Research priorities for tobacco control

A global agenda

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research for international tobacco control
recherche pour la lutte mondiale contre le tabac
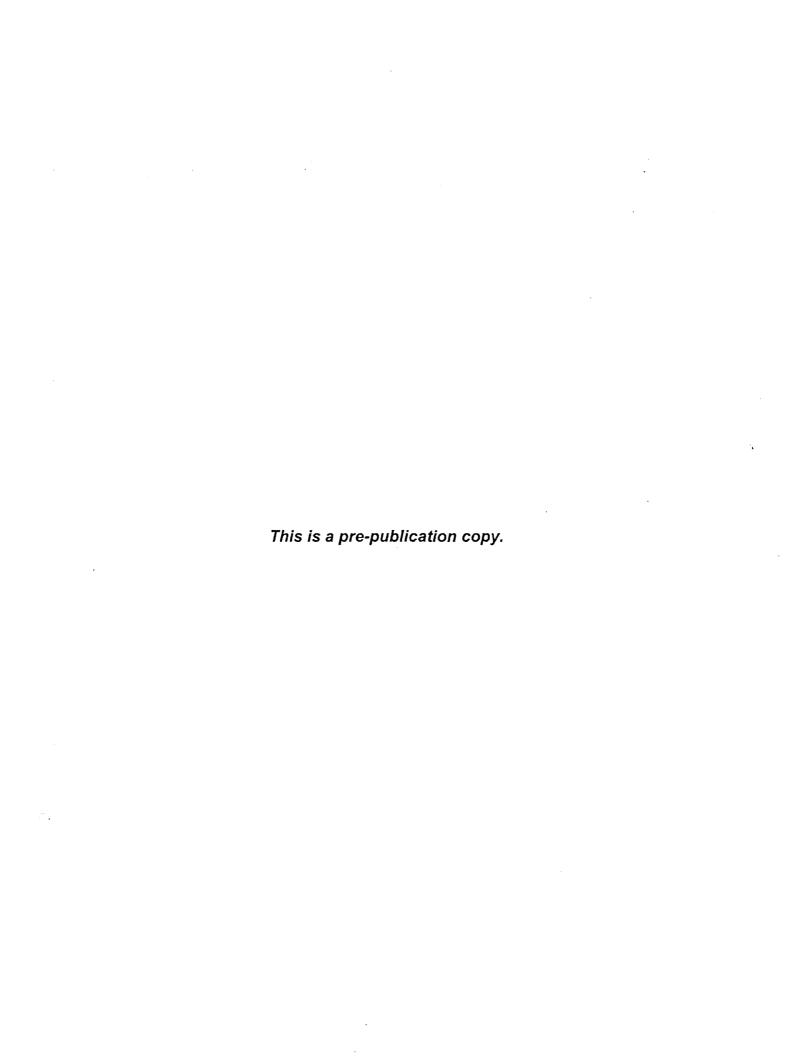
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Acronyms

APACT	Asia-Pacific Association for the Control of Tobacco
BRI	Blair Research Institute
BRTI	Biomedical Research and Training Institute
CDC	Centers for Disease Control and Prevention
DALYs	disability-adjusted life years
ECSA	East, Central and Southern Africa
ETS	environmental tobacco smoke
GO	government organization
IDRC	International Development Research Centre
MERCOSUR	South American Common Market
NAFTA	North American Free Trade Agreement
NGO	nongovernmental organization
RITC	Research for International Tobacco Control
SADC	Southern African Development Community
SAM	smoking attributable mortality
Sida	Swedish International Development Cooperation Agency
TAM	tobacco attributable mortality
TCCA	Tobacco Control Commission for Africa
THPI	Thailand Health Promotion Institute
TTC	Transnational Tobacco Company
UICC	International Union Against Cancer
VAT	Value Added Tax
WHO	World Health Organization
WHO/AFRO	World Health Organization Regional Office for Africa
WTO	World Trade Organization
YPLL	years of potential life lost

Introduction

In 1995, in response to the global burden of tobacco-attributable disease, and to the impact of tobacco production and consumption on sustainable and equitable development, a group of 22 international organizations and individuals issued a statement at a conference convened by the International Tobacco Initiative (now Research for International Tobacco Control). The statement invited the scientific community and research funding agencies to participate in stimulating, funding and supporting information programs, appropriating research funds, and building capacity for tobacco control (Bellagio Statement 1995). Nonetheless, tobacco control remains a low priority in most developing countries (WHO 1997), and as both a cause and a result, basic research data with country-specific evidence are rarely available to raise the awareness of policymakers and funding agencies concerning the tobacco problem, or to assist in the evaluation of the rudimentary policies that have been implemented.

Discussion of the tobacco control research agenda also emerged in this decade. It pointed to the need for a multi-disciplinary approach that would ensure a broad view of the issues requiring investigation, encompassing all the different aspects of tobacco control (Giovino et al. 1992). Efforts have been made to discuss what research is needed to guide political decision making for implementing national tobacco control programs and to set a minimum tobacco control research agenda, with special focus on the relationship between developing countries and the transnational determinants and approaches to control tobacco use (Samet et al. 1998). These discussions point to the need to identify an optimal policy mix for each country research agenda, ensuring sensitivity to cultural and environmental factors. Surveys of the general population and specific groups, large cohort studies, low-cost case-control studies and intervention trials of smoking cessation programs were among the approaches suggested. Further discussion about the economic determinants of tobacco control pointed to the need to emphasize research in that area, with special focus on economic data collection and analysis of the cost of tobacco to the country's economy (The Economics of Tobacco Control, 1998).

All these recommendations support the need for an in-depth understanding of what the research needs are, at least in a general context, in each developing region of the world: Latin America and the Caribbean, Asia and Africa.

The effectiveness of comprehensive tobacco control policies in reducing the level of tobacco use has been demonstrated in both developed and developing countries. However, tobacco control remains a low priority in many developing countries and most tobacco control research takes place in developed countries. Such research is only partially relevant to developing countries and regions, and cannot by itself form the basis for a sound global tobacco control strategy.

Of the limited funds dedicated to tobacco control research, most are earmarked for health sector research. The bulk of these funds are allocated to laboratory, clinical and epidemiological research, with only a small fraction going to policy research. It is noteworthy that tobacco production and consumption entail enormous environmental and social costs. Nonetheless, an insignificant amount of funding is allocated to international, non-health, interdisciplinary, policy-oriented tobacco control research.

Lack of awareness on the part of policymakers and donor agencies limits the financial resources available for tobacco control research. There is also circumscribed capacity to undertake interdisciplinary policy research and this limits both the quantity and quality of such research. Thus the development and implementation of an effective global tobacco control research agenda depends, at the very least, on addressing these constraints in terms of awareness, financial support and human resources.

It is apparent that a clearly defined, global, policy-oriented tobacco control research agenda is urgently needed to: address the global problem of tobacco production and consumption; attract more funding for policy-oriented tobacco control research; build capacity to conduct policy-oriented research; and support the proposed International Framework Convention by providing policymakers with sound global tobacco control data and analysis.

Ideally, such a global agenda would build on well conceived national and regional tobacco control research agendas. For this reason, Research for International Tobacco Control (RITC) convened regional research priority-setting meetings in Latin American and the Caribbean, Asia, and Africa. The aim of the three meetings is to launch a bottom-up, proactive strategy for formulating a global tobacco control research agenda based on sound regional research agendas.

RITC is a multi-donor initiative to support research for tobacco control in the South. It is based at the International Development Research Centre in Ottawa, Canada.

Objectives and Methodology

Objectives

The general objective of the meeting was to draft a multi-disciplinary, regional research agenda for tobacco control in order to foster a strong research, funding, analysis and knowledge base for effective public policies in the three regions.

The specific objectives were to:

- bring together researchers, policymakers and advocates involved in research for tobacco control and facilitate the creation of a network

- promote strategies and capacity building in relation to research on tobacco control in each of the three regions

- motivate and encourage researchers and policymakers to work in partnership to create knowledge and build capacity for more effective public policies

- prepare a research agenda for tobacco control to guide funding and capacity building for research in the three regions

- promote multi-country and comparative research on tobacco control

- to devise mechanisms for facilitating information sharing, dissemination and policy development in each region.

Expected Outcomes

The major outcome was to be a clearly articulated regional tobacco control research agenda that would:

- take into account both regional and national realities

- specify a number of clearly defined research priorities

- entail a multi-disciplinary methodology that is cross-cutting and policy-oriented

- address gaps in research capacity, especially for policy research

- identify constraints and opportunities for dissemination and uptake of results

Meeting Format

The three-day meetings were structured around two sets of concurrent workshops and culminated in plenary sessions for group presentations and conclusions. The first set of concurrent workshops focused on the main thematic issues. The groups examined:

- research on the supply side and its determinants: tobacco production, crop substitution, the ecosystem
- research on the demand side and its determinants: epidemiology and behavioral aspects, advertising and endorsement
- research on the economics of supply and demand: taxation, trafficking, subsidies, pricing, marketing arrangements in developing countries

The second set of concurrent workshops focused on policy-oriented issues. The groups discussed:

- research on tobacco control programs: health education, behavioral models re schoolchildren, adolescents, women, etc.
- multi-disciplinary and comprehensive approaches to finding the optimal policy mix
- emerging multi-country and comparative research

For each set of three topics, participants selected the group they best fit into or could contribute to. The participants were asked prior to the meeting to prepare a 2-3-page synopsis on the state of tobacco control research in their country. This information assisted them in discussing issues in the concurrent workshops. Reports of the workshop meetings were presented and discussed at daily plenary sessions.

Cross-cutting issues were discussed during a plenary session following the workshop. Such issues included: gender, capacity building for tobacco control research, North-South and South-South collaboration, dissemination of research results and advocacy, and bridging the gap between research and policymaking.

The meetings finished with a plenary session and concluding remarks focusing on the development of a regional tobacco research agenda. These regional tobacco research control agendas would eventually be shared and used as the basis for defining an international global agenda for developing country tobacco control research, based on a bottom-up approach.

The regional meeting for Latin America and the Caribbean was held in Rio de Janeiro, Brazil, from 17 to 19 August 1998. In order to maximize the outcome of the discussions, the number of participants was limited to 16, plus staff from Research for International Tobacco Control (RITC) and the International Development Research Centre (IDRC). As it was neither feasible nor cost-effective to bring together representatives of each

country and each area of expertise, some countries were selected to participate based on their geographic, political and strategic importance in terms of tobacco control in the region. Individual participants were selected based on geographic distribution, research background and ability to actively participate in discussions both in English and in Spanish. At least one person from Central America and one from the Caribbean were to be included, in addition to the South American representatives.

The countries initially invited were Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Mexico, Trinidad and Tobago, and Venezuela. Due to scheduling problems (Chile, Mexico and Brazil), travel complications (Cuba and Colombia), and difficulty in locating some experts (Trinidad Tobago, Costa Rica and Argentina), there were some changes to the initial participant list. The final list included participants from Argentina, Brazil, Colombia, Uruguay and Venezuela, plus observers from Canada, Thailand and the United States. RITC/IDRC staff and Pan American Health Organization (PAHO) representatives also participated.

The preference was for heterogeneity rather than homogeneity of expertise to avoid "inbreeding" and allow for "cross-fertilization" of ideas. The research backgrounds of the participants covered the social and behavioral sciences, economics, education, environmental studies, epidemiology, geography, law, toxicology, and program planning and evaluation. In addition to this disciplinary mix, participants identified themselves as researchers, policymakers or advocates, contributing to a final policy-oriented research agenda reflecting all these facets.

A ratio of research, policymaking and advocacy of 5:3:2 was targeted, so that between eight and 10 persons had research as their main interest; four to five had policy-making, and one or two had advocacy as their main interest. Within the research group, there were two to three health-related researchers, two economists, one or two environmental researchers and one other.

The regional meeting for Asia was held in Pattaya, Thailand, from 11 to 13 November, 1998. It was jointly organized by the Bangkok-based Thailand Health Promotion Institute (THPI) and RITC.

A total of 18 participants from Cambodia, China, India, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Thailand and Vietnam attended. There were also seven observers from Turkey, Zimbabwe, RITC and IDRC. The backgrounds of the 18 regional participants included: economics, epidemiology, health promotion, health systems research, oncology and public health.

Although the aim was to have researchers, policymakers and advocates represented in a proportion of 5:3:2, the mix of those who were able to attend did not approach this ideal, being composed mainly of researchers and practitioners, albeit some with close connections to policymakers.

The regional meeting for East, Central and Southern Africa (ECSA) was held in Juliasdale (Nyanga), Zimbabwe, from 11 to 13 January, 1999. The purpose of the meeting was to bring together ECSA researchers, policymakers and community representatives to identify critical economic, social, environmental, legal and health problems brought about by tobacco production and consumption in their countries. The aim was to develop a multidisciplinary regional agenda for tobacco control research. Its fundamental purpose was to create strategic information for the development of effective public policies for tobacco control in the affected countries.

The meeting gathered a select group of 28 experts on tobacco control from the public sector, civil society and the international donor community. The ECSA countries represented were Kenya, Lesotho, Malawi, South Africa, Swaziland, Uganda and Zimbabwe. Mozambique, Namibia, Tanzania and Zambia, also part of the ECSA region, were also invited, but for logistic and other reasons were unable to attend. It was anticipated that the countries actually participating in the meeting would adequately represent the range of tobacco control problems common to the ECSA region.

The background of the 18 participants ranged from researchers in health and agricultural sciences to advocates and policymakers. Specifically, there were three policymakers: the Zimbabwe Minister of Health and Child Welfare, the Lesotho Permanent Secretary of Health and the Swaziland Deputy Director of Health. The majority of participants were advocates (eight) and researchers (seven).

Other participants included two observers from Brazil and Thailand, representing the Latin America and Caribbean and Asian regional meetings, respectively; two RITC staff members and two IDRC staff from the Regional Office for Southern Africa; an individual from the Swedish National Institute of Public Health, representing the Swedish International Development Cooperation Agency (Sida); one participant from the Center for Disease Control and Prevention (CDC) in Atlanta; and two representing the World Health Organization Regional Office for Africa (WHO/AFRO) and the WHO office in Harare, respectively.

The meeting was organized as a joint effort on the part of Research for International Tobacco Control (RITC) and the Blair Research Institute (BRI) and the Biomedical Research and Training Institute (BRTI) in Harare.

Results: Latin America and the Caribbean

Background

Tobacco use is a major public health problem in the world, causing 17.7% of deaths in developed countries and 10.9% of deaths in developing countries. In the next century, tobacco is expected to kill more people than any single disease worldwide. This can be translated into a person dying every 10 minutes as the result of tobacco use (WHO, 1998b). Despite the difficulties in obtaining consistent data for the region, the available information suggests that smoking has steadily become a major public health problem in many Latin American and Caribbean countries. The region includes 33 countries, characterized by great cultural, demographic, linguistic and other diversity.

Almost all Latin American and Caribbean countries manufacture tobacco products (29 countries) or grow tobacco (24 countries). In 1994, Brazil, Argentina and Mexico were among the leading producers of both raw and manufactured tobacco in the Western Hemisphere. In the same year, Brazil, Venezuela and Colombia were among the 25 leading exporters of cigarettes, and Brazil, Colombia and the Dominican Republic were among the 25 leading exporters of raw tobacco.

