much less than the cigarettes manufactured in India. In 1995, in Mizoram (an Indian State bordering Myanmar) a pack of 20 cigarettes, smuggled from Myanmar cost Rs 7 as compared to approximately Rs 20 for a pack of 20 comparable size Indian made cigarettes. The police and border security forces would need to develop strategic plans to check increased tobacco smuggling in the wake of increased taxation on any tobacco product. The legal channels of tobacco imports like the duty free import under the Baggage Rules, duty free shops at international airports, the duty free imports by agents on behalf of embassies and naval ships, and duty free import of cigarettes for re-export, etc., also need to be curtailed. The foreign affairs sector along with health, finance and commerce sector need to interact with neighbouring countries, to implement similar rational tobacco taxation structure which would make tobacco

products equally expansive in these countries. The facility of tax-free exports should also be withdrawn from tobacco products.

Health Warnings on Tobacco Products

The efficacy and impact of warning labels is difficult to assess, but studies indicate that they have a role to play in prevention of smoking. A study carried out in 1990 showed that 8% of the Europeans cited health warnings on cigarette packs and advertisements as one of the factors for giving up smoking¹⁷. Warnings on tobacco products may serve as a base for indicating that the consumption of these products may not be safe. It is likely to be more effective if the message is direct. Even if the message may not be sufficient in itself to result in habit cessation, it may generate a curiosity among users to explore more about the safety of the product.

In India, warning on cigarette packets and advertisements is mandatory under the Cigarette (Regulation of Production, Supply & Distribution) Act of 1975 (in force since April 1976). Under the Act, all the manufacturers or persons trading in cigarettes have to display a statutory warning ("Cigarette smoking is injurious to health") on all cartons or packets of cigarettes and cigarette advertisements. The Act states that the statutory warnings should be legible, prominent, conspicuous as to size (a minimum of 3 mm on cigarette packets) & colour, and should be visible to consumer before opening the packet. The warning should be presented in distinct contrast to the background colour or the written or graphic material of the package. Since 1990, the scope of the Prevention of Food Adulteration Act has been expanded to cover chewing tobacco and pan masala, whereby these products need to bear the statutory warning of "Chewing of tobacco is injurious to health", and "chewing of pan masala may be injurious to health", respectively. Every package of areca nut is to carry the warning of "Chewing of supari is injurious to health". The rules apply to advertisements also.

No in-depth study has been reported on the role of the statutory warning among tobacco users and non-users in India. However, a study on 865 smokers in Calcutta observed that statutory warning had effect on the habit in only 30% of smokers¹⁸. The academic staff of Lucknow University in 1989, ranked the health warnings on smoking products as third (out of seven) most important measure for tobacco control, although the smokers gave a lower score to it as compared with non-smokers¹⁹. The experts in India generally believe that the warning has not had any effect. The practice of advertising would suggest that repetition of one message for a long time may not be conducive to generation of interest among the target population to explore more on the issue. On the contrary, it may lead to habituation, which means that the warning is no longer noticed or read. The limitations of the current warning are: (i) the warning still does not cover many tobacco products, most important being bidis; (ii) The printed warning

is in English, thereby reducing its reach only to persons knowing English; (iii) It is repetitive; (iv) The colour combination of many cigarette packets does not permit its reading; (v) The size of the warning on many hoardings and advertisements is very small in relation to its overall size; and (vi) There was no monitoring regarding its implementation, and no action has been taken against defaulters.

In view of these limitations, the Government of India proposes a comprehensive legislation wherein a health warning would figure on all tobacco products and it would be in the form of more telling slogans, like, "Tobacco can cause cancer", etc. The existing warning labels in India are inadequate in many respects, including the language used. The Indian Parliament's committee on sub-ordinate legislation considered the issue in 1995. Its recommendations included major changes in warning on all tobacco products, including, expanding the scope to all tobacco products; warning being bilingual (English and local language); need for pictogrammes indicating danger due to use of tobacco; coverage of at least 25% of package area for warnings; colour combinations and legibility; and periodic rotation of warnings.

It has often been stated that bidi manufacture in India is a cottage industry where it is supposedly difficult to enforce legislation. This may not be correct. Bidi rolling may be carried out by people in their home or in a factory, but the next step in preparation of bidi (heating of the rolled bidis and its packing) is carried out in comparatively smaller number of units, which can be considered as small scale industries and can be brought under legislation. Moreover, the packets of bidis do have their brand names and other information and printing of a health warning on these packets is a distinct possibility. The Parliament's committee on sub-ordinate legislation on tobacco recommended printing of a warning on individual cigarettes as well. Although some feel that it may not be possible, the fact that each cigarette has its name or logo at exactly the same spot on individual cigarette suggests its feasibility.