Smuggling is a problem in Latin American and Caribbean countries. A substantial illegal trade in cigarettes, mostly with neighboring countries, is reported in at least 16 countries in the region. For example, in Guyana and Paraguay (1993), it is estimated that illegally imported cigarettes account for 50% of domestic consumption. Population income, tobacco taxes and cigarette prices are different in each country, affecting local tobacco consumption. Two studies of price elasticity of cigarettes in relation to demand in the region (Vivas et al. 1993; *Ministério da Saúde* 1998) came to the same conclusion as other studies in the literature, highlighting that children and low income populations are particularly responsive to changes in cigarette prices related to changes in taxes. Differences in prices and taxation in the region increase the potential for smuggling (*Ministério da Saúde* 1998). Transnational tobacco companies (TTC) are expanding their markets, increasing their ownership of factories in many Latin American and Caribbean countries in the 1990s. They are currently present throughout the region, increasingly manufacturing, trading and marketing tobacco products, focusing on a promising tobacco consumer market.

The region is heterogeneous with regard to tobacco use. Factors that determine consumption, as well as the impact of smoking on individual countries' mortality profiles, will determine the prioritization of tobacco control measures and lines of research.

In most Latin American and Caribbean countries, tobacco is consumed in the form of filtered cigarettes, but other forms have been described. In 1989, indigenous people in Colombia, mostly women, still used reverse smoking, that is, putting the lit end of the cigarette inside the mouth. In the same year, 15% of adults in Cuba smoked cigars. By

1992, about 28% of the tobacco consumed in Panama was in the form of roll-your-own cigarettes, while snuff and chewing tobacco accounted for 5 to 10% of the tobacco consumed in Paraguay (WHO 1997a).

General population surveys conducted among adults from 1988 to 1992 in 17 Latin American and Caribbean countries estimated that the smoking prevalence among men varied from 19.3% in the Bahamas to 66.3% in the Dominican Republic. Estimated smoking prevalence among women varied from 3.8% in the Bahamas to 26.6% in Uruguay. Per capita cigarette consumption showed an astonishing increase between 1970-1972 and 1990-1992 in some countries like Ecuador (33%), Surinam (61%) and Haiti (215%). Haiti was the country with the lowest per capita consumption in the region in 1970-1972. On the other hand, other countries showed a decrease in per capita consumption over the same period, for instance Jamaica (-39%) and Mexico (-40%).

High rates of lung cancer mortality among men were described in Uruguay and Argentina in the early 1990s, indicating that death rates from tobacco-related diseases are becoming similar to those in the USA and Canada. Previous estimates of 135 000 tobacco-related deaths in the Latin America and Caribbean region (USDHHS 1992) do not reflect the growth of tobacco as a public health problem with an increasing impact in the region.

The increasing invasion of TTC in the region, and the accompanying economic and marketing pressures on those societies, is not paralleled by a change in the public health agenda. Most countries' public health priorities are still focused exclusively on infectious diseases, with little or no priority assigned to tobacco control (Costa e Silva 1998), despite the impact that tobacco has and will have in the morbidity and mortality rates of most countries. Most of the Latin American and Caribbean countries have emerging tobacco control action, usually mass education campaigns around single events, such as "No-Tobacco Day," but continuous and systematic tobacco control activities are usually not implemented at the national level and down to the local level. Nongovernmental organizations (NGOs) undertaking modest and isolated actions are the only institutions in charge of tobacco control activities in a number of the countries of the region where a government office on smoking and health is still not established. Regional policies to counteract the regional approach of TTC, as well as multi-country policies based on economics, have generally not been addressed in the region. The lack of comprehensive tobacco control legislation, tobacco control policies based on the economics of tobacco and intervention studies points to the need for further research and policy action.

Tobacco Control Research Constraints

There is evidence that existing data and available tobacco research are not enough to mobilize governments to give priority to tobacco control. Despite isolated efforts in

most countries of the region, there is little knowledge about tobacco. This lack of knowledge plays a key role in the lack of commitment of major politicians and country leadership to allocate significant funds for the development and implementation of tobacco control policies. This lack of political will clearly points to the need for more information.

Even when tobacco control research is considered a priority, there is a need for a change in its focus. There are real barriers to thinking about tobacco control research in a holistic way, not just in relation to health issues. It is difficult for "traditional" public health advocates to think about tobacco control from different perspectives. Public health professionals are not used to looking to other professionals for the contribution they can make to tobacco control. For instance, lack of knowledge about the tobacco production process leads to insufficient understanding of the economic and political determinants of the tobacco trade and the impact these factors have on consumption. This type of information is essential for policymakers. The agenda for tobacco control research needs, as its starting point, a multidisciplinary understanding of the problem.

It is also important to note that both qualitative and quantitative research methods are equally important and useful in tobacco control research. It is necessary to overcome the general skepticism regarding qualitative research that has been prevalent in some research and academic circles. Dismissing qualitative methods leads to a very narrow view of the problem and the lack of qualitative data may lead to the development of strategies that will fail at the implementation and enforcement stages.

Another issue in the tobacco control agenda for the region is the need for a policy-oriented research agenda that is guided by a clear, regional strategy identifying the research needs and how research results can assist in the development of governmental tobacco control policies and nongovernmental strategies. In developing a regional research-based policy, one must not fall into copying models from developed countries without assessing their usefulness and relevance for developing countries. A regional research policy agenda must have a practical and culturally oriented perspective.

There are a number of well-known research centres in the region, but few scientists are involved in tobacco research and an adequate research team is not easily found. Most of the necessary information is available at the local level, or at the program level, but there is not yet a strong sense that information gathering and analysis are integral parts of tobacco control. Most advocates and program managers, even when they have a strong belief in research-based practice, lack the will, the time or the ability to gather information in a systematic, methodical way. Little priority is given or funds allocated to research and existing research is not utilized by policymakers.

In developing a tobacco control research agenda, the main concerns should be capacity building, promoting a research "culture" and developing strategies to motivate

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scientists. In addition there is a need for continuous and sustained funding, and development of creative and cheaper ways of conducting research.

Collaboration between national agencies and between nongovernmental and academic groups would be ideal. There is also a need to increase the number of scientists involved. To achieve that increase, a reevaluation of the scientific paradigm is necessary, since policy-oriented tobacco research is not considered a"scientific issue" and publication, comparison and scientific criticism of results have not been common outcomes of policy-oriented research in the region.

It is crucial to develop a research agenda that takes into account the particularities of the region. It is important to develop a macro-perspective that is solidly based on information provided by research at the local level. At the same time, one must be aware of the regional influence and the impact bordering countries have on each other. This awareness leads to the next point regarding the tobacco control agenda, that is, to define local/state/country/regional/continental strategies, rather than only country-centered agendas. Regular, systematic data collection and the dissemination and sharing of information, will allow the region to develop the multidisciplinary, regional surveillance system that is essential to respond to the tobacco epidemic.

Main Thematic Issues

Research on the Supply Side and its Determinants: Tobacco Production, Crop Substitution and Ecosystem

The participants identified four problems related to **tobacco production**, the first being lack of baseline information on, and historical analysis of, tobacco production, manufacturing and trade trends in each country of the region. There is a need to document current and historical perspectives on tobacco growing areas, industrial plants, market share and available brands, and to assess the number of direct and indirect jobs generated by tobacco agriculture, manufacturing and retail.

Policy implications
To provide background for agricultural and economic tobacco control policies. To monitor the tobacco production profile, trends and trade. To ensure comparability of data between countries and regions. To promote inter-country policies and determine the extent of intervention needed. To determine and evaluate the social impact of tobacco production in generating employment.

The second problem identified by the participants concerns the lack of information about different models of tobacco production and replacement **crop alternatives**. There is a need to assess the impact of tobacco growing on social and economic status at the local community level and on farm families; to measure the prevalence and determinants of predominant tobacco crop models based on family-scale production

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and an economic subsistence system; to determine the relationship between tobacco farmers and the transnational tobacco companies (TTC); to study the similarities and differences between patterns of agricultural systems in different countries, with emphasis on social issues and poverty; to analyze local distribution of costs and benefits under different tobacco production systems; and to study alternatives to tobacco as a crop.

The last would involve developing an analysis of the social, environmental and economic effects of tobacco production; strategies for diversifying crops or finding alternative economic activities; ways of better managing the process, for example, overcoming resistance and vulnerability to change; and strategies to involve different stakeholders in substitution crops and economic alternatives.

Policy implications
To provide tools for empowering local farmers. To plan interventions targeting this group. To evaluate and monitor alternatives to tobacco crops.

The third problem identified by the participants was the lack of knowledge of the impact of tobacco production on the **ecosystem**, in terms of causing disruption and threatening biodiversity at both the farming and industrial levels. There is a need to document the extent of deforestation in tobacco growing areas; the magnitude of environmental pollution due to pesticides and industrial tobacco waste; the pesticides most frequently used; the processes most frequently involved in generating and disposing of industrial tobacco waste in Latin America; the post-tobacco effects of the crop on soils; and the accumulation of residues from pesticides used in tobacco production.

It is also necessary to study strategies for environmental monitoring and epidemiological surveillance systems; to evaluate the significance of environmental pollution due to tobacco production vis-à-vis that from other sources of pollution; and to study the association of different production patterns with different levels of ecosystem impact, explaining the variables involved in different ecosystem performance.

Policy implications
To evaluate and follow up the extent of ecosystem damage as tool for political change. To study the determinants of tobacco production impact on ecosystem disruption as a basis for change. To provide a basis for comprehensive ecosystem preservation legislation and intervention programs.

The fourth problem identified by the participants was the lack of information about occupational health risks due to tobacco production, and their extension to the general population of tobacco growing areas. There is a need to study the determinants and the prevalence of occupational health risks due to tobacco production; to develop an epidemiological profile of regions where tobacco is the predominant crop; to establish the causal role of tobacco production in generating indirect health risks for the general

population due to long-distance contamination with pesticides and to pesticide levels in cigarettes; and to determine how these risks affect the health profile of the general population.

Moreover, there is a need to investigate TTC strategies with respect to the genetic manipulation of tobacco seeds and its potential effect on health; and to develop strategies to maintain a sustainable system for monitoring components in cigarettes, for example, nicotine, tar, pesticides and nicotine delivery products. The last would provide data for historical series and inter-country comparisons.

Policy implications
To define appropriate strategies to study, control and inform the population about exposure to unhealthy substances and processes involved in tobacco production and consumption. To disseminate knowledge about potential health effects of different pesticides and levels of exposure during tobacco production among tobacco workers and neighboring populations. To develop tools to support strong legislation and policies to protect tobacco production workers' health.

SYNOPSIS OF THE MAIN RESEARCH QUESTIONS ON THE SUPPLY SIDE AND ITS DETERMINANTS: TOBACCO PRODUCTION, CROP SUBSTITUTION AND ECOSYSTEM

Problems	Needs/Objectives	Research Questions	Policy Implications
Lack of knowledge about the tobacco production chain in each country.	To gather and document baseline information and develop historical analyses.	How are individual countries and the region involved in or dependent on the tobacco production chain?	Agricultural and economic-based tobacco control interventions, with country and regional perspectives.
Lack of information about the social impact of the tobacco production chain and the potential for and effects of tobacco replacement.	To better understand the socio-economic impact of changes in tobacco production on farmers, families and the community.	How can tobacco production be replaced in the face of economic determinants and focusing on the social aspects of alternative crops?	Acceptable proposals for tobacco production replacement focusing on socio-economic determinants.
Lack of knowledge about ecosystem damages and health risks of the tobacco production chain.	To investigate tobacco production-related ecosystem and health damages, including gender determinants.	What is the extent of the damage to the ecosystem and the health risks posed by the tobacco production chain?	Environmental and human protection policies, such as education and occupational health legislation.

Research on the demand side and its determinants (epidemiology and behavioral aspects, advertising and endorsement)

The first problem identified by the participants with respect to the **epidemiology and behavioral aspects** of tobacco use was the lack of a surveillance system at the national level to provide baseline epidemiological information. Such a baseline information system would provide a minimum set of information per region and country, including information by gender, age, socio-economic status, and education and cultural level.

It would allow researchers to identify short- and long-term trends; document systematic baseline information on strategically important groups, like health professionals and teachers; make inter-country comparisons; determine risk groups, focusing on cross-cultural and pattern differences; study the national burden of disease, including tobacco attributable mortality (TAM), smoking attributable mortality (SAM),

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disability-adjusted life years (DALYs), tobacco attributable mortality, years of potential life lost (YPLL), tobacco-related morbidity and mortality trends, and maturity index; and devise cost-effective, practical and feasible surveillance systems for monitoring the demand.

Related to this is the need to identify existing resources and personnel for tobacco control research. These would include existing and potential research networks, research institutions, and on-going data collection and surveillance systems at the national and state levels, as well as potential research funding and sponsorship. It would include both governmental and nongovernmental organizations (GOs and NGOs).

It would also involve compiling background information and documenting the needs of potential and actual researchers and policymakers; identifying ways to stimulate tobacco control at the state and national levels; encouraging interdisciplinary research; and updating potential and existing research activities at the state and national levels, their results and applicability.

Policy implications
To gather baseline information on the research and policy background and its determinants. To provide strategic information and evaluation as a cornerstone from which to influence political decision-making.

The second problem identified by the participants with respect to the demand side concerned the lack of information about risk and changes in the determinant factors affecting tobacco initiation and use among the general population and specific groups in the region. Why do some users become addicted and others not? Are there differences in genetic susceptibility and quit rates? What role do advertising and marketing strategies, peer pressure, role models, etc. play in the initiation of tobacco use?

On the other hand, what perceptions and behaviors are related to not initiating smoking and to successfully quitting smoking? Issues to be examined would be the perception of risk, the side effects of quitting, and the kind of motivation that results in behavioral choices and behavioral change.

Policy implications
To identify the main groups at risk of becoming tobacco users, thus providing tools to develop adequate prevention strategies. To identify the impact and cost-effectiveness of single and combined tobacco control strategies to be used in several countries.

SYNOPSIS OF THE MAIN RESEARCH QUESTIONS ON THE DEMAND SIDE AND ITS DETERMINANTS: EPIDEMIOLOGY AND BEHAVIORAL ASPECTS, ADVERTISING AND ENDORSEMENT

Problems	Needs/Objectives	Research Questions	Policy Implications
Lack of information on smoking prevalence, its determinants and the burden of tobacco-related disease in each country.	To document and monitor the real extent of tobacco use, its determinants and health impacts.	What is the real situation of tobacco use in different groups and populations in Latin American and Caribbean countries? What is the national burden of tobacco-related disease?	Country-level information to mobilize government to assign priority to tobacco control and to provide strategic information for implementing and evaluating tobacco control programs.
Lack of knowledge about smoking behavior and addiction in different groups, focusing on educational, ethnic, social and gender determinants.	To understand the determinants of tobacco initiation, use and cessation.	How can smoking be prevented and what is the role of advertising and socio-cultural determinants in the process?	Identification of groups at risk to become smokers, as well as potential quitters. Evaluation of the impact of single and combined strategies to control tobacco use.

Research on the economics of supply and demand (excise taxes, pricing, etc.)

The first problem identified by the participants with respect to the economics of supply and demand is poor understanding of the social, economic and distribution impact of various tax policy regimes. They identified the need to conduct taxation incidence and impact studies, to assess distribution issues, and to collect baseline information on prices, disaggregated by product and multivariate or bivariate analysis, as appropriate.