In the past the enforcement of warning on tobacco products has not been at a desired level. For optimum effect, it is necessary that the rules be enforced seriously. The rules for such warnings could be framed by the Ministry of Health, or by other Ministries with the help of health sector. However, enforcement of these measures is likely to be possible only with a social awakening. Some deficiencies in enforcement of warnings in terms of legibility, hoardings not providing lighting on warning part at night, the colour combination on cigarette packets, etc., had been observed by many people, but they did not report the matter to concerned authorities. Education is necessary about existence of such rules, its provisions and mechanism for redressal, for optimum enforcement. Support from education, mass media and health sectors is necessary for this purpose. Support from the enforcing authority (generally police) would also be needed. The drafting of legislation on warning on tobacco products may be carried out by one

sector, but its enforcement does require a multisectoral approach. Non-governmental organizations (NGOs) can play an important role in monitoring the implementation of legislative measures.

Reduction of Tar and Nicotine Levels of Cigarettes and Bidis

The literature suggests that chance of development of lung cancer increases with high concentration of tar in the smoked cigarettes²⁰. Similar risk pattern has also been observed for cancers of mouth, larynx and urinary bladder. A time trend analysis of the lung cancer incidence and reduction in levels of tar in cigarettes also suggests that the burden of lung cancer in the community is likely to decrease by reduction in tar levels in cigarettes²¹. Benefits of reduction in tar and nicotine levels in cigarettes have also been observed for coronary heart disease²². However, benefits on respiratory symptoms or peak expiratory flow rates have not been observed following reduction in tar and nicotine levels of cigarettes, mainly due to self adjustment of smokers for nicotine delivery^{23,24}. Self adjustment by smokers to maintain their nicotine levels, has also been observed on changing to low-tar low nicotine cigarettes, either by increasing the number of cigarettes smoked per day or by increasing the toxin yield to the body through vigorous puffing^{25,26}. While the effect of reduction of tar and nicotine levels of cigarettes (and bidi) to a very low levels may need further studies, its reduction to medium or low levels may be useful in Indian context, where the general level of tar in cigarettes or bidi is above 20 mg per piece. It may be emphasized that technology for reduction of tar & nicotine levels in tobacco is available in India. Measures for this endeavour require active support from agriculture sector to ensure adequate availability of tobacco with low levels of tar and nicotine and development of curing/processing methodologies, which yields lower toxins.

The goal of tobacco control programme would be the cessation of habit by as many people as possible. However, many people who can not quit the habit, but get enlightened about reduced risk by smoking low tar & nicotine cigarettes, may prefer to choose a product with lower levels of toxins. Therefore, it would be useful if the tar and nicotine levels are displayed on cigarette and bidi packets. The considerations for implementation of this measure are similar to those of warnings on tobacco products and those for reduction of toxin levels in tobacco. Labour and commerce sectors would need to be convinced about its feasibility, since these sectors are concerned about welfare of bidi industry, which may plead non-availability of resources. Resources for testing levels of toxic in tobacco may be required to be set up, either by agriculture or health sectors.

Ban on Tobacco Advertising

Mass media is an important means of quick spread of any message. Studies indicate that a large number of people learn about drugs, including tobacco, from mass media. The learning relates to both the so-called benefits and health hazards of tobacco. Thus, it is important that the mass media presents the tobacco messages very carefully. Studies in Western countries have indicated that the probability of a magazine covering smoking and health is significantly negatively related to its dependence on cigarette advertisements as a source of revenue²⁷. A large number of countries have imposed bans on tobacco advertising, to varying extent. Tobacco companies claim that advertising is for brand changing and not for inducing people (mainly children) to initiate smoking. However, studies indicate that smokers rarely change their cigarette brands. In view of the partial or complete ban on advertising in some countries, the tobacco industry resorts to an indirect advertising through sponsorship of sports or cultural events or through marketing and advertising of products bearing the names of popular tobacco brands. Studies have observed that indirect advertisements can influence young minds. Therefore there is a need for banning direct as well as indirect advertisement of tobacco products.

The advertising of the tobacco products in India, is prohibited in the government-controlled media, like, T.V., radio and government publications. The government of Delhi imposed a ban on outdoor tobacco advertisements in January 1997. At other places, tobacco advertisements are common through satellite television channels, newspapers, magazines, video films, hoardings (except in Delhi), advertisements in cinema halls, sponsorship of televised and others sports (even through government controlled electronic media), cultural & entertainment events.