Policy implication
To find the optimal balance between raising revenue and curtailing consumption.

The second problem identified by the participants was the lack of knowledge concerning the economic relationships in the tobacco production-through-retail chain. There is a need to document baseline information on the economics in growing or grower regions, on TTC and state entities; on the economics and trends in exports and domestic consumption; and on government policies in terms of subsidies and loans to tobacco producers. These might be monetary or non-monetary; made to individuals or to communities; and take the form of material, equipment, or credit. The market relationship, i.e. bargaining, negotiation and pricing, also needs to be looked at.

Policy implications
To identify clearly who benefits and who loses in the tobacco production chain in order to make a good case for advocacy and sectoral policies. To determine short- and long-term losses and gains, in order to develop policies that can address both.

The third problem identified by the participants was the lack of knowledge of the implications at the macro level of changes in aggregated trends in the production, consumption and trade of both manufactured and non-manufactured tobacco. There is a need to determine the importance of tobacco in the balance of payments (income versus disbursement) and to document the balance between exports and imports.

Policy implication
To identify interventions using the balance of payment argument.

SYNOPSIS OF THE MAIN RESEARCH QUESTIONS ON THE SUPPLY AND DEMAND SIDE AND THEIR DETERMINANTS (EXCISE TAXES, PRICING, ETC.)

Problems	Needs/Objectives	Research Questions	Policy Implications
Poor understanding of the distribution impact of different tax policy regimes.	To collect economic information on and conduct studies of the incidence, impact, and distribution of different taxes.	How do cigarette prices answer to changes in taxes? What is the distribution of taxes in the production and consumption chain?	To provide the basis for changes in taxation, raising revenues and reducing consumption.
Lack of knowledge of the economic relationships in the production-to-retail chain and changes in aggregated trends in tobacco production, consumption and trade.	To document baseline information on trends in exports and imports, balance of payments, the role of the tobacco industry, loans and subsidies.	Who loses and who benefits in the tobacco production chain? How important is tobacco in the balance of payments?	To determine the short and long term economic losses and gains in order to develop policies that can address both.

Policy and Program Issues

Research on tobacco control programs: health education, behavioral models on schoolchildren, adolescents, women, etc.

The first problem identified by the participants was the lack of information about tobacco control programs and their evaluation. Specifically, there is a need to update existing and potential programs in the region, such as mass media campaigns, school-based programs, etc.; evaluate their results and applicability in other countries and regions; and make comparisons between countries with different levels of smoking prevalence.

The researchers also recognized the need to determine the role of educational campaigns in preventing initiation, reducing consumption and inciting cessation of smoking; to study the impact and cost-effectiveness of workplace-based education programs, local and broad social marketing approaches, and behavioral modification models; to evaluate the effectiveness of multiple- versus single-approach tobacco control intervention programs; and to document and study tobacco control activities as a part of different health promotion programs and country health systems.

Policy implications
To incorporate tobacco control activities and actions in well established national health programs. To strengthen tobacco control coalitions and networks. To understand the determinants of tobacco control policy development from different perspectives. To adjust strategies based on evaluation and cost-effectiveness studies.

The second problem concerns programs targeting school-age children and adolescents, and their potential impact. Specifically, there is a need to describe schools, educational groups (teachers' unions and associations), school personnel and students; to identify potential partnerships with children's rights and children's health associations and advocates; to study the profile of new smokers among children and adolescents using an inventory of tools, methods and interventions existing in the region; to evaluate the impact and cost-effectiveness of school-based education programs; to conduct qualitative research on teachers' knowledge, perceptions, beliefs and attitudes to tobacco; to study models that provide teachers with tools for tobacco prevention among children and adolescents; and to conduct qualitative research on adolescents' and children's knowledge, perception, beliefs and attitudes towards adult influence, media influence and peer influence.

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Policy implications
To assess country needs in terms of continuous programs targeting children and adolescents, developing coalitions and networks. To understand policy determinants in child-, adolescent- and teacher- focused programs, including qualitative approaches. To develop an adequate methodology for school-based intervention, including cost-effectiveness studies.

The third problem concerns programs targeting health professionals and their potential impact. There is a need to document and describe (in quantitative and qualitative terms) health institutions, health-related professional associations (medical associations, health professionals unions), and health personnel; to study potential partnerships with health associations and unions; to study the impact and cost-effectiveness of health care unit-based education programs; and to study the potential influence of health professionals and health services policies on tobacco control.

Policy implications
To assess country needs in terms of continuous programs for health professionals and patients, and developing coalitions and networks. To understand the policy determinants in health professional-focused programs, including qualitative approaches. To develop an adequate methodology for health care unit-based interventions, including cost-effectiveness studies.

The fourth problem identified by the participants was that women and tobacco-related issues are not well known and understood. There is a need to study programs targeting women of reproductive age and during pregnancy, both interventions aimed at smoking cessation and reducing exposure to environmental tobacco smoke (ETS); and the role of the physician in pre-natal care interventions.

Strategies to avoid an increase in the prevalence of smoking among women in countries where the prevalence is low need to be identified. More information is needed on attitudes, beliefs and cultural aspects of tobacco use among women; the effect of advertisements, fashion, and role models in tobacco control activities and programs; potential partnerships with women's rights and women's health associations; and women's participation in different stages of tobacco production and the potential consequences for women's health.

Policy implication
To have a better understanding of tobacco and women's issues, providing the basis for tobacco control programs targeting women.

SYNOPSIS OF THE MAIN RESEARCH QUESTIONS ON TOBACCO CONTROL PROGRAMS: HEALTH EDUCATION, BEHAVIORAL MODELS - SCHOOLCHILDREN, ADOLESCENTS, HEALTH CARE PROFESSIONALS, WOMEN, ETC.

Problems	Needs/Objectives	Research Questions	Policy Implications
Lack of information about tobacco control programs and their evaluation.	To understand the determinants of policy development in tobacco control from different perspectives.	What is the impact and cost effectiveness of different approaches to tobacco control programs, including social marketing and workplace-based education programs?	To identify better strategies to address tobacco control, taking into account human resources, limited economic resources, and national health policies.
Lack of information about programs for school-age children and adolescents and their potential impact.	To document and study tobacco use by school-age children, adolescents and teachers. To study existing programs and their policy determinants, including socio-cultural and gender perspectives.	How can tobacco use among children and adolescents be controlled in an effective way through school-based interventions and other strategies?	To identify better strategies to address tobacco control among children and teenagers through continuous programs.
Lack of information about health professional-focused programs and health care facilities-based interventions.	To determine the potential influence of health services policies on tobacco control.	How can health care professionals be reached? What is the impact of health care facilities-based programs.	To identify strategies targeting health care professionals and health care facilities as participants in continuous tobacco control programs
Lack of knowledge about women and tobacco-related issues.	To understand the determinants of tobacco use among women in all age groups and during pregnancy and nursing.	How can women be reached in different tobacco control contexts.	To provide the basis for tobacco control programs targeting women.

Research on tobacco control policy: multidisciplinary and comprehensive approaches to an optimal policy mix

The first problem related to tobacco control policy is the lack of information about tobacco control legislation. Specifically, there is a need to update existing and potential tobacco control and tobacco incentive legislation and its applicability; to determine the potential influence of existing legislation, regulations, rights charters and national constitutions on tobacco control legislation; to examine the enforcement of existing and potential tobacco control legislation, mainly, why some regulations are enforced and others are not; to determine the role of legislation in the prevention, reduction and

cessation of smoking through interventions such as a partial or total ban on advertising, restriction of sales to minors, smoke-free environments, health warnings, public transportation policies, etc.; and to assess the impact of single versus multiple legislation on tobacco control.

Policy implications
To provide information on the potential of existing laws to further the implementation of tobacco control legislation and policy. To provide information about determining factors and the impact of legislation on tobacco control.

The second problem is lack of information about economic-oriented programs. There is a need to update existing and potential economic-oriented tobacco programs and projects in Latin American and Caribbean countries and their applicability (incentive and control); to study the impact of different economic policies on tobacco control (single versus multiple); and to study the potential influence of existing regulations and laws and their determining factors in tobacco control economic policies.

Policy implications
To provide information about the impact of existing economic measures and economic-oriented tobacco control programs, and their potential for furthering the implementation of economic measures and related policies. To provide information about determinant factors and impact of existing legislation on tobacco control economic policies.

The third problem identified by the participants is the lack of information about tobacco agriculture and environmental policies. This needs to be addressed by updating existing and potential tobacco agricultural programs, projects and incentives with a view to promoting tobacco control; comparing general agricultural policies with tobacco crop policies; carrying out quantitative research on tobacco farming-related health hazards with a view to devising and introducing healthy lifestyle programs among tobacco farmers; studying the effect of different policies on tobacco farming-related deforestation; and identifying strategies for better understanding the attitudes and beliefs of tobacco farmers, and raising public awareness of ecosystem damage due to tobacco farming.

Policy implications
To provide the basis for developing agricultural policies constituting disincentives to tobacco farming and promoting healthy lifestyles among tobacco farmers. To provide a basis for counteracting deforestation and ecosystem damage related to tobacco farming.

The fourth problem concerns the lack of information on national and transnational tobacco company (TTC) strategies. Specifically, there is a need to document information about tobacco industry lobbying, communication and marketing, and

consumer targeting; and to investigate determinants of TTC policies and their consequences for the development of tobacco control in the region.

Policy implication
To gather baseline information to counteract TTC strategies and reorient tobacco control programs.

SYNOPSIS OF THE MAIN RESEARCH QUESTIONS ON TOBACCO CONTROL POLICY: APPROACHES TO OPTIMAL POLICY MIX

Problems	Needs/Objectives	Research Questions	Policy Implications
Lack of information about tobacco control legislation.	To update and study tobacco legislation, its role in consumption, and its implementation and enforcement.	What works in terms of legislation? What are its determinants?	To provide the basis for further implementation of legislation and for the introduction of new legislation.
Lack of information about economic-oriented programs.	To update and study economic policies in the political and legislative context of each country.	How can economic-oriented programs be implemented in a national or multi-country context?	To provide a basis for evaluating previous economic-oriented programs. To establish new economic strategies to control tobacco use.
Lack of information about tobacco agriculture and environmental policies.	To document and study agriculture-oriented programs and strategies to raise farmers' awareness of healthy lifestyles and environmental preservation.	How do agricultural policies affect tobacco production and farmers? What is their impact on the environment?	To provide the basis for devising incentives for tobacco crop alternatives, ecosystem preservation and healthier lifestyles for farmers.
Lack of information on national and TTC strategies.	To gather baseline information on national and TTC strategies for action in a national and multi-country context.	How does the tobacco industry react to different political, social, and economic scenarios?	To provide a basis for counteracting TTC strategies and reorienting tobacco control program strategies.

Emerging research: multi-country and comparative research in Latin America

Prices and taxes are not harmonized in Latin America and the Caribbean. There is a wide variation in taxation across countries and its impact in terms of purchasing power.

It is therefore difficult to prevent smuggling and effectively control consumption. Indeed, there is high dependence on, and culture of, raising revenues through smuggling.

There is a need to assess the nature and relative importance of the reasons for the lack of harmonization, including the potential utilization of such agreements as the MERCOSUR and the North American Free Trade Agreement (NAFTA) as political instruments to limit tobacco control legislation. There is also a need to document trends and dynamics of expected versus actual revenues in relation to prices and taxes at the national level according to different classes of cigarettes, smuggled versus other brands of cigarettes and national versus other brands of cigarettes.

Policy implication
To promote upward harmonization of prices and taxes as an effective tool to reduce or eliminate smuggling and therefore reduce consumption.

There is no regional surveillance system with a systematic approach to data collection. Such a system could identify those who work in tobacco control research and their needs by documenting state and national networks, including governmental and nongovernmental organizations (GOs and NGOs); identifying actual or potential research institutions in multi-centre projects; documenting the background and needs of actual and potential researchers and policymakers; and identifying ways to stimulate multi-country and interdisciplinary research on tobacco control.

Baseline information could be obtained by identifying established and potential surveillance systems in every country, as well as available and ongoing research and data collection; and updating existing and potential research activities in Latin America and the Caribbean, their results and applicability.

Policy implications
To identify tobacco control policymakers and researchers and their needs. To evaluate trends and establish comparisons between countries in order to advocate and measure the impact of policies. To provide the basis for establishing incentives for tobacco control research in the region.

There is a lack of information related to the transnational tobacco companies (TTC) strategy on cross-border communication and marketing. Specifically, there is a need to document the tobacco industry's expenditure across countries by monitoring its cross-border communication and marketing strategies, such as duty-free broadcasting, cable channel international sponsorship of cultural and sports events, sampling and dispensing cigarettes through vending machines; to study the impact of cross-border communication on national tobacco consumption; to identify mechanisms for avoiding global pro-tobacco agreements; and to provide the basis for global tobacco control.

Policy implication
To prevent and counteract cross-border tobacco industry strategies.

There is a lack of cross-border indoors smoke-free policies. This need could be addressed by updating existing international regulations and agreements with respect to international airlines, airports, buses, trains, and ships; and studying the lobbying strategies and impact of smoking-related public transportation policies in a number of countries,.

Policy implication
To promote a smoke free environment in multi-country areas.

There is a lack of information about the relationships between production, trade, and globalization of tobacco products. This need could be addressed by developing studies on the relationship between tobacco imports and exports and production links, in the context of opening economies and globalization, including the extent of the *maquiladora* phenomenon.

SYNOPSIS OF THE MAIN EMERGING RESEARCH QUESTIONS WITH RESPECT TO MULTI-COUNTRY AND COMPARATIVE RESEARCH

Problems	Needs/Objectives	Research Questions	Policy Implications
Lack of harmonization between prices and taxes in Latin American and Caribbean countries.	To assess the reasons for the lack of harmonization and to document trends and dynamics.	How can harmonization between tobacco product prices and taxes be achieved in the region?	To prevent contraband and effectively control consumption.
Lack of a regional surveillance system with a systematic approach to data collection.	To provide activists, policymakers and researchers with reliable and up-to-date information focusing on trends.	What are the regional trends in tobacco use and policies? What are tobacco research activities in the region?	To stimulate tobacco control research and consequent capacity building programs. To provide cross-border comparable baseline information with policy implications.
Lack of knowledge about TTC strategy for cross-border communication and marketing.	To document and study the impact of tobacco publicity in terms of cross-border communication (duty free, cable channel, etc.).	How can cross-border and TTC strategies be effectively counteracted?	To prevent and counteract TTC strategies.

Cross-cutting issues

Gender

There was a consensus among participants that a gender perspective should be central to any tobacco control research, policy or activity in any region, country or viewpoint. The following are some of the items that emerged from the meeting and were recommended as additional inputs to the tobacco control agenda:

- to include gender issues in all research, whether observational or interventionist, causal or policy-oriented, qualitative or quantitative
- to study gender-oriented programs, focusing particularly on children and adolescents
- to study gender-related determinants of smoking, including advertising and promotion, peer pressure and response to tobacco prices
- to include issues related to women in all age groups, not just women of reproductive age

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Capacity building for tobacco control research

There was a consensus among the participants that capacity building for tobacco control research is a basic prerequisite to ensuring that there are sufficient human resources in Latin America and the Caribbean to develop and implement a broad, consistent research agenda.