Experience on ban on advertisements of tobacco products is a classical example for the need for multisectoral approach for tobacco control. This is a measure, which is being strongly resisted by the tobacco manufacturers as well as by many people in policy-making capacity. The Ministry of Health & Family Welfare of India, initiated the process for preparation of a comprehensive legislation related to tobacco control in 1986. The enormous time taken for the Ministry of Health to convince bureaucrats in other sectors and politicians about the need and relevance of this legislation indicates the need for more cooperation from other concerned sectors in the total process of tobacco control. Recently, Ministry of Labour commissioned a study, which tried to assess the impact of a legislation on tobacco cultivation, trade and related employment, by assuming changes in tobacco consumption ranging from 5 to 15%, based on experiences from other countries. Perhaps, with a multisectoral approach, the endeavour of the report would have been to find methods of rehabilitation and restructuring of agriculture practices and economy, rather than merely painting of an imaginary gloomy picture. Education

of the community and interactive workshops involving various sectors would not only help in acceptance of tobacco control measures by policy-makers and public at large, but also help in quick identification of redressal mechanisms. The Delhi example clearly indicates that ban by only one state government on tobacco advertisements helps only to a small extent, because they do not control many other channels of tobacco advertisements. The problem of tobacco advertisements through satellite channels requires intervention by the Ministry of Information and Broadcasting. It would also require contact with other countries through sectors dealing with external affairs, in order to develop a unified policy on broadcasting ethics and regulations from various soils. Effective implementation of the ban would invariably be from sectors other than health, generally through police and NGOs.

Sponsorship of sports or cultural events by tobacco companies is considered as surrogate advertisements of tobacco products. The decision-makers in India generally accept it as a form of advertisements of tobacco products. However, concerned sectors plead the availability of limited resources for undertaking sports and cultural events. However, they need to realize that the tobacco industry sponsoring a sports event is only one of the bidders for the purpose. For the purpose of intervention, one should not consider the quantum of money provided by the tobacco company, but the gap between the bid by the concerned tobacco company and the second highest bidder. For the Dhaka triangular cricket series of 1998, Wills Sports provided a sponsorship fee of Rs. 350 million to the Cricket Board. The ITC Limited does not consider it advertisement of their cigarette brand, but advertisement of their sports gear company. However, the statement at the annual General Body Meeting of the company in 1999, does not even mention it as a subsidiary of the parent company, despite of spending a large amount on advertisement. It is only a continuous interaction between various sectors, which is likely to highlight the discrepancies and provide solutions to such issues.

Ban on Smoking in Public Places

Public places are to be visited by all persons of the community and the ambient environment is same for all. So far the tobacco smokers had the right to pollute the ambience with tobacco smoke. However, the increasing knowledge about the harmful effects of passive smoking has changed the scenario and many countries have imposed ban on smoking in public places. In India, such a ban exists only in the states of Delhi and Kerala. The comprehensive legislation from the central government, which includes provision for a ban in public places, has so far not been placed before the Parliament. The ban in Delhi was promulgated on 26th January 1997 after discussion in Legislative Assembly. On the other hand, the ban in Kerala was after a directive from its High Court and was implemented from 12th July 1999. The Delhi legislation provides for ban on tobacco advertisements, smoking in public places, sale of tobacco smoking substances to minors, and sale of tobacco smoking substance within an area of one hundred

meters from educational institutions. Some public places, like hospitals, dispensaries, educational institutions, restaurants, public vehicles, etc, have been defined in Delhi notification, but the government may, by notification in the official gazette, declare any place of public work or use in Delhi to be a non-smoking place under this act. A major difference in the legislation in two states is the definition of public places. While Delhi permits smoking in open spaces, Kerala considers sidewalks, etc., also as public places and prohibits smoking there. The ban does not seem to be getting implemented seriously in Delhi, but initial newspaper reports in Kerala indicate a 30% reduction in sale of cigarettes during the first month of implementation. The police is taking initiative in effective implementation of the legislation in Kerala. This clearly indicates the need for an intersectoral and multisectoral approach for tobacco control. Involvement of education and mass media sectors would further help in better acceptance of the changing scenario by the community at large.

The Government of India, in 1990, issued an administrative order prohibiting smoking in select public places like hospitals, dispensaries, educational institutions, conference rooms, domestic air flights, air conditioned coaches in trains, sub-urban trains and air-conditioned buses, etc. While the prohibition was successful in certain areas like domestic air flights, implementation of the order in other areas is not complete and varies with implementing authorities. Interestingly, it may alone not be the health sector to take such a lead on this issue. Recently, Railways in India, banned sale of tobacco on Railway platforms. This directive was on environment grounds and was announced on the World Environment Day in June 1999, which was less than a week after the World No Tobacco Day on 31st May 1999. Ministry of Environment initiated the legislation for tobacco control in Goa, which includes provision for banning smoking and use of smokeless tobacco in public places. However, the bill has been referred to the President of India for opinion and is still pending. This again indicates the potential and possibility of other sectors in initiating effective tobacco control measures.

Community Education

Tobacco use has become an established habit all over the world. The eradication of tobacco related diseases, therefore would not only require political actions but also a social change. This change can be brought about by education of the community regarding health hazards of tobacco. Anti-tobacco education would be required to be targeted at decision-makers, professionals and the general public, especially the youth.

In India, a prospective behaviour intervention study on feasibility and effectiveness of primary prevention of oral cancer, through anti-tobacco education, was a pioneering step by Tata Institute of Fundamental Research, Bombay. The study was conducted in three areas. The study showed that after an intervention of ten years, a significantly higher proportion of persons

in the intervention group stopped tobacco usage as compared to a control cohort²⁸. Initial efforts by the government of India on anti-tobacco education were through the implementation of National Cancer Control Programme, in view of the fact that half of the cancers among men and about one fifth of the cancers among women in India related to tobacco related sites. The anti-tobacco community education activities have been initiated in 39 districts through district level projects for control of cancers. The Indian Council of medical research (ICMR) carried out studies on anti-tobacco community education through involvement of existing infrastructures. The studies involved radio, health infrastructure, schools and community volunteers. The results showed that all these infrastructures can reduce the tobacco prevalence, if motivated adequately.

Covering a large population for educational purposes would be a formidable and unthinkable job without the support from mass media. The experience suggests that such programmes would be most cost-effective, if media managers consider it as their own programme and not take it as a liability to be fulfilled since a directive was received from a government agency. They however, need support from health sector for availability of reliable and impartial information on the subject. They invariably wish to feature experts from health sector in their programme/ write up, to increase its authenticity.

Support from education sector is also paramount in providing information on tobacco and its hazards to children and youth. Literature from India indicates that a large number of children start experimenting with tobacco around the age of 10 years or earlier. Many of them tend to turn regular tobacco users about the age of 15 years. Therefore, earlier the provision of education on tobacco, better would be the expected results. Proper education at this impressionable age would help them in developing a personality empowered with courage to not only refuse the temptation for initiation of tobacco products, but also advise tobacco users to quit their habit. Such an effect has been observed in ICMR's study on the subject in Goa.

Ban on Tobacco products

In response to a directive from Jaipur High Court, a committee on health hazards of pan masala containing tobacco was constituted by the Directorate General of Health Services. The committee examined the data related to this newer tobacco mixture (about 2 decades old) and other related mixtures being used in India. The committee's report was considered by the Central Committee on Food Standards in November 1997, and recommended a ban on chewing tobacco in the country. An inter-ministerial meeting called by the Ministry of Health & Family Welfare discussed the feasibility of such a recommendation. A major problem in decision-making at such times is the logistics involved in implementation of such bans. Example of another ban, which does not find implementation also, exists in India. The government has

banned the addition of tobacco in toothpaste and toothpowder. The appeal by manufacturers in the Supreme Court was rejected in 1997, and the ban was notified. However, toothpastes containing tobacco are still freely available in the country. Social awareness is of paramount importance in effective implementation of such a ban. Implementation in a ban on chewing tobacco would require consideration of aspects related to crop substitution by tobacco farmers, rehabilitation of certain people connected with processing & trade, and support to existing tobacco users to empower them in quitting the habit so that they don't shift to other tobacco habits. Only a concerted action by various concerned sectors can help in effective implementation of such a ban.

Substitution of Tobacco with Alternate Crops

Literature on tobacco cultivation indicates that for profitable production, tobacco cultivation does require proper inputs like watering at appropriate times, fertilizers, etc. In many areas, tobacco cultivation has been shown to be more profitable to the farmers as compared to other crops grown in the same area. However, such comparison may be artificial, as tobacco crop may be enjoying certain facilities, which helps in increased yield of the crop and thus bigger margin of profit. It has been often projected that due to higher remuneration, farmers are not willing to shift to other crops. This indeed is true in many parts of world, including India. It is logical to conclude that the farmers are growing tobacco for a monetary return and not for any loyalty to any crop. Thus, if facilities for cultivation, and the confidence of a minimum support price at which their produce would be bought by the government or private traders are withdrawn, the farmers may be willing to shift to alternate crop cultivation.

The Canadian Department of Agriculture carried out a programme for tobacco diversification in 1987, through provision of incentives to tobacco farmers. The plan was developed in response to decreased demand for tobacco. Under the Tobacco Transition Adjustment component of the plan, the farmers were provided cash payment to those agreeing to stop growing tobacco. The Alternative Enterprise Initiative component provided financial assistance for specific alternatives to tobacco farming. A 55% decline in number of farms was observed from 2,916 farms in 1981 to 1,326 farms in 1992. Tobacco Transition Adjustment Initiative was found to be more successful, with many of the farmers shifting to manufacturing and service sectors²⁹.

The Bangladesh Cancer Society carried out a demonstration project on tobacco crop substitution through locally generated funds. About three-quarters of adults in the 15,000 rural population were found to be tobacco users, with most of the men using bidi or hand rolled cigarettes and women using chewing tobacco. Tobacco growing was also wide spread in the area. Intervention was through convincing religious leaders, teachers, health care workers, and

other opinion leaders of the importance of discouraging tobacco use by the community. Agricultural extension workers advised the local tobacco farmers on how to switch from tobacco production to other food crops such as bananas, okra and maize. Preliminary evaluation after three years' intervention showed a dramatic decline in tobacco use. Crop substitution could be carried out successfully. Okra production was yielding farmers four times more money than they had earned through tobacco. Local sale of okra helped in enhancing the nutritional status of the community³⁰.