Before capacity-building can be achieved, however, it is necessary to document the professional profile of the region. This would include documenting the characteristics of potential tobacco control personnel (gender, age, profession, background); determining their skills in epidemiology and program evaluation; and determining the percentage of activists and researchers who can speak English.

It will then be necessary to identify the needs of the tobacco control advocates in the region; to outline the basic training content entailed in a tobacco control capacity building agenda; to identify partners in the process of stimulating policymakers and advocates to obtain funds for conduct tobacco control research; to discover ways of interesting researchers and scientists in tobacco-related issues; to discover ways of convincing research funding institutions to make tobacco control a priority in their research agenda; and to identify the best and most cost-effectiveness policies to build capacity in tobacco control research. Such policies would emphasize identification of partners and funding opportunities; specific training courses for tobacco control personnel; participation in meetings and conferences; distance courses through the mail, the Internet, training kits, etc.; and the dissemination of research results and advocacy.

Dissemination of research results and advocacy

The participants recognized that to have a solid data base for the dissemination of research results and advocacy, it will be necessary to:

▸ use existing, or develop a specific set of, basic guidelines in the national language on how to conduct a survey, how to collect economic data, how to update legislation, and how to calculate smoking attributable mortality (SAM) and tobacco attributable mortality (TAM)

▸ develop specific materials for the academic and activist communities, focusing on policy-oriented research in the form of newspapers, magazines and the Internet

▸ to stimulate publication of papers in both national and international scientific publications, so as to ensure that scientific publications are available in Spanish and Portuguese, and not just in English, which is not easily accessible to tobacco control activists

- to participate in multidisciplinary professional conferences and meetings

- to promote specific training workshops and meetings

North-South and South-South collaboration

North-South and South-South collaboration should be stimulated in order to reach the objectives described above. It is important to emphasize that studies attempting to prove the causal relationship between tobacco and disease should not be given the highest priority. This relationship has been well established and is not as sensitive to cultural factors as other research topics. However, low-cost case-control studies to evaluate the impact of tobacco use on population health should be considered as an additional tool to mobilize the political will to implement tobacco control programs.

When developing a research agenda for Latin America and the Caribbean, researchers need to ask for collaboration on issues where the North has had more experience, such as in the development of nation-wide programs, counter-advertisements and monitoring the tobacco industry. This will help avoid duplication of effort and expense. Expertise in tobacco research, advocacy and policy-making is also found in developed countries and international health agencies. These can assist in building human capacity and skills in building coalitions and networks. However, a critical understanding of others' experiences should be invoked when reproducing a developed country's model, with special emphasis on evaluating the feasibility and reliability of research and policy instruments in different cultural contexts.

South-South collaboration could provide an "economy of scale," with several research centres working together on the same research objective. In addition to the cost advantage, such collaboration would provide readily comparable data, which could guide regional policy-making. At the same time, researchers from the North can learn from their colleagues in the South about regional economic issues, allocation of scarce resources and national level tobacco control. This bilateral collaboration could only improve the understanding of the complex issues involved in tobacco control in a world where globalization of markets is a reality.

Research and Policymaking: Bridging the Gap

Suggestions for enhancing the relationship between research and policies and stimulating tobacco control research in the region included: encouraging multidisciplinary professional meetings; increasing cross-border participation through fellowships and sub-regional and regional meetings; encouraging exchange of information between research institutions within and outside a given country; disseminating information within the region by developing and distributing policy briefs, fact sheets, etc.; creating a regional data base; establishing a regional tobacco control

research network; and stimulating research funding agencies to ensure that policy-oriented research receives priority funding.

Results: Asia

Background

Smoking prevalence in Asia is currently estimated at 50-60% for men and 2-10% for women. In China alone, there are 300 million smokers (more than the entire population of the USA) smoking one-third of the world's cigarettes. (Mackay 1995). Between 1965 and 1990, the Asian economies grew faster than any other part of the world. As disposable income increased, cigarettes became more affordable and tobacco consumption rose. (Chitanondh 1995). Cigarette sales have increased faster in Asia than any other part of the world during the 1990's, and will account for 52% of the world market by the year 2000. Of the 10 million tobacco-attributable deaths anticipated by the year 2025, seven million will occur in developing countries; two million will be in China alone. (Lam & Mackay 1995). As smoking prevalence in Asia increases, particularly among women, and a preference for international brands replaces locally produced tobacco, the loss of foreign exchange, costs of medical and health care, costs of lost productivity, and costs to the individual and to the environment are likely to have a significant economic impact on poor countries (Mackay 1995).

As tobacco use declines in the developed world, the transnational tobacco companies (TTCs) have dramatically increased their marketing in less developed countries. Cigarette sales in Asia are expected to increase by 13.2% in volume and 18% in monetary value between 1991 and the year 2000. This is compared with a predicted global increase of 5.2% in volume and 4.4 % in monetary value (Mackay 1995). Unlike the privately-owned transnational tobacco companies, Asia's tobacco monopolies are mainly government departments that admit the health evidence with respect to tobacco use, do not promote cigarettes and generally cooperate with government health measures. In contrast, the TTCs deny the negative health impact of tobacco use, aggressively promote their products and try to prevent tobacco control measures. Their profits, for the most part, are returned to shareholders in the West.

The intrusion of transnational tobacco companies into Asian markets has been aggressive. In addition to employing their own well-funded, well-orchestrated political and media lobbying tactics, the transnational tobacco companies have had a powerful ally in the form of the US government. The US government has threatened unilateral, retaliatory trade sanctions against several Asian countries, including Japan, Republic of Korea, Taiwan and Thailand, if these countries will not allow market access to American products and promotion, even in countries with laws banning tobacco advertising. Their corporate wealth has allowed them to purchase the best talent in advertising and sales promotion, and to provide generous donations and sponsorship. They employ farmers, factory workers, retailers and even scientists who travel to Asia to substantiate the industry's claim that the harmfulness of active and passive smoking has not yet been proven (Lam & Mackay 1995).

Opposition to this forceful invasion into Asian markets is limited. There are few tobacco control advocates in Asia and those that do exist tend to work in isolation. Few governments are strongly committed to tobacco control and those health ministers who are supportive often encounter opposition from their colleagues in the ministries of trade and finance. Funding for tobacco control is inadequate in all countries. (Lam & Mackay 1995).

Fortunately, regional organizations are responding to the growing threat. In 1995, the WHO Western Pacific Regional Office launched the second Action Plan on Tobacco or Health for 1995-1999. The Plan called for all countries and areas to implement national tobacco control policies, in particular a "Tobacco advertising-free region by the year 2000". The International Union Against Cancer (UICC) has been generous in contributing to the tobacco control activities of developing countries in Asia. The Asia-Pacific Association for the Control of Tobacco (APACT), originally formed by a number of Asian countries to counter trade pressure to control foreign tobacco in their countries, has become an emerging force in the region. APACT supports regional nongovernmental organizations (NGOs) to push for stronger tobacco control measure and to resist the multinationals.

Main Thematic Issues

Research on the Supply Side and its Determinants: Tobacco Production, Crop Substitution, and Ecosystem

Participants began by noting the importance of identifying all the players in the tobacco and tobacco products chain of supply including: direct and indirect, national and transnational, governmental and non-governmental, and those in tobacco producing countries and others. They asked what factors govern the decisions and actions of these tobacco supply chain players. Types of factors identified included: policy variables; those of short, medium, or long duration; technical/technological, socio-political environmental, and ecosystem related dimensions; and factors related to the cultivation, production, and marketing stages. Factors to be investigated included: size of land holdings; economic status and income; credit facilities; taste/flavour; subsidies and taxes on inputs and substitute crops; ecosystem factors; crop insurance, irrigation facilities, and technical support for tobacco and alternative crops; relative prices; marketing systems including price and purchase guarantees and transportation; alternative opportunities for supply chain players at the input, output, and consumption stages; alternative revenue and foreign exchange sources for government; and negative external factors.

The group formulated the following questions: What determines the elasticity of supply and what is the time profile of these supply-side elasticities? What are the socio-economic profiles of tobacco farmers, vendors and traders, and tobacco-linked labour? What types and mix of tobacco cropping patterns are found in different

countries? These types include single, mixed, and complementary cropping. What is the status quo, on both a country and a comparative basis, of credit, marketing and input supports for tobacco production. What changes are required to achieve tobacco control?

Policy Implication
To provide national and comparative information on which to base the formulation of tobacco control policies that take into account the nature and dynamics of the chain of supply and elasticities of supply.

Participants next identified the macro- and micro-level effects of tobacco supply as an important issue, particularly focusing on the nature of interdependencies between tobacco supply and health.

Policy Implication
To provide a basis for policies on both tobacco supply and health that take into account the scope and nature of their interdependencies.

The final issue identified was alternatives to tobacco supply, including substitute crops and alternative activities for input suppliers, farmers, laborers, producers, traders and vendors. Who are those who turn away from tobacco and what determines why, when, how much and for how long they shift to alternative crops? What viable alternative activities are available in different countries for tobacco input suppliers, farmers, labour, traders and vendors and producers?

Policy Implication
To enable policy makers to identify and support crop substitution and viable alternative activities for constituencies dependent on the tobacco supply chain for their livelihoods.

SYNOPSIS OF THE MAIN RESEARCH QUESTIONS ON RESEARCH ON THE SUPPLY SIDE AND ITS DETERMINANTS: TOBACCO PRODUCTION, CROP SUBSTITUTION, ECOSYSTEM

Issues	Research Questions	Policy Implications
Incomplete information on all the players in the supply chain and factors determining their decisions and actions.	Who are the players in the tobacco supply chain? What are the profiles of both the players and the tobacco production and supply regimes? What factors determine the behaviour of the players and the elasticities of	To inform the design of effective tobacco control policies that take into account the nature and dynamics of the supply chain and the elasticities of supply.

Incomplete data at the country level on the macro- and micro-level interactions of tobacco supply and health.	What is the nature and scope of interdependencies between tobacco supply and health?	To formulate both tobacco supply and health policies that take into account their interdependencies.
Lack of knowledge of viable substitute crops and alternative activities for players in the chain of tobacco supply.	What is the profile of those who turn away from tobacco? What determines their pattern of doing so? What alternative activities are available in different countries to players in the chain of supply?	To identify and provide policy support for substitute crops and alternative livelihoods.

Research on the Demand Side and its Determinants: Epidemiology, Behavioral Aspects, Warnings, Advertising and Endorsements, Trafficking

With respect to **epidemiology**, the participants felt that it was important to determine the patterns of tobacco use by age and sex in the entire population, as well as the tobacco attributable mortality (TAM) of smokers, non-smokers and former smokers: in other words, to define the magnitude of the problem, particularly in countries with very large populations, as changes in prevalence and consumption in these countries will affect world estimates.

Some specific questions that arose were: What is the prevalence of gutkha (new form of chewing tobacco) use among children in India? What is the proportion of acute myocardial infarction (AMI) and stroke attributable to smoking in Thailand? What is the projected cost saving would result from an absolute decrease of 1% in smoking prevalence due to cessation?

Participants raised a number of issues with respect to the **behavioral aspects** of tobacco users. What are the behavioural characteristics associated with smoking and non-smoking women? What are the factors determining adolescent smoking initiation and their domestic or foreign brand preferences? What is the association between cigarette smoking and male sexual dysfunction? What is the level of social acceptability of cigarettes among adolescent boys and girls? What are the levels of public knowledge and approval of: health education measures, specific tobacco product advertisements, tobacco company sponsorship, and tobacco brand stretching practices?

Policy Implication
To provide information in support of efforts by policy makers and advocates to formulate policies and develop measures that effectively reduce the demand for tobacco.

Participants identified one general and two specific questions with respect to **advertising**. In general, they wanted to know the impact of tobacco advertising on children and adolescents. The specific questions related to the "brand stretching" dimensions, approaches and effects are present in China, Malaysia, India, and Thailand (brand-stretching occurs when other products use logos or images similar to those associated with well-known brand of cigarettes); and how tobacco associations or farmers's associations are supported by the tobacco industry and used to oppose efforts to restrict or ban advertising.

Policy Implication
To improve knowledge of the modes, impact and appeal of tobacco advertising in order to facilitate development of effective policy responses.

The general question identified with respect to **trafficking** was, who is behind tobacco trafficking in Asia and why is it so common? More specific questions were: What are the volume of and revenues lost from tobacco products illegally brought into Southeast Asian countries? What are the motives and incentives for illegal tobacco trafficking? What advertising and other competitive motives do tobacco companies have in supporting smuggling?

Policy Implications
To persuade policy makers of the necessity and feasibility of addressing smuggling.
To lay the foundation for formulating policies that effectively control smuggling and its impacts.

SYNOPSIS OF MAIN RESEARCH QUESTIONS ON THE DEMAND SIDE AND ITS DETERMINANTS: EPIDEMIOLOGY AND BEHAVIORAL ASPECTS, ADVERTISING AND ENDORSEMENT, TRAFFICKING

Issues	Research Questions	Policy Implications
Inadequate information on patterns of tobacco use and their effects.	What are the patterns, motivations and impact of tobacco use, by age and sex? What is the TAM of smokers, non-smokers and former smokers?	To support efforts by policymakers and advocates to formulate policies and develop measures that effectively reduce demand for tobacco.
Lack of knowledge of the impact of tobacco sponsorship and advertising on children and adolescents.	What are the approaches and impacts of brand stretching in specific countries? How does the tobacco industry use support for tobacco or farmers' associations to limit tobacco control of advertising?	To improve knowledge of the modes, impact, and appeal of tobacco advertising in order to facilitate development of effective policy responses.
Inadequate information about the forces and motivation behind trafficking in Asia.	What are the volume of and revenues lost from tobacco smuggling? What are the motives and incentives for trafficking? Why is it supported by tobacco companies?	To persuade policy makers of the necessity and feasibility of addressing smuggling. To lay the foundation for formulating policies that effectively control smuggling and its impacts.

Research on the economics of supply and demand: taxation, subsidies, pricing and marketing arrangements

Several questions were raised with respect to taxation and subsidies, taking note of differences in rates and types of taxation across products and countries; the effects of regional organizations, the World Trade Organization (WTO) and multilateral trade agreements on trade issues; and variations in the type and extent of subsidies.

The need to compare rates of **taxation** on tobacco products between individual countries and to determine the effect of taxation rates on international smuggling. Was recognized by the participants. How can taxation rates be mapped within the region and opportunities for harmonization be identified? What is the impact of country-specific efforts to control smuggling? What is the impact of regional and multilateral organizations and trade agreements on efforts to harmonize taxation across the region?

The participants identified a need to determine the impact of tobacco taxes on the demand for tobacco products across the population as a whole and on specific sub-groups within the population. With respect to elasticity, what is the tax/price/demand nexus? What is the extent and dynamic of price elasticity by sub-groups, such as those defined by age, sex and socioeconomic status? In terms of cross-elasticities, will different prices on different products result in changes in use?

Can a case be made for earmarked taxes? The group recognized the need to investigate the implications of establishing a system of ear-marked taxes from tobacco sales.

Policy Implications
To develop a framework for harmonizing tobacco taxes on a regional basis. To identify optimal levels of taxation. To devise a comprehensive framework for the disbursement of that revenue for tobacco control measures.