The Canadian tobacco crop substitution experiment was carried out at a time, when their tobacco market was at a decline and could not support all the farmers. Therefore, rehabilitation of these farmers had become more or less a compulsion for the agriculture sector. However, such situations would generally not exist in most countries. Bangladesh also had an advantage that many alternate crops grown in the area were known to be more profitable than the tobacco farming³¹.

Currently in India, tobacco is grown over 0.4 million hectare land, which is less than 1% of the total cropped area of the country. The maximum land allocation for tobacco cultivation was in the years 1977 and 1982 (0.5 million hectares). However, the years following these bumper crop times had also seen the maximum decline in land allocation in the history of tobacco cultivation in India. A reduction or increase of about 2 to 6% in the area used for tobacco cultivation has been a usual feature, but there have been three instances of more than 10% reduction in land allocation for tobacco cultivation during the last three decades. The highest reduction over the preceding year, was seen in 1978 (18%), followed by 16% in 1974 and 12% in 1983. The data suggests that a reduction up to 10% in land allocation for tobacco cultivation may not have any perceivable effect on agriculture practice, and with well conceived tobacco crop substitution strategies, even a reduction of about 20% should also be feasible.

About 80% of the Indian tobacco crop is for consumption within the country. The country has not experienced major reduction in tobacco consumption, which could create urgency for tobacco crop substitution. Agriculture sector is actually supporting tobacco farming through provision of tobacco seedlings to farmers, assurance of a minimum support price for their produce, provision of platforms for auction of their crop, etc. Research by the Indian agriculture sector has resulted in availability of higher yielding varieties of tobacco. This along with availability of good seeds and better irrigation facilities has resulted in increase of average national per hectare tobacco yield from 731 Kg in 1950-51 to 1,501 Kg in 1994-95.

Indian agriculture sector has not embarked on to any systematic experiment for substitution of tobacco crop by some other crop. Comparisons have been carried out on profit to

the farmers from growing tobacco or other crops commonly grown in that area. The comparison does indicate that many other crops can be grown in that soil and also that some of the crops can be more remunerative than tobacco. Some of the alternative crops identified and suggested by Tobacco Board of India are, groundnut, sunflower, mustard, soybean, maize, coriander, cotton, Bengal gram and some medicinal plants. The argument by agriculture experts is that these crops may not remain remunerative if the quantum of their produce increases. However, this argument would be true for any crop, including tobacco. A very high production of tobacco on two occasions (1977 & 1982) has seen maximum reduction in the land used for tobacco crop in immediately succeeding years. Such phenomenon by farmers is expected because the returns from tobacco during the high production year would be lower than anticipated. The comparative profitability of crops also keeps changing from year to year. The data on cost of cultivation of tobacco from Central Tobacco Research Institute indicates that the cost of cultivation of tobacco does not differ significantly, but the profit to farmers may vary depending upon the unit area yield of the produce. For example in 1994-95, net return to a tobacco farmer in Bihar growing a high yielding variety (2,500 Kg per hectare) of Pusa chewing tobacco was Rs. 49, 432 per hectare, compared to a return of Rs. 22,010 per hectare for a farmer growing Bandi variety of tobacco. The input cost for these farmers was comparable, at Rs. 25,568 for Pusa and Rs. 22,990 for Bandi.

In today's scenario, agricultural scientists would not consider the gradual substitution of tobacco crop as practical. However, it must be realized that easy availability of tobacco products may defeat the very purpose of legislative and educational action towards control of tobacco use. Therefore, it is important that the issue of tobacco crop substitution is taken seriously. It is important that the agriculture scientists consider this measure as a distinct possibility. The fear of dependency of a large number of persons on tobacco cultivation and trade has often been projected as a major hindrance for major tobacco control steps. A closer look at the agricultural practices shows that tobacco farmers may not be dependent solely on tobacco crop. They do grow other crops in between the tobacco-growing season. A majority of agricultural force dependent on tobacco is in the form of labourers, who would still find their job intact (with same wages) if the tobacco crop were substituted with any other crop. Today many alternate crops are not as remunerative as tobacco, due to the fact that over a period of time the soil has been conditioned to suit tobacco cultivation. Such a situation is likely to change in a few years if a serious effort for tobacco crop substitution is initiated. A large number of retailers, especially in rural areas do not sell tobacco products alone, but it is one of the many items being sold by them. Thus, gradual reduction of tobacco use would not finish their income, but at the maximum may result in small gradual reduction of income.

While decreased demand of tobacco may force the tobacco farmers to seek alternative crop cultivation, the reduced tobacco cultivation can also result in reduced availability of tobacco leading to price escalation and thus, reduced consumption. However, agriculture sector may not consider a major action of crop substitution on its own. It is important that the steps for demand and production are suitably planned and matched. Agriculture sector needs to be convinced about the necessity of tobacco crop substitution and reassured that major educational activities would be initiated to reduce the demand of the product. The health sector could also advise on the choice of alternate crop, so that its availability in specific areas could help in correcting nutritive deficiencies found in these areas. Besides this intersectoral collaboration, support from education sector and mass media would also be useful in spreading the anti-tobacco message. The commerce and transport sectors would need to ensure that the excess alternate crop does not accumulate in the experimental area and it reaches in time to its identified destination. The agriculture scientists may identify other crops which are not generally grown in the area but can be consumed locally. Substitution of such crops would not result in reduction of their prices due to higher product availability. Sectors like labour and welfare would need to identify proper strategies for rehabilitation of bidi workers. Although the bidi roller families are entirely dependent on this work, their low remuneration suggests that there would be no resentment among these workers on provision of alternate vocation.

Mechanism for Multisectoral Approach for Tobacco Control

The root concept of multisectoral approach aims at initiation of and carrying out the activities related to tobacco control, by all connected sectors on their own. This ensures that individual sectors consider it their social responsibility to initiate activities for tobacco control as related to their sector. The inherent advantage of this approach would be that these sectors would look for budget for these schemes within the sector. Having the expertise in the area, the plans developed by them are also likely to be more cost-effective.

It would be ideal that every sector takes actions and periodically reviews the activities in their areas of expertise. However, such expectations are not likely to be practical and an office for coordination of tobacco control activities would be necessary. Since health is currently the leading argument for tobacco control, an office under this sector should be acceptable to other sectors, in all countries.

Currently in most societies, health sector seems to have accepted a self-imposed responsibility for tobacco control, with the result that other sectors as well as community at large also tends to associate tobacco control with health. For optimum benefit through a multisectoral intervention, the health sector would also need to change its approach. Tobacco control would

need to be projected as a social cause, wherein a social change is anticipated following which the societal norm would predominantly be towards non-usage of tobacco. A repeated request would need to be made to various sectors to apply their mind and plan activities for tobacco control through their sector or through collaborative actions by many sectors. It can be expected that the "will" to carry out an activity and resultant efficiency by specific sector would be higher if the activity is considered as their own. This was evidently clear in the project "Radio DATE" between All India Radio (AIR) and Indian Council of Medical Research (ICMR) which has been described earlier. The degree of possessiveness about the project was so high that AIR team insisted on calling it an AIR-ICMR project rather than ICMR-AIR project. The will and efficiency was reflected in indulgence of AIR team in a thorough understanding of the tobacco before preparation of the programme; meetings by AIR team among themselves, with ICMR team and with other experts for formulation of the programme; modification of the episodes if not found appropriate by them; and sometimes adopting an authoritarian role to complete the episodes within the timeframe.

To change the current scenario on tobacco control from a health-oriented-activity to a social-activity is not easy. This should also not be taken as dissociation of responsibility by health sector, but should be considered as a method of adopting a broad-based approach. It is needless to say that health sector would have to adopt a leading role even for accomplishing this change. Approach of mutual respect is absolutely necessary for fruitful accomplishment of collaborative multisectoral or intersectoral activities. Catalysts for this change may differ from society-to-society, and also from time-to-time. The following suggestions may however, provide some initial impetus.

a) **Office on Tobacco Control:** The activities related to tobacco control are many and the coordinators can not be expected to do full justice if it is one of their responsibilities. Planning of cost-effective programmes does require full-time thinking and complete dedication on all aspects of tobacco. Therefore, creation of an office on tobacco control with adequate facilities under Ministry of Health is highly desirable. The office may monitor the tobacco use status, tobacco production & trade practices; plan and evaluate cost-effective intervention programmes; interact with sectors associated with tobacco and undertake liaison work for initiation of their activities; initiation & coordination of intersectoral (not necessarily with health sector) and multisectoral programmes for tobacco control; undertake/ commission research in support of tobacco control; prepare periodic reports; etc

b) **Workshops on Tobacco for Various Sectors:** In many situations, different associated sectors may not be aware of the magnitude of the problem and possible solutions for tobacco control. It would be necessary that programmes are organized in consultation with and after full

involvement of different sectors, which inform them of different facets of tobacco and its control. The faculty for such programmes would necessarily have to be inter-disciplinary, carefully selected from fields of health, economics, media, education, sports, youth affairs, agriculture, finance, law, labour, etc. Such stimuli should be followed by periodic interaction and seeking their cooperation to initiate activities related to that area.