What are the nature, extent and impact of **subsidies**, both government and industry, both direct and indirect?

Policy Implications
To determine the nature and extent of subsidies within the tobacco supply and demand framework.

There was extensive discussion with respect to the economy of tobacco use, including the chain of distribution of tobacco products extending from the traders, processors and wholesalers to the retailers and consumers. It was recognized that there is a need to study the organization of the tobacco industry and economic balance within the industry.

What are the prevailing **marketing** arrangements in the area, including domestic arrangements, government monopolies and multinational corporations. Who owns tobacco companies and what is their organizations structure? How are tobacco companies regulated? Who benefits and who loses within the tobacco chain of supply? What regulations apply to the marketing and advertising of tobacco products? What role do local governments play in regulating the chain of distribution?

What is the effect of tobacco use on public health in Asia and what is public expenditure on tobacco attributable morbidity and mortality?

Policy Issues
To develop a compendium of the tobacco supply structure in Asia, including both local and international suppliers. To identify entry points for government regulation of the industry in order to reduce tobacco use and maximize local benefits. To determine levels of tobacco-related morbidity and mortality. To estimate the economic cost related to tobacco use.

RESEARCH ON THE ECONOMICS OF SUPPLY AND DEMAND: TAXATION, SUBSIDIES, PRICING AND MARKETING ARRANGEMENTS

Issues	Research Questions	Policy Implications
Lack of information on the role of taxation in international smuggling, the demand for tobacco products, and in providing earmarked revenues for tobacco control measures.	What is the impact of national, regional and multilateral efforts to harmonize taxation across the region? What is the effect of price elasticity on the population as a whole and certain sub-groups? Can a case be made for earmarked taxes?	To develop a framework for harmonizing tobacco taxes on a regional basis. To determine optimal levels of taxation. To define a framework for disbursing earmarked revenue on tobacco control measures.
Lack of information on the extent of subsidization of the tobacco supply and distribution framework.	What is the nature, extent and impact of direct and indirect, and governmental and corporate, subsidization of the tobacco supply and demand framework?	To inform policymakers and decision-makers of the extent of subsidization of the tobacco supply and distribution framework.
Inadequate information on the nature of marketing arrangements in the tobacco industry; the ownership, organization and regulation of tobacco companies; the role of national governments in regulating the chain of tobacco distribution; and the economic cost of TAM and morbidity.	What are the prevailing marketing arrangements in the tobacco industry? Who benefits and who loses within the tobacco chain of supply? What regulations apply to the marketing and advertising of tobacco products? What is the cost of TAM and morbidity to the economy of Asia?	To develop a compendium of the tobacco supply structure in Asia. To identify entry points for government regulation of the industry. To determine levels of tobacco-related morbidity and mortality. To estimate the economic cost related to tobacco use.

Policy and Program Issues

Research on Tobacco Control Programs: Health Education and Behavioral Models Regarding Schoolchildren, Adolescents, Women, etc.

In this workshop, participants withdrew somewhat from developing specific research questions and instead engaged in an spirited discussion with respect to **health education** programs - what they should contain, where they should be delivered, who should deliver them and what segments of the population constitute the most important targets for these programs.

Participants recognized that many different types of tobacco are used across the region, including *bidis*, *keeyo*, water pipes and chewing tobacco. They also acknowledged that tobacco use serves many purposes in people's lives: it wards off hunger; provides a break from work; serves to reduce stress; and wards off mosquitoes. It also forms a part of work incentives, tips and wages. Tobacco control measures and health education programs should be considered within this context.

Participants discussed the need to target specific groups within the population, most specifically children, young people and women. In Thailand, the highest rates of smoking exist among air hostesses and massage parlour workers. Bus and truck drivers, vendors, movie stars, and the police and military were also identified as population groups with high rates of tobacco use.

The discussion can be summed up in the following questions: What types of tobacco are used in the region? What role does tobacco use play in people's lives? Who are the population groups at highest risk with respect to tobacco use?

Policy Implications
To design national and regional surveys to determine the types of tobacco used, the reasons why individuals use tobacco, and the prevalence of tobacco use among different segments of the population.

There was considerable discussion with respect to the importance of integrating tobacco issues with other school-based health education programs, such as alcohol, nutrition and exercise. Teens need to acquire the knowledge and skills to withstand both peer pressure and social pressure to take up smoking. They need to be aware of the manipulative tactics of the tobacco industry in order to deal with the pressure exerted by tobacco promotion and advertising. While teens who are in school can be reached through school-based programs, out-of-school children constitute a particularly high risk group and are very difficult to reach. Appropriate materials to educate them

must be identified. Although the tobacco industry seems to have unlimited funds for advertising its products, funds for health education are scarce.

Groups and individuals who are influential in smokers' lives should be part of the education process. This would include teachers for schoolchildren, doctors for patients, monks for the religious public, medical professors for medical students, and nurses and midwives for pregnant women. At the same time, celebrities who are well regarded by the public should be encouraged not to give pro-tobacco messages. Rather, they should be engaged to promote tobacco control messages.

Tobacco education should be a part of reproductive heath education, particularly for pregnant women. It is important to retain the concept of non-smoking among women as a cultural value in Asia. Education programs should focus on resisting including smoking as a component of modernization of women.

Finally, the participants debated the optimal materials and types of media to be used for health education, such a posters, print materials and TV advertisements.

The research questions identified were as follows: How and where is it best to approach smokers, particularly high risk populations? What professions can best influence these high risk groups? How can they get involved in the education efforts?

Policy Implications
To determine optimal materials, individuals and venues to provide health education to different segments of the population, especially high risk groups. To ensure on-going evaluation of health education initiatives.

While health education may play in important role in developing public support for tobacco control policies, policies may also be established to encourage a reduction in tobacco use. In China, students who smoke are refused public money for their studies. Health is not the only issue that may prompt the development of smoking control polices. In Asia, many non-smoking policies are initiated to prevent fires. Smoke-free policies help to establish new social norms that discourage tobacco use. Certain institutions are seen as pivotal in providing an example in terms of smoke-free policies. These include health care facilities; educational establishments such as schools, colleges and universities; work sites such as factories, offices and shops; and defense and police force buildings.

What role does health education play is supporting the development of tobacco control policies? What role do tobacco control policies play in preventing tobacco use?

Policy Implications

To evaluate the impact of health education on individual attitudes toward tobacco control measures. To evaluate the impact of tobacco control policies on smoking prevalence and consumption rates.

RESEARCH ON TOBACCO CONTROL PROGRAMS, HEALTH EDUCATION AND BEHAVIORAL MODELS REGARDING SCHOOLCHILDREN, ADOLESCENTS, WOMEN, ETC.

Issues	Research Questions	Policy Implications
Lack of information on the extent and form of tobacco use in the region.	What types of tobacco are used in the region? What role does tobacco use play in people's lives? What population groups are at highest risk? Who can best reach them?	To design national and regional surveys to determine the types of tobacco used, the reasons why individuals use tobacco, and the prevalence of tobacco use among different segments of the population.
Lack of information on the best way to educate populations at highest risk of tobacco use.	How and where is it best to approach smokers, particularly high risk populations? What professions can best influence these high risk groups? How can they get involved in the education efforts?	To determine optimal materials, individuals and venues to provide health education to different segments of the population, especially high risk groups.
Need to monitor the effectiveness and impact of tobacco education programs and control policies on smoking prevalence and consumption rates.	What role does health education play in supporting the development of tobacco control policies? What role do tobacco control policies play in preventing tobacco use?	To evaluate the impact of health education on individual attitudes toward tobacco control measures. To evaluate the impact of tobacco control policies on smoking prevalence and consumption rates.

Research on Tobacco Control Policy, Multidisciplinary and Comprehensive Approaches to Optimal Policy Mix

It was agreed that tobacco control policies form an important component of a comprehensive tobacco control strategy. Unfortunately, the high rate of smoking among policymakers themselves often hinders the development of such policies. In considering the development of tobacco control policies, there is a need to map tobacco use within the country and to develop a profile of the country that includes net imports, tobacco products and industry ownership, as the tobacco industry is often a significant component of the country's economy.

Policies should aim to reduce consumption of tobacco, reduce the supply of tobacco, and reduce tobacco-related morbidity and mortality. As well, they should promote cessation of tobacco use, support non-smokers in their efforts to remain smoke-free, prevent involuntary exposure to tobacco smoke, and help find alternative crops or employment for farmers and vendors. Repeatedly, workshop participants recognized the need for a multidisciplinary approach to tobacco control policy involving education, sociology, political science, agriculture, marketing, medical science, economics, statistics and psychology.

The essential tobacco control policy elements were identified as: a ban on tobacco advertising; a ban on tobacco sales in certain places, especially those accessible to young people; smoke-free public places; strong, short warnings on tobacco packaging; taxation; and smoking cessation programs.

In developing policies it is important to consider the role of nongovernmental organizations (NGOs), information for politicians, the empowerment of women and the role played by religious leaders. Tobacco control policies should be accompanied by health education measures and public information through the media.

The participants identified the following research questions and policy implications:

What is the effectiveness of all the factors involved in a comprehensive tobacco control program?

Policy Implications
To determine the optimal components of a comprehensive tobacco control strategy. To establish best practice within each of the tobacco control components.

What role do different segments of the population such as women, religious leaders and decision-makers play in the development of tobacco control policies?

Policy Implications
To identify the determinants of policy development and implementation including the different segments of the population that influence the process.

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What alternative crops and employment are available for farmers and tobacco vendors?

Policy Implications
To determine what crops would serve as economically viable and regionally appropriate alternatives to tobacco. To identify alternative employment for those involved in tobacco-associated occupations.

What factors influence smoking cessation and rehabilitation?

Policy Implications
To determine best practice in smoking cessation and rehabilitation. To implement cessation programs that will reach high-risk segments of the population.

Baseline data and regular survey data are required for policy formulation and evaluation. This will require regular assessment of tobacco use and associated disease trends.

Policy Implications
To design national and regional surveys to determine the prevalence of tobacco use and consumption patterns. To monitor the incidence of tobacco-related morbidity and mortality.

RESEARCH ON TOBACCO CONTROL POLICY, MULTIDISCIPLINARY AND COMPREHENSIVE APPROACHES TO OPTIMAL POLICY MIX

Issues	Research Questions	Policy Implications
The need for a comprehensive, multidisciplinary tobacco control program.	What is the effectiveness of all the factors involved in a comprehensive tobacco control program?	Identification of optimal components of a comprehensive tobacco control strategy. Establishment of best practice within each of the tobacco control components.
The need for a better understanding of the role that different segments of the population can play in the development of tobacco control policies.	What role do different segments of the population such as women, religious leaders and decision-makers play in the development of tobacco control policies?	To identify of the determinants of policy development and implementation, including different population sectors that influence the process.

The need for alternative crops and employment for those involved in the tobacco production and distribution chain.	What alternative crops and employment are available for farmers and tobacco vendors?	To identify appropriate alternative crops and employment for tobacco workers
The need for a better understanding of smoking cessation and rehabilitation.	What factors influence smoking cessation and rehabilitation?	To identify best practice in smoking cessation and rehabilitation. To develop programs for high-risk segments of the population.
The need for sound information on which to base tobacco control policy and evaluation.	Baseline data and regular survey data are required for policy formulation and evaluation. This will require regular assessment of tobacco use and associated disease trends.	To design national and regional surveys to determine the prevalence of tobacco use and consumption patterns. To design a system of monitoring the incidence of TAM and morbidity.

Multi-Country and Comparative Research in Asia: Emerging Issues

Emerging issues were discussed in the context of the varied environments existing in Asia with respect to tobacco production and use. These included a country's status as a net importer, a net exporter or self-sufficient in terms of tobacco production; types of tobacco used, including leaf, cigarettes, *bidis*, etc.; pattern of ownership within the tobacco industry, i.e. domestic or multinational; types of domestic tobacco industries (large, medium, small or cottage); and stages of tobacco production (cultivation, processing, marketing and vending).

The participants identified the following research issues and questions: What is the world trade environment in tobacco? How can tax harmonization be achieved within the regional block?

Policy Implications
To determine the existing national tax structures. To identify opportunities for tax harmonization across the region. To determine the impact of global trade policies and trends on tobacco taxation in Asia.

The "denationalization" of domestic tobacco industries by transnational tobacco companies (TTCs) and the associated increase in use of imported cigarettes. The need to map TTC operations in the region. What is the contribution of the tobacco industry to

the economy with respect to industry revenues, income, employment and foreign exchange? What role have the TTCs played in the changing product mix in the region?

Policy implication
To document the economic impact of the tobacco industry in the region. To determine the extent and impact of TTCs on domestic operations throughout Asia. To document changing product availability and brand preferences in tobacco use.

What are the demographic and epidemiological transitions occurring in the region? What is the burden of tobacco attributable mortality (TAM) and morbidity?

Policy Implications
To conduct baseline and follow-up surveys to document demographic trends and TAM and mortality trends in the region.

What role do electronic media, including inter-country satellite broadcasts, play in the promotion of tobacco products? What is the level of tobacco advertising in Asia? How does the public perceive those advertisements?

Policy Implications
To document the extent of inter- and intra-country tobacco advertising. To survey public opinion on tobacco advertising. To determine public readiness for policies to control tobacco advertising. To develop policies to reduce or prevent tobacco advertising and promotion.

What is the level of political commitment with respect to tobacco control measures? What is the optimal regulatory regime within individual countries? What sectors are involved in tobacco control?

Policy Implications
To determine the level of readiness for tobacco control policies. To identify the optimal policy mix for each country. To identify the sectors involved in tobacco control issues and their willingness to support policy implementation.

What are the environmental issues with respect to tobacco cultivation and processing? What are the opportunities for crop substitution?

Policy Implications
To identify the environmental hazards with respect to tobacco cultivation and processing. To determine which crops would serve as economically viable and regionally appropriate alternatives to tobacco.

MULTI-COUNTRY AND COMPARATIVE RESEARCH IN ASIA: EMERGING ISSUES

Issues	Research Questions	Policy Implications
The world trade environment in tobacco and the possibility of achieving tax harmonization within the region.	What is the world trade environment in tobacco? How can tax harmonization be achieved within the regional block?	To determine the existing national tax structures. To identify opportunities for tax harmonization across the region. To determine the impact of global trade policies and trends on tobacco taxation in Asia.
The contribution of the tobacco industry to the economy. The extent to which TTCs have infiltrated domestic operations and influenced product availability and brand preferences.	What is the contribution of the tobacco industry to the economy with respect to industry revenues, income, employment and foreign exchange? What role have the TTCs played in the changing product mix in the region?	To document the economic impact of the tobacco industry in the region. To determine the extent and impact of TTCs on domestic operations throughout Asia. To document changing product availability and brand preferences in tobacco use.
Lack of information on the demographic transition in the region and the burden of TAM and morbidity.	What are the demographic and epidemiological transitions occurring in the region? What is the burden of TAM and morbidity?	To conduct baseline and follow-up surveys to document demographic trends and TAM and mortality trends in the region.
Lack of information on the extent and impact of inter- and intra-country tobacco advertising.	What role do electronic media, including inter-country satellite broadcasts, play in the promotion of tobacco products? What is the level of tobacco advertising in Asia? How does the public perceive those advertisements?	To document tobacco advertising. To survey public opinion and determine public readiness for policies to control tobacco advertising. To develop policies to reduce or prevent tobacco advertising and promotion.