c) **Discussions within Parliament:** Parliament or legislative assembly can be considered as top-most plank for any multisectoral activity. Appropriate discussions highlighting multisectoral approach and pointing out the specific roles of different sectors are likely to result in maximum benefit. Discussion of the issue in any Parliament committee may also result in recommendations for various sectors. The main advantage at this forum is that it could question any sector and their decisions are acceptable to every sector. Another advantage of such discussions is the sensitization of members who hitherto have not been taking active interest on the subject. Indian Parliament's committee on sub-ordinate legislation, which discussed the existing cigarette act relating to warning on cigarettes in 1995 (describe earlier), could be considered as a milestone for the country for multisectoral approach for tobacco control. Follow-up meetings by health sector resulted in appreciation of tobacco problem by other sectors and initiation of internal discussions to consider remedial measures. While this in itself resulted in limited activities by these sectors, but their approach towards the issues definitely changed, which would be useful in development of future interventions.

d) **Inter-Ministerial Discussion on Tobacco Control:** Most governments would have an existing mechanism to discuss inter-ministerial issues. Tobacco definitely is a suitable candidate for such discussion. Such meetings would have a useful purpose for discussion of specific tobacco related issues, as well as to stimulate various sectors for action on tobacco control. Such discussions are important in view of the fact that the success or failure of intersectoral strategies is often a matter of redressing the power gaps between different sectors and ministries. Quite often follow-up meetings for certain recommendations may catalyze initiation of control programmes by other sectors. Such efforts between specific government departments may also serve a similar useful purpose. An example of this approach is the development of the current health awareness programme for tobacco control, wherein Directorate of Audio-Visual Publicity (Government of India) was requested to be on the selection board for deciding the agency for media campaign against tobacco. The experience stimulated the Directorate to offer conduct of the campaign along with its Song and Drama Division at concessional rates, which was agreed by the Ministry of Health & Family Welfare. However, even before the funds could be released for this purpose, the Directorate prepared few anti-tobacco messages in the form of posters and initiated a print media campaign through newspapers. Under this campaign readers were asked to send their opinion for the best poster. The poster with maximum votes would be

the winner. The persons sending the opinion on best poster would be eligible for an award selected through lots. While sending the entry form, the readers need to write out a millennium pledge for not smoking during lifetime (for non-smokers) or to do everything within the person's power to give up smoking (for smokers). Within first three days, the Directorate had received 1,500 entries. The Directorate spent the required funds for this campaign.

e) **National Tobacco Advisory Committee:** Setting up a multi-disciplinary advisory committee on tobacco would help in holistic understanding of tobacco scenario and planning of control strategies. Experts from various fields would inform each other of their sectoral problems as well as initiatives within the sectors. They would also take back the message and suggestions for a multi-pronged action on tobacco control, from experts in other sectors. This approach may also result in contribution of funds by non-health sectors, which would represent their commitment.

f) **Combination of Tobacco Control with Other Programmes:** Sometimes it may be easier to initiate programmes on tobacco control by combining it with other existing or proposed programmes. A common example of intra-sectoral collaboration (health) is combining tobacco awareness programme with education on alcohol & drugs. This has been successfully achieved in the collaborative programme "Radio DATE", between All India Radio and Indian Council of Medical Research¹². Such combinations may become cost-effective and sometimes may be more acceptable to programme managers or to the community. One example of such continuing collaboration is the Sri Lanka's coordinated programme for promoting a healthy drug-free lifestyle. Recommendations from a workshop in 1996, paved the way for formation of a national coordinating committee on alcohol, tobacco and other substances, with representatives from all major organizations working in the area of prevention³². The coordinating committee has been meeting monthly for the task of formulating a national programme. Country profile for Sri Lanka has been prepared on alcohol and tobacco. The suggestions and guidelines provided by this committee have been helpful in gaining support for tobacco control from different sectors. Combination of tobacco education as a part of healthy lifestyle programmes for cardiovascular diseases has also been popular in certain countries, including Finland and India. Opportunity for tobacco awareness may be available while educating about deforestation or religion or even general hygiene.

g) **Networking by Non-Governmental Organizations (NGOs):** The NGOs have an important role in various activities related to tobacco. Besides health-related NGOs, it is important to tap the potential of NGOs working in non-health sectors. A network of NGOs could discuss & plan various activities for tobacco control and assign specific duties to NGOs working in specific sectors for their cost-effective implementation. Different NGOs could take up the responsibility for advocacy for their respective sectors. In view of their great potential, support to these NGOs

from governments or international agencies like WHO, would be a good investment for tobacco control.

Evaluation of Multisectoral Approach

Evaluation aspects related to multisectoral or intersectoral approach have not been documented. For logistic reasons, it would be difficult to set up a randomised experiment. Comparisons of efficacy of similar intervention, through a unisectoral or intersectoral/ multisectoral approach would perhaps only provide an indication of its usefulness. This is likely in view of the presence of confounders in the form of societal perception over time or location at different areas, presence of other tobacco control programmes, legislations, etc. So far, perhaps evaluation of this approach has not been considered while planning intervention strategies for tobacco control.