Lack of information on political readiness for and commitment to tobacco control measures, as well as those willing to support policy implementation. Need to determine the best policy mix for each country.	What is the level of political commitment with respect to tobacco control measures? What is the optimal regulatory regime within individual countries? What sectors are involved in tobacco control?	To determine the level of readiness for tobacco control policies. To identify the optimal policy mix for each country. To identify the sectors involved in tobacco control issues and their willingness to support policy implementation.
Need to identify environmental hazards associated with tobacco cultivation. Need to determine economically viable alternatives.	What are the environmental issues with respect to tobacco cultivation and processing? What are the opportunities for crop substitution?	To identify the environmental hazards with respect to tobacco cultivation and processing. To determine which crops would serve as economically viable and regionally appropriate alternatives to tobacco.

Cross-cutting Issues

Gender

While the pervasive importance of gender issues in all tobacco control research initiatives was recognized, it was noted that other categories such as adolescents are also of fundamental significance. It is essential to take into account underprivileged groups and ensure that they are not adversely affected by policy measures or programs arising from research.

Capacity Building for Tobacco Control Research

The participants emphasized the need to involve more researchers from a wider variety of disciplines in tobacco control research Among other factors, participants linked insufficient human resources to the lack of financial resources in the region for research generally, and this type of research specifically. There was some difference of opinion between participants from different countries and different sub-regions. Some perceived an absolute shortage of tobacco control researchers in both quantity and quality, while others perceived the shortfall to relate to the question of diversity, with a paucity of researchers in certain health sub-fields, as well as other fields such as economics.

Bridging the Gap Between Research and Policy

The participants agreed that the general (and typical) lack of communication and collaboration between researchers and policymakers, as well as between researchers and activists, is a significant factor limiting the influence of tobacco control research on

policymaking in much of Asia. A fundamental condition responsible for this gap is the scarcity of financial and human resources at the national level in many Asian countries for both research and policy formulation. Other factors cited included the lack of tobacco control research expertise in many countries or its concentration solely in the health sector. Another was the lack of knowledge on the part of researchers about policy and policymakers.

Steps researchers can take to bridge the gap include: involving policymakers in both research and dissemination; presenting results in accessible, non-academic language; and inviting policymakers to chair conferences.

Dissemination of Research Results and Advocacy

There was general agreement on the need to disseminate research results not only to colleagues, but also to policymakers and the public. Dissemination was linked back to the issues of research topics and research design, and the importance of ensuring that limited resources are directed toward high priority, policy-related research. In discussing means of dissemination, participants pointed out the importance of using a variety of media and modalities and the need to take into account both responsiveness and literacy levels of target audiences. They also expressed the desirability of an international newsletter.

With respect to advocacy, two issues were raised: advocates' need for credible, scientific data; and the need for professionalism in and coordination between advocacy initiatives.

North-South and South-South Collaboration

The discussion focused mainly on South-South collaboration, noting the existence of both barriers and commonalities that should assist in overcoming them. The participants identified three mechanisms for enhancing South-South collaboration: improved communication; enhanced coordination between researchers; and "institutionalized," rather than individual, motivation and capacity-building.

Results: East, Central and Southern Africa

Background

Tobacco use affects the economies of all countries in the East, Central and the Southern Africa (ECSA) Region and is a major health concern for both smokers and non-smokers. A report by WHO/AFRO Evolution of Tobacco Control Situation in the African Region, 1993-1997 (Sanwogou 1999 and WHO 1997b) based on data collected in 1994 shows that, of the 19 out of 46 countries reporting, all grow tobacco, although the scale differs from country to country. Most of the Francophone countries of West Africa, for instance, have small- to medium-sized plantations. The big producers are Malawi, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. Even though the majority produce tobacco, all but Malawi, Tanzania and Zimbabwe also import massive amounts of the product. As a result, the proportion of people using tobacco, whatever the form (smoking, chewing tobacco or snuff), is growing. The majority of smokers are men but the number of women taking up the habit is increasing.

Smoking is the most preventable cause of death and disease among adults today in the world. According to Dr. Fernando Antezana, "unless tough actions are taken immediately, the tobacco epidemic will prematurely claim the lives of about 250 million children and young people alive today" (WHO 1998a). It is projected that by the year 2020 tobacco will cause 17.7% of deaths in developing countries and 10.9% in developed countries (WHO 1998c).

As tobacco consumption declines in developed and industrialized countries, it is rising in developing countries. This increase is a result of low levels of awareness of the health risks associated with tobacco use, the long time lag between the cause and effects of tobacco use, and aggressive advertising on the part of the tobacco industry. In Africa the biggest percentage of smokers is found in the 20-40 age group, with most smokers starting the habit in their teens (WHO Report, unpublished).

Interestingly, although cigarette smoking represents the most extensively documented cause of non-communicable disease ever investigated in the history of biomedical research, knowledge of the harm has thus far not resulted in public outrage or a policy response equal to the addictiveness of the product.

Not only tobacco consumption but also production is escalating rapidly in developing countries, giving the impression that tobacco production and marketing are an economic necessity. Significant foreign exchange is generated and consumed by this known health and environmental threat, posing a dilemma for countries such as Malawi and Zimbabwe.

Tobacco plays a major role in the socioeconomic infrastructure of Zimbabwe, accounting for 33% of the country's agricultural earnings and 30% of its foreign

currency earnings (Ministry of Health and Child Welfare 1999). Malawi is even more dependent on tobacco, which accounts for almost 70% of its export earnings. Between 1991 and 1998, tobacco earned that country a minimum of USD 200 million per annum. In some years tobacco earnings are almost USD 400 million. Moreover, the tobacco industry employs 12% of the population and tobacco production accounts for the largest proportion of income, gross domestic product (GDP) and exports (Kwengwere 1999).

Over the past 10 years, the majority of countries in the region have developed educational campaigns to inform their populations about the risks associated with tobacco use. Since 1988, all have observed No-Tobacco Day and participated actively in mobilizing their communities around tobacco control. All countries have tobacco control nongovernmental organizations (NGOs) advocating stringent laws against tobacco and tobacco advertising in the mass media, but obviously this response is not adequate to meet the challenge. Evidence suggests that the time has come for a coordinated effort in support of policy-relevant research to minimize the threats posed by tobacco consumption and production.

Overarching Issues

The concurrent workshops and plenary discussions identified problems, formulated related research questions and articulated the associated policy implications. The resulting regional tobacco control research agenda is presented below. Overarching issues common throughout the Region are followed by the workshop results, broadly divided into main thematic issues and policy and program issues. A synopsis table at the end of each set of topics summarizes the key problems, research questions and policy implications.

Overarching Issues
▸ lack of adequate capacity for research
▸ lack of standardized and comparable data
▸ lack of harmonization of control efforts and mechanisms
▸ lack of a network for communication of information, data and best practices
▸ lack of concerted mobilization of human and financial resources

Main Thematic Issues

Research on the supply side and its determinants: tobacco production, crop substitution and ecosystem

With respect to **tobacco production**, the participants identified the main problem as lack of information concerning its determinants and its effects on producers, workers, trade and the environment. They identified a number of research questions. To what

extent is tobacco a critical crop for African countries? Is Africa really as dependent on tobacco as it is claimed to be? If yes, what factors contribute to this dependency and what is the level of dependence?

Are African tobacco growers (producers) really getting a fair deal or return compared to other players in the market? Who benefits from tobacco production? Research has shown that growers get only 5% of the overall revenue generated from tobacco sales.

What is the actual national cost of tobacco production, taking into account nutrient depletion and deforestation? One could calculate the national costs and losses incurred due to soil degradation, pollution and deforestation.

What is the extent of human resource exploitation in tobacco production in African countries? What are the traditional, cultural, and historical influences on tobacco production in the Region? And finally, are the international bodies, especially the UN agencies, really against tobacco production? What has the World Bank done in its endeavors to control it?

Policy Implication
To evaluate the social and economic impact of tobacco production so as to generate information for alternative strategies to reduce dependence on tobacco production and offer alternative employment in agriculture.

The participants identified the problem associated with **crop substitution** as the lack of adequate information on alternative crops and their value versus that of tobacco production. They identified the following pertinent research questions: What are the alternative crops to tobacco (e.g., paprika), especially in Malawi and Zimbabwe? How sustainable are these alternative crops?

Is there a way of offering comparable inputs to farmers if they decide to grow alternative crops? There is need for good, clear, convincing evidence that the alternative crop is as profitable as tobacco. Are there companies similar to international tobacco companies that are interested in buying products other than tobacco? Are these companies prepared to offer sustainable security to the producers?

What is the feel-good feel-bad effect of tobacco production? Would tobacco farmers be more willing to switch over to other crops if the economic returns were comparable to those of tobacco?

Policy implication
To gather adequate information in order to recommend alternatives to tobacco producers for enhancing the national income through other crops.

The participants identified the main problem associated with the **ecosystem** as lack of adequate information on the effect or impact of tobacco production on the environment

and the ecosystem. They identified the following relevant research questions: Is tobacco more nutrient degrading than other crops grown in the Region? To what extent do pesticides used in tobacco production, industrial tobacco waste, etc., pollute the environment compared to other activities and what are the health effects? To what is the extent is local deforestation being brought about by tobacco production? How does it compare to that due to gathering of fuelwood for domestic purposes?

Policy implications
To provide information for developing an ecosystem preservation legislation and intervention program. To provide information on potential health effects of pesticides, fertilizers, fungicides, etc., used in tobacco production.

SYNOPSIS OF MAIN RESEARCH QUESTIONS ON THE SUPPLY SIDE AND ITS DETERMINANTS: TOBACCO PRODUCTION, CROP SUBSTITUTION AND ECOSYSTEM

Issues/Problems	Research Questions	Policy Implications
Lack of information on tobacco production, its determinants and effects on producers/workers, trade and the environment.	How dependent is each country and the region on tobacco production? Do the benefits outweigh the costs?	To design alternative strategies to reduce tobacco dependence.
Lack of adequate information on alternative crops and their value.	What are the alternative crops to tobacco and what incentives or economic benefits are available with other crops?	To recommend feasible alternatives to replace tobacco production while assuring reasonable benefits.
Lack of knowledge about the effects and impact of tobacco production on the environment and ecosystems.	What is the extent of damage brought about by tobacco production to ecosystems and the environment?	To assist in developing appropriate legislation and interventions to protect ecosystems and the environment.

Research on the demand side and its determinants: epidemiology, behavioral aspects, warnings, advertising and endorsements, trafficking

The participants recognized two problems associated with the **descriptive epidemiology** of the problem. The first concerns lack of data on national consumption figures, including trends in the prevalence of tobacco use over time; smoking patterns among specific groups such as pregnant women, schoolchildren of all ages, opinion

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leaders, policymakers, and high-risk occupational groups; and the type of tobacco product used by each group. The need for a standardized research method for use in different settings was recognized.

The research question that emerged from this problem was formulated as follows: What are the consumption figures for all tobacco products used in the countries of the region, including those for children of all ages, women (also during pregnancy), opinion leaders, policymakers and high-risk occupational groups?

The second problem concerns the lack of knowledge about the impact of tobacco use on the burden of disease, including mortality patterns, in the region. This problem gave rise to the following questions: What is the national burden of disease due to tobacco consumption? How can the national death registration data be used to assess the impact of tobacco use on mortality in each country and in the region? How can the data collected in the various national cancer registers be utilized to assess the contribution of tobacco use to the burden of cancer in each country and in the region as a whole?

Policy Implications
To provide information for governments, activists and other stakeholders on the basis of which to assign priorities and resources for implementation and evaluation of tobacco control activities. To increase public awareness of the potential harmful effects of tobacco on health.

With respect to **behavioral aspects**, the participants identified three topics on which information is needed: smoking initiation and tobacco use patterns among children, young people and women who are undergoing urbanization and health transition through exposure to urban lifestyles; socio-cultural and psychological influences on smoking patterns in the Region; and the synergistic effect of various risk factors on the impact of tobacco use on health in the region, such as a wood or coal energy source in the home, dusty environments, milling and quarrying occupations, and the effects of environmental tobacco smoke (ETS) in the home.

These three problems give rise to the following questions, respectively: What are the determinants of smoking in the above-mentioned groups? What are the socio-cultural and psychological influences on smoking patterns in the region (i.e. ritual versus habitual use of tobacco; promotion of the use of snuff by traditional healers; and the influence of stress, peer group pressure and body image on tobacco use)? How do they operate? What is the contributory role of synergistic risk factors to the health outcome in people who smoke or are exposed to ETS?

Policy Implication
To provide information for the development of target sector appropriate interventions and for prioritizing issues in tobacco control.

With regard to tobacco **warnings**, the participants noted that tobacco control messages are often inappropriate for the target audience, such as English warnings for non-English speaking people, written warnings for illiterate people, the use of symbolic material unsuitable for and not understandable by the target audience. The question that arises is: how can culturally appropriate warnings and tobacco control measures that take account of illiteracy and language barriers be developed and evaluated?

Policy Implications
To support the development of effective warnings and tobacco control messages for target audiences in the countries of the region.

Four problems with respect to **industry advertisements and endorsements** were identified: lack of knowledge regarding the influence of tobacco advertisements on children, youth and women undergoing urbanization and the epidemiological transition; the tobacco industry's stranglehold on all forms of media in the region through tobacco advertisements, which makes the media unwilling to support tobacco control messages; the lack of information on the barriers to banning tobacco advertising in the countries of the region; and tobacco endorsement of sports, particularly its influence in initiating young people into cigarette use and on brand choice.

These issues give rise to the following questions: What is the influence of advertisements on the above mentioned groups? What are the effects of tobacco advertisements in all forms of media (radio, newspapers, magazines, television and "advertorials") on the degree of media support for using tobacco control materials? What effect would banning tobacco advertising have on the media? What are the feasibility and legality of banning tobacco advertising and endorsements in the countries of the Region? What influence do sports endorsements have on the young in terms of smoking initiation and brand choice?

Policy Implication
To provide the information needed to motivate the banning or moderating of tobacco advertising.

With respect to trafficking, the problem is that the process, motivation and determinants of tobacco smuggling are unknown in this region, giving rise to the following questions: What are the process and motivation for the determinants of tobacco smuggling between countries in the region and why is it tolerated? What impact does trafficking have on smoking patterns?

Policy Implication
To gather baseline information that would motivate a regional policy and increased control over borders, so that individual country policies are harmonized, thereby reducing incentives to smuggle.

SYNOPSIS OF MAIN RESEARCH QUESTIONS ON THE DEMAND SIDE AND ITS DETERMINANTS: EPIDEMIOLOGY AND BEHAVIORAL ASPECTS, ADVERTISING AND ENDORSEMENTS, TRAFFICKING

Issues/Problems	Research Questions	Policy Implications
Lack of information on smoking prevalence among and the burden of disease on various populations.	What is the consumption figure and pattern of tobacco use in each country and in the region? What is the resulting national burden of disease?	To provide strategic information to implement and evaluate tobacco control programs. To increase awareness of the harmful effects of tobacco on health.
Lack of information on the determinants or causes of smoking in specific populations and on the socio-cultural factors that influence behaviour.	What are the socio-cultural and psychological determinants of smoking initiation? How can it be prevented?	To develop target population appropriate interventions and prioritize issues in tobacco control.
Lack of knowledge of the influence of advertising and endorsements on the initiation and cessation of smoking among various age and gender groups.	What is the influence of tobacco advertising etc. on tobacco initiation? What messages can be introduced to encourage people to quit smoking?	To generate information required to motivate the banning or moderating of tobacco advertising? To develop effective warning and control messages to encourage people to quit.
Inadequate information on the impact of trafficking on smoking patterns and how smuggling occurs and is tolerated across borders.	What are the determinants of tobacco smuggling? What is the effect of trafficking on smoking patterns?	To generate information that would encourage regional control over borders regarding tobacco trafficking and smuggling.

Research on the economics of supply and demand: taxation, subsidies, pricing and marketing arrangements

With regard to taxation, the problem was identified as inadequate information on and understanding of taxation in general; groups directly involved in taxation, mainly, producers, consumers and the government; those able to influence tobacco prices, viz. the tobacco lobby, the tobacco industry and the public health lobby; and other areas that may influence taxes, such as jobs and smuggling.

The research questions arising from this problem are as follows: What is the optimal level of tobacco taxation in a country and have countries in the Region reached that level? What is the impact of all taxes (import tax, excise duty, value-added tax,

production tax, etc.) on tobacco consumption? How can taxes be "earmarked" for tobacco control and health promotion in the region? Is harmonization of tobacco taxation achievable as a means of controlling smuggling in East, Central and Southern Africa (ECSA) and the Southern African Development Community (SADC)?

Policy Implication
To generate information that can be used for curtailing consumption while raising government revenues.

More information is required on levels and types of **subsidies** in specific countries, and their impact on local tobacco prices and the international tobacco trade. Indirect subsidies include: access to low interest loans, access to offshore loans, support for tobacco industry research organizations in terms of tax breaks, export subsidies, lower taxes on imported inputs such as fertilizers, and technical support networks for tobacco growers.

Two research questions arise from this issue. What is the level of subsidy being provided for tobacco growing in different countries? What is the impact of subsidies on local tobacco prices and the international tobacco trade?

Policy Implication
To determine the optimal balance between raising revenue and curtailing consumption. To identify long- and short-term strategies to address the issues by improving advocacy for tobacco control policy.

The lack of knowledge about the economic relationships and trade practices affecting **pricing and marketing** gives rise to the following research questions: What is the disparity between the profits of producers and manufacturers? What are the marketing practices (free distribution of cigarettes, promotion activities, dumping of manufactured tobacco products etc.) of the tobacco companies in the Region? What are the patterns and trends of imports and exports of tobacco and tobacco products in sub-Saharan Africa? What is the role of tobacco and tobacco products in national economies in the Region?

Policy Implication
To generate information to assess losses and gains from tobacco marketing and trade practices, and to address them.

SYNOPSIS OF MAIN RESEARCH QUESTIONS ON THE ECONOMICS OF SUPPLY
AND DEMAND: TAXATION, PRICING, SUBSIDIES, PRICING AND MARKETING

Issues/Problems	Research Questions	Policy Implications
Lack of information on and understanding of taxation issues in general.	What is the pattern of taxation in tobacco production and consumption? Is tax harmonization achievable in the Region?	To provide information that may be used for curtailing consumption while raising national revenues.
Lack of information on levels of subsidies and impact of prices on local and international trade, and the economic relationships between them.	How important is tobacco in the balance of payments? What subsides are available and who benefits or loses, i.e. producers vs. manufacturers; local vs. international trade?	To generate information that can assess losses and gains and come up with strategies that can address them.

Policy and Program Issues

Research on tobacco control programs: health education, behavioral models re schoolchildren, adolescents, women, etc.

The first problem associated with health education is the lack of information on tobacco control programs and their evaluation, especially as they relate to the following target groups: primary and secondary school-aged children (in and out of school), pregnant women and other women, groups with high smoking prevalence, and disadvantaged groups.

The research questions arising from this problem are as follows: What tobacco control programs exist? Has the effectiveness of tobacco control programs been evaluated? Should emphasis in the evaluation of tobacco control programs be on process or outcome and impact evaluation? Do health education programs exist that target the aforementioned groups and how effective are they?

Policy Implications
To identify the need for evaluation and, where gaps exist, for the development of tobacco control programs. To motivate structures being put in place for the development and evaluation of programs. To define key players and their roles in this process. To motivate the development of appropriate, cost-effective methodologies for intervention with specific neglected or high-risk groups.

The second problem associated with health education is that there is inadequate information on whether potential "agents for change" are carrying out health education

programs and, if so, what barriers they encounter in doing so. Agents of change might include teachers, health workers, nongovernmental organizations (NGOs), churches, youth groups, women's groups, parents, traditional leaders, unions, media, employers, and professional and service organizations. The question is, are potential agents for change carrying out tobacco control health education and what barriers, if any, exist to implementing this education?

Policy Implication
To identify where the need exists and motivate the development of training programs and tools for agents of change in promoting tobacco control.

The third problem concerns lack of information on the efficacy of different channels of communication for tobacco control programs, including mass media and interpersonal communication. This issue gives rise to the research question: what is the effectiveness of different channels of communication?

Policy Implication
To motivate utilization of the most cost-effective and appropriate channels for reaching target groups.

The fourth problem concerns the lack of information on which behaviour change models would be most appropriate for the region. This can be formulated in terms of the following research questions: which existing behaviour change models are most applicable? How can existing models be modified or new models developed, if required?

Policy Implication
To promote the development and utilization of appropriate behaviour change models, essential for underpinning and providing a framework for health education programs.

SYNOPSIS OF MAIN RESEARCH QUESTIONS ON TOBACCO CONTROL PROGRAMS: HEALTH EDUCATION, BEHAVIORAL MODELS RE SCHOOLCHILDREN, ADOLESCENTS, WOMEN, ETC.

Issues/Problems	Research Questions	Policy Implications
Lack of information on tobacco control programs, their effectiveness in reaching specific target populations, who should be responsible for implementing them and how they should be evaluated.	What programs exist and how effective are they in reaching children, adolescents and women? How can they be improved?	To develop programs that are customized for each target group, implemented by the appropriate agents and properly evaluated.

Inadequate information on whether potential agents of change are implementing tobacco control health education programs.	Who are the potential agents of change and how can they be used effectively? What are the barriers to their implementing health education on tobacco control?	To motivate the development of effective training programs and tools for these agents of change.
Lack of understanding about which are the appropriate behaviour models and communication tools and materials to get the message across.	Which behavioral change models and channels of communication are effective and how?	To promote the utilization of behavioral change models to provide a framework for health education programs.

Research on tobacco control policy: multi-disciplinary and comprehensive approaches to optimal policy mix

The lack of information on tobacco control legislation and policies, the determinants for establishing policies, and the impact of existing policies in the various countries of the region gives rise to the following research questions: What is the state of tobacco control policy and legislation in sub-Saharan Africa? What is the level of implementation and enforcement of tobacco control policy in the region? Who are the key stakeholders, what roles do they play and what strategies do they employ in the development of tobacco control legislation? Which civil society groups are engaged in tobacco control policy formulation? How do cultural practices affect the implementation of tobacco control policies? What are the attitudes and perceptions of key government ministries (health, finance, trade, agriculture, education, sports and culture, etc.) toward tobacco control (as assessed using the Delphi method)? What determines the constraints to implementation and enforcement or the success of tobacco control legislation in countries where such laws have been enacted (case studies)?

What kind of training program could build capacity for tobacco control policy? What mechanisms are utilized by governments in the implementation and enforcement of tobacco control legislation? Given the low rates of smoking in sub-Saharan Africa, what is the role of smoking cessation in the tobacco control policy mix in the region? What is the impact of low rates of smoking in sub-Saharan Africa on tobacco control policy implementation?

Policy Implications
To provide baseline information on tobacco control policies and legislation, their determinant factors and their impact on tobacco control, so as to formulate better strategies and policies. To lay the foundation for the development and implementation of tobacco control policy capacity building.

SYNOPSIS OF MAIN RESEARCH QUESTIONS ON TOBACCO CONTROL POLICY: APPROACHES TO OPTIMAL POLICY MIX

Problems/Issues	Research Questions	Policy Implications
Lack of knowledge on tobacco control legislation and policies, who sets them up, their determinants and their impact on trends in various countries.	What are the various tobacco control policies in specific countries? Who is responsible for setting them up and implementing them? What is their impact on smoking cessation?	To provide adequate information on existing laws and legislation and their impact. To recommend better strategies and policies.
Lack of capacity in tobacco control policy formulation, implementation, evaluation and communication.	What are the most effective means of building capacity for tobacco control policy formulation, implementation, evaluation and communication?	To provide the basis for developing and implementing tobacco control policy capacity building.

Multi-country and comparative research in ECSA: emerging issues

There are two problems associated with comparative research in East, Central and Southern Africa (ECSA). The first concerns the lack of capacity for monitoring, policing and enforcing laws on tobacco control, and absence of harmonized fiscal and marketing policies within and across countries in the region. The second concerns inadequate research capacity on tobacco control issues in general.

These issues give rise to a number of research question. Given liberalization of trade, how do individual countries and the region institute regulatory measures for tobacco control? What are the likely impacts of World Trade Organization (WTO) and other bilateral and multilateral trade agreements on the future of tobacco marketing in the region? What are the effects of disparities in advertising legislation among South Africa and its various neighbours on per capita consumption in those countries? What are the effects of disparities in fiscal regimes and indirect subsides between South Africa and its neighbours on production and per capita consumption in those countries? What is the impact of the loss of government controls over both national level and trans-border cigarette marketing? What are the constraints to policing and enforcing tobacco control policy at the regional level and internationally? How can tobacco control researchers be trained and retained? How can a critical mass of personnel for regional research on tobacco issues be developed at the national level? What is the capacity in the region for litigation on tobacco issues?

Policy Implications

To document regulatory measures in different countries and harmonize taxes, duties, subsidies and prices in an attempt to reduce consumption and production. To build capacity and establish incentives for multi-country and regional tobacco control research to inform policy in the region.

SYNOPSIS OF MAIN RESEARCH QUESTIONS ON MULTI-COUNTRY AND COMPARATIVE RESEARCH: EMERGING ISSUES

Issues/Problems	Research Questions	Policy Implications
Lack of monitoring, policing and enforcement capacity, as well as absence of regional harmonization of fiscal and marketing policies.	How can governments in the region respond to global trade agreements and the liberalization of trade? How do disparities between countries in advertising, marketing, fiscal and subsidy regimes affect production and consumption? What are the constraints at the international and regional levels to enforcing tobacco control policy? What is the regional capacity for litigation?	To promote policies aimed at reducing production and consumption by documenting regulatory measures in different countries, supporting harmonization of taxation, duties and subsidies, and developing regional responses to global trade agreements and liberalization.
Inadequate regional capacity for tobacco control research, particularly for regional, multi-country, and comparative research.	What can be done at the regional level to build and retain a critical mass of tobacco control research capacity?	To train and retain tobacco control researchers capable of providing comparative, multi-country, and regional data and analysis to policymakers.

Cross-cutting Issues

Gender

This discussion was preceded by a brief presentation on key gender issues in tobacco control research. The tobacco epidemic is not only expanding, but also shifting from developed to developing countries and from men to women. The number of women smoking in East, Central and Southern Africa (ECSA), although still low, is increasing. The presentation also highlighted several forms of gender inequality in tobacco production and processing. It was agreed that gender issues are important to the

group and that all tobacco control research in ECSA should include gender considerations.

The group agreed that topics to be studied should focus especially on the tobacco control issues affecting children, adolescents and pregnant woman. There is a need to examine the socio-cultural factors that determine smoking within these groups, with the realization that the new marketing strategy by the tobacco industry is promoting smoking by women in developing countries as never before. There is therefore a need to promote strategies that include assertiveness training, so as to strengthen self-confidence and empower women with alternative coping strategies. With respect to tobacco production, it is most strategic to identify issues that are not only gender specific but also tobacco specific, since many potential research problems pertain equally to other crops.

Capacity building for tobacco control research

There was general appreciation of the value of research and the huge costs involved. The group recognized that capacity building entails not just developing human resources but also building capacity in sourcing and managing funds. It was noted that research per se is a low priority for most ECSA governments. There is a need to acquire marketing skills to be able to sell the idea of the value of research to government and policymakers; to conduct a situational analysis of tobacco control research capacity in the region; and to set up a database of existing skilled personnel, in other words, who is available and what they can offer.

Other questions that arose in this regard were: What financial resources are available or are being offered in the region for capacity building? Which organizations can offer fellowships for training, exchange programs, etc.? Who should benefit from them? What forms should capacity building take? Should there be short-term training opportunities in addition to fellowships? What can be done to retain this capacity within the region? What incentives are available to attract researchers into tobacco control research?

The need to support a regional centre of excellence to coordinate tobacco control research activities in ECSA was pointed out, so that opportunities can be fairly distributed and capacity can be developed, maximally utilized and retained. Strategies would have to be identified in order to attract policymakers, other tobacco control research partners and funding agencies to the effort. Africa-specific training courses would need to be developed.

Bridging the gap between research and policy

Recognizing that research is an instrument for making sound policy decisions, the need was emphasized for involving policymakers in the research process, starting with the planning phase and priority setting. Other suggestions for narrowing the gap were:

- to popularize research through activities such as seminars open to policymakers, the public and the press, "information days" etc.

- to network with district and provincial officers on research activities

- to establish focal points for research and provide them with facilities to promote the research agenda and exchange information

- to provide reports and scientific papers written in simple language and easily interpreted by policymakers

- to produce credible, reliable results

- to source funding from elsewhere (besides government) for facilitating the implementation of the research results, so that the benefits of the research can be recognized by policymakers.

Dissemination of research results and advocacy

A number of methods for promoting dissemination and advocacy were highlighted. These included: encouraging researchers to publish in peer reviewed journals, such as *Tobacco Control*; consulting with the appropriate policymakers before publishing results; using the press and the media as a vehicle for transmitting research information; and using the Internet for exchanging information and creating an African tobacco control research web page.

North-South and South-South collaboration

The group noted a great discrepancy in the collaboration between North and South. The volume of information flowing from the South to the North about tobacco production and the inequalities it involves, tobacco control, etc., is vast but does not find an equal response from the North. It was also recognized that the contribution from the South is always unrecognized and unappreciated. There is, in fact, much abuse and exploitation by the North, which the South should not accept. Southern researchers therefore should not view themselves merely as recipients; the donor-recipient concept of North-South relations is not correct since the donors receive much more than they give. It was further noted that South-South collaboration frequently is frustrated by rivalries that are compounded by their competition for resources North.

Since regional expertise for creating local capacity in tobacco control research and developing southern initiatives exists, the group resolved to avoid creating too much dependence on northern donors and instead encourage the use of local resources, and create more South-South partnerships, for example, Brazil and Zimbabwe, Malawi and Zambia, etc.

Conclusions and Recommendations

Implementing and Sustaining the Agenda

Latin America

The regional group for Latin America and the Caribbean identified factors affecting the development of a tobacco control research agenda in the region as lack of knowledge regarding the information needs for control tobacco in each country; lack of available disaggregated official data in some countries; country-level and even state-level (as in the case of Brazil) needs that differ from regional-level recommendations; and the special situation of each country with regard to the importance of tobacco production and tobacco taxes in its economy. The question is, which research issues are more likely to affect policies in different countries and sub-regions? Which are the most pressing issues in each country and sub-region?