However, few advantages have been observed while undertaking Radio DATE programme in India. In collaborative programmes, the involved non-health agencies do not need to be followed for implementation of the programme. On the other hand, at certain times this role seemed to have been taken over by the AIR team. This was due to the fact that the team accepted it as their responsibility. The effect lasted not only during the period of programme implementation, but also for the next few years. This was evident by comparing the number of tobacco educational programmes broadcast by Delhi station of AIR, before, during and after the year of broadcast. Such number was very small before the Radio DATE programme started; a sudden increase was observed during the year of broadcast, which lasted at the same level for the next two years, after which a decrease was noticed. Another observed advantage was the cost-effectiveness of the programme. The entire budget spent by ICMR on this project lasting 30 weeks (20 minute episodes broadcast twice a week) broadcast from 84 stations in 16 languages, was approximately US \$30,000. An approximately equal amount was spent by AIR on this programme. There was no profit involved for any agency. The actual broadcast timings were not even considered by either agency, because it was taken as an opportunity cost. It was felt that some programme or the other had to be broadcast by AIR during this time and these programmes were considered as good candidates for prime-time broadcast.

While no clear-cut results or parameters exist for evaluation of multisectoral approach for tobacco control, the experience suggests this measure is likely to be cost-effective, if not more effective than unisectoral approach.

Recommendations for Framework Convention on Tobacco Control

Exact mechanism for initiation and continuation of intersectoral or multisectoral programmes for tobacco control would vary from country to country, and also from time to time depending upon the specific requirements and local circumstances of a country or any area within a country. However, some suggested measures are likely to work for most countries and inclusion of such aspects in WHO's Framework Convention on Tobacco Control are likely to hasten the process of tobacco control. Importance of these measures in national tobacco control programme has been described earlier in this paper. These mechanisms may also help in meaningful negotiations on elements related to Framework Convention on Tobacco Control. These measures are:

- a. Development of National policy on tobacco.
- b. Establishment of an Office on Tobacco Control.
- c. Establishment of a multisectoral advisory committee for tobacco control.
- d. Networking of health and non-health NGOs interested in working on tobacco control.

Conclusion

For a long lasting and permanent reduction in tobacco use, it is necessary to create social awareness, which would result in acceptance of non-usage of tobacco products as a social norm. Many modalities for reduction of tobacco use have been identified, like taxation on tobacco products, protection of non-smokers from tobacco smoke, ban on tobacco advertisements, warning on tobacco products, etc. The effective implementation of all these strategies warrants action from more than one sector. Health being the most powerful argument for tobacco control, this sector would need to adopt a major role in tobacco control, in terms of implementation, in providing information related to diseases caused by it, and support to tobacco users in cessation. However, the role of other sectors can not be discounted. For any strategy to be cost-effective, all the concerned sectors need to work in tandem. This requires understanding of the tobacco problem in its entirety and not merely consider the effect of any intervention in isolation. Greater interaction between different sectors connected with tobacco, would help them understand the need for taking urgent steps for tobacco control, realize important predicaments, identify practical and feasible strategies for solving the identified fall outs or implications of a specific control measure. This approach would help in developing an attitude of problem solving rather than resist the advent of any intervention by any other sector. One must expect that changing the scenario of tobacco use would entail major actions affecting a large segment of the society. However, the solution to this gigantic problem is not to ignore it, but to collectively find a solution, which would cause minimal upheaval. Multisectoral and intersectoral approach for tobacco control is thus, the need of the time and deserves utmost consideration.

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Multisectoral and Intersectoral Approach to National Tobacco Control. Author Dr. Kishore Chaudhry. , Deputy Director General, Indian Council of Medical Research, Ansari Nagar, Post Box No. 4911, New Delhi â€” 110 029 , India.Â The need for intersectoral and multisectoral collaboration for tobacco control in India has been realized for more than a decade. Realizing the potential of educational institutions, the 6. of developing a multisectoral strategy for tobacco control. Conclusions and key recommendations In countries having strong tobacco industry influence, tobacco control issue needs to be brought forward within larger policy mandates of non-health sector ministries, using their national priorities.Â Background Tobacco control policy innovations often start at the local level. The U.S. state of California, and localities within it, have been tobacco control policy leaders. Currently, policies designed to end, rather than just reduce or mitigate the tobacco epidemic are being discussed around the world. This study explored California tobacco control leaders' and advocates' opinions about new [Show full abstract] policy concepts characterized as endgame ideas. Multisectoral and intersectoral approach to national tobacco control. Paper commissioned by the World Health Organization on the occasion of the WHO International Conference on Global Tobacco Control Law: Towards a WHO Framework Convention on Tobacco Control. 2000 Jan 7-9; New Delhi, India. 6. Cigarette smoking and nicotine addiction. Med Clin North Am. 1992. 7. Dikshit RP, Kanhere S. Tobacco habits and risk of lung, oropharyngeal and oral cavity cancer: a population based case-control study in Bhopal, India. Int J Epidemiol. 2000.