Thus, the participants determined that the first step in setting priorities for a tobacco control research agenda is to look at the major gaps in the information necessary to move forward. From the discussion, it became clear that there is an urgent need to develop a surveillance system to determine country-specific data. There also seems to be a need to assess and document the research currently being conducted, and to conduct a widespread and thorough evaluation of the programs already implemented. Both the surveillance system and the assessment of the current status of research and program development are applicable to all the areas discussed. Once the process starts in one area, for example supply-side research, it will be easier to replicate the experience in the other areas, making the research agenda more sustainable. The gaps in information need to be addressed since data are essential to the implementation of a research program.

As the main targets of the tobacco industry, young people and women should be a particular focus of research conducted in the region. Information and programs targeting these populations are highly acceptable politically and may provide a less confrontational entry point to tobacco control at the policy-making level. In addition, programs and research that evaluate the impact of smoke-free environments will contribute to decreasing consumption and delaying or avoiding initiation. Making it socially unacceptable is one of the first steps in de-normalizing tobacco use.

Programs targeting young people and women cannot be implemented in a societal vacuum, however. Economic and taxation issues must also be priorities. Tobacco cannot be addressed solely as a health issue. The better an understanding tobacco control advocates, policymakers and researchers have of the intricacies of factors associated with tobacco control, the less likely the region will be to repeat mistakes made by its northern counterparts. Tobacco control and tobacco control research, at all

levels, will ultimately become a political issue. The more prepared the tobacco control community is, the better.

Applied research should not be limited to one aspect of tobacco, but should encompass the multiple determinants involved in tobacco use, such as cultural, social, economic and educational factors, and their implications for further policy development. These multidisciplinary characteristics of tobacco control will have to be kept in mind when it comes to building capacity for tobacco control policy-oriented research. Thus, professionals from different disciplines should be included in the effort to increase the human resource potential for tobacco control research.

In terms of network development, the idea is to have contact people in strategic countries that are major tobacco producers and to provide support to networking, with regional secretariats for implementing regional and national research with low-cost grants.

Other priorities will be to identify partners with whom to develop programs to stimulate the implementation of the tobacco control research agenda; to identify potential funding agencies, institutions and interested researchers; and to create a regional tobacco control database to be maintained in a specific country in the region.

Asia

Building on both perceived limitations in the current environment and the mutual trust evident at the meeting, the participants identified two linked mechanisms for implementing and sustaining the regional research agenda. The first was a network focusing on building policy-relevant tobacco control research capacity, facilitating cooperation and coordination, and addressing funding needs. The second suggestion was to explore the possibility of creating tobacco control research cells in each country to build institutional interest and capacity, to facilitate sustained research programming, and to stimulate action by activists and policymakers.

Africa

The regional group for East, Central and Southern Africa summarized the actions required to move the regional research agenda forward as follows:

- conducting tobacco control research in the identified priority areas with the involvement of policymakers from the outset
- concentrating on high-risk groups such as young people and women
- evaluating tobacco control programs and recommending ways of improving them
- building partnerships and creating or utilizing a regional focal point for promoting and conducting tobacco control research initiatives
- mobilizing resources from international and local agencies for research while reducing donor dependence

- identifying gaps in the information available on tobacco control programs and research

Recommendations: Establishing a Network and the Way Forward

Latin America and the Caribbean

The Latin American and Caribbean region encompasses a great diversity of countries, rich in experience and research capacity, but with critical gaps in information important to moving tobacco control forward at all levels from local communities through to the region.

A multi-disciplinary, regional research agenda for tobacco control was proposed by this multi-disciplinary group of Latin American and Caribbean experts, in order to foster a research, funding, analysis and knowledge base for effective public policies in Latin America and the Caribbean.

The main constraints to developing tobacco-control activities in Latin America and the Caribbean were identified as follows: the lack of a multi-disciplinary understanding of the problem and dismissal of qualitative approaches; the need for baseline information on which to develop effective policies, strategies and interventions; the need for a better understanding of determinant factors for policy development focusing on regional strategies, practice-based applicability and cultural sensitivity; the lack of systematic evaluation of existing and potential interventions; the lack of models and tools for implementing tobacco control programs with a multidisciplinary approach (including legislation and economics) on a multi-country basis; and the gap between researchers and policymakers, with few research institutions and researchers involved in tobacco control, no research agenda, a scarcity of research teams with motivated and well-prepared staff, and few policymakers interested on tobacco research.

To address these constraints, two strategies were suggested. The first is the development of reliable and easily accessible operational tools to allow country-level mobilization, implementation and evaluation of tobacco control programs, taking into account the specific circumstances of each country. The goal is to develop a regional surveillance system to track the tobacco epidemic, that will allow program development to be oriented not only by national needs, but also to focus on local, state, regional and continental strategies. This database would also include useful abstracts in the languages of the region to disseminate information to activists and policymakers. Strategies that were positively evaluated, simple communication strategies and local health promotion strategies should be outlined and available to any tobacco control group.

The second is the creation of a tobacco control research network that would facilitate the implementation of policy-oriented research with a multidisciplinary approach

involving both regional and multi-country strategies; seek sustained funding and develop research initiatives between national agencies, nongovernmental organizations (NGOs) and academic groups, as well as North-South and South-South collaboration; and focus on regional strategies to motivate and involve scientists, to garner policymakers' commitment, to implement capacity building programs, and to stimulate exchange of information, especially through scientific publications in the languages of the region, including country comparisons and critical reviews of results.

The proposed tobacco control agenda for Latin America and the Caribbean contains the following elements:

Baseline information

The need for baseline information was the issue most clearly identified as a priority for implementing the research agenda. It takes into account the lack of knowledge about exposure of different groups to tobacco, prevalence of tobacco use, the needs of those involved in the tobacco production chain, the economic and political determinants of tobacco use, and promotion and marketing in each country and in the region as a whole.

Policy determinants

It is necessary to identify the factors that influence the development, or lack thereof, of tobacco control policies in the region. What are the social, cultural, political, economic and legislative pressures that play a role in policy development? What is the role of the tobacco industry and what are its strategies for the region?

Intervention evaluation

In addition to the needs mentioned above, there is an urgent need to evaluate the interventions being implemented and the ones being planned. What is the impact of crop replacement policy on tobacco consumption, on the economy and on the structure of the communities that grow tobacco? What is the impact of school-based tobacco prevention interventions? What is the role of social marketing in the promotion of tobacco use and in the development of counter-advertisement strategies? What is the role of the health care community and how can they get involved in tobacco control? How can smoke-free workplaces, public places, etc., be achieved? How can legislation be developed that will be implemented and enforced? What is the impact of economic-based policies on tobacco consumption and on the country's economy?

Regional differences

The existence of considerable regional differences, as well as similarities, points to the need for collaborative studies that will provide comparable information and assist in the development of country and regional policies, while taking into account factors such as

borders, smuggling, economics and country dependence on tobacco for export/import balance. Cross-border information and multi-centre studies are better suited to provide information on how to deal with these issues, as well as on how to address common areas of interest such as smoke-free public transportation and cross-border marketing strategies. In addition, multi-country research efforts must be conducted to counteract the tobacco industry's strategies for the region.

Based on the broad range of research items that were exhaustively discussed during the workshops, some additional comments can be made. The participants recommended Interventions based on broad educational programs and their evaluation over smoking cessation trials, which seemed to be a concern to be addressed in the future. At this point, the cost of large-scale smoking cessation programs involving the use of nicotine delivery systems and other drugs, are too high for the region relative to the benefits. The population is still paying for preventable health threats that occupy the health care facilities. Moreover, a low level of awareness on the part of health care professionals, particularly physicians, is also a factor limiting smoking cessation intervention.

A better understanding of the extent of tobacco use and its impact on the health profile of the region, as well as the demand by smokers wanting to quit, will probably change this recommendation over time. Nevertheless, smoking cessation programs will always be very expensive and have low impact on smoking prevalence rates compared to educational interventions such as smoke-free workplace policies, which also provide additional benefits. The one exception in this regard was that intervention trials for smoking cessation were recommended for pregnant women.

The participants recommended policy-oriented research over cohort studies; low-cost case-control studies should only be conducted to evaluate the impact of tobacco use on morbidity and mortality trends.

The participants suggested regrouping sub-units of the region with respect to tobacco policy and programs. For example, southern Brazil and northern Argentina are more alike and have more in common than southern and northern Brazil. Regrouping the region according to socio-cultural, geographic and economic factors is a good way to improve results at lower cost.

Strategies should be developed and evaluated for each program approach. The participants agreed that tobacco control programs should be combined with healthy lifestyles programs, but that special care should be taken not to mix tobacco control programs with drug control programs or other policies that may treat tobacco control as a minor problem. Strategies focusing on country-specific public health policies and sectors, and their potential interface, should also be developed and evaluated.

Asia

The major recommendation was that the representatives from Thailand take the lead in developing a proposal for an Asian tobacco control research network. It was agreed that the proposal should address issues such as: the importance of focusing on capacity building for policy-related research; the need for a nodal institution to act as coordinator; the appropriateness of rotating this coordinating role on a regular basis; the requirement to encompass multiple functions and produce multiple results; the necessity of building on commonalities and addressing diversity; and the inclusion of empowerment among the intended outcomes of network activities.

Africa

The proposed tobacco control agenda for East, Central and Southern Africa (ECSA) contains the following elements:

Capacity building

Researching, planning and implementing tobacco control programs and policies requires people who are knowledgeable and well informed about the problems and who are able to articulate them well. It therefore is important to build or strengthen the research capacity of the tobacco control constituency. This can be done through tobacco control research methodology workshops and a multidisciplinary fellowship program. Topic-specific workshops, conferences and network meetings would complement capacity building activities. These professional development opportunities would be available to individuals, policymakers, decision-makers and researchers, not only in the health field but also in agriculture, industry, economics, finance, law, social sciences, environmental sciences, etc.

The participants therefore strongly recommended that Research for International Tobacco Control (RITC) and other donor agencies provide long-term financial and technical support for tobacco control research capacity building in Africa. They further proposed that support be made available to develop a regional centre of excellence for tobacco control research in Africa at the Biomedical Research and Training Institute (BRTI). The centre would play a leading role in capacity building, as well as coordinate tobacco control research in the region.

Partnership building

A broad partnership at various levels is needed to push the regional research agenda forward locally, regionally and internationally. The meeting recommended that RITC, BRTI and representatives of the ECSA meeting be constituted into a Steering Committee to build partnerships with the Tobacco Control Commission for Africa (TCCA), the World Health Organization (WHO) and other donor agencies to obtain sustainable support for implementing the regional tobacco control research agenda.

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The Steering Committee was mandated to create a Secretariat to maintain a network of tobacco control researchers, including the ECSA meeting participants and interested others. The network would be maintained electronically through databases, Internet mailing lists and websites, as well as through meetings and seminars.

Creation of a research network

Recognizing that the comprehensive research agenda developed at the ECSA meeting should make a significant contribution to tobacco control efforts in the region, the meeting mandated the Steering Committee to mobilize resources for implementing the agenda and disseminating the findings.

The meeting recommended that RITC, BRTI, and the Steering Committee establish a tobacco control research program and network in order accomplish four functions. First, to develop research initiatives involving multi-country policy studies that are multidisciplinary and also cost-effective in terms of using experts from within the region. Second, to mobilize international technical and financial resources to support the network. Such resources should aim at a sustainable program that involves both North-South and South-South collaboration. Third, to identify ways and means of attracting researchers into the field of tobacco control research and put in place capacity building programs and strategies for retaining them. And finally, to encourage information exchange through publication in regionally available journals.

Annex: Evaluation of the Meetings

At the end of each meeting, Research for International Tobacco Control (RITC) distributed an evaluation questionnaire. The questionnaire was filled out by 15 out of 16 participants in the regional meeting for Latin America and the Caribbean, by 21 out of the 25 participants and observers at the regional meeting for Asia, and by 21 out of the 28 participants and observers at the regional meeting for East, Central and Southern Africa.

Results

Assessment of the meeting in general

	Excellent	Good	Reasonable	Fair	Total
Africa	3	16	2	0	21
Asia	4	14	0	0	18
LAC	6	9	0	0	15

Organization and logistics

	Excellent	Good	Reasonable to fair	Fair to poor	Total
Africa	10	8	3	0	21
Asia	14	4	0	0	18
LAC	12	3	0	0	15

Clarity of overall objectives

	Excellent	No	Partially	No answer	Total
Africa	21	0	0	0	21
Asia	18	0	0	0	18
LAC	15	0	0	0	15

Agenda adequate for achieving objectives

	Yes	No	Partially	No answer	Total
Africa	16	0	4	1	21
Asia	15	0	3	0	18
LAC	12	0	3	0	15

Appropriate mix of expertise

	Yes	No	Partially	No answer	Total
Africa	14	1	6	0	21
Asia	9	1	8	0	18
LAC	14	0	1	0	15

Adequacy of methodology

	Yes	No	Partially	No answer	Total
Africa	17	0	4	0	21
Asia	14	0	4	0	18
LAC	13	0	2	0	15

Need for workshop methodology

	Yes	No	Partially	No answer	Total
Africa	10	5	5	1	21
Asia	9	1	6	2	18
LAC	9	4	2*	0	15

* not sure

Improved knowledge of tobacco control issues

	Yes	No	Do not know	Total
Africa	20	1	0	21
Asia	18	0	0	18
LAC	15	0	0	15

Appropriateness of regional meetings as a strategy for establishing priority research issues

	Yes	No	Do not know	Total
Africa	20	0	1	21
Asia	18	0	0	18
LAC	15	0	0	15

Familiarity with RITC/IDRC mission and work

	None	Somewhat	Familiar	Total
Africa	4	7	10	21
Asia	5	8	5	18
LAC*	2	7	5	14

* one N/A

Comments

The regional meeting for Asia was evaluated very positively in general by the participants. However, they regretted that there was not a better mix of disciplines among the participating researchers and that the policymaking and advocacy constituencies were not represented. They expressed the desirability of having a formal presentation from each participating country. They also noted the considerable diversity in culture, language, research and policymaking capacity, and tobacco control contexts within the region, and the challenge this poses to the meeting process, outcomes and follow-up activities.

The participants at the regional meeting for East, Central and Southern Africa (ECSA) were of the general consensus (16 out of 21) that the meeting was timely and essential and that the discussions were fruitful in assisting participants to identify tobacco control problems. Twenty out of 21 participants indicated that they had definitely improved their knowledge of tobacco control issues through participation , and that the meeting shed light the African perspective of the tobacco control problem. All felt that the overall objectives were made absolutely clear and easy to understand. However prioritization of research problems was difficult and participants felt this could be done on a country-by-country basis.

The general feeling among the African group was that the last part of the agenda was rather "rushed." But overall, 16 out of 21 participants indicated that agenda was adequate to meet the objectives while four indicated it was only "partially" so.

While 14 out of 21 participants agreed that there was adequate mix of the participants in terms of various disciplines, they expressed concern at the absence of other member countries of the ECSA Region, namely Botswana, Mozambique, Namibia, Tanzania, and Zambia, as well as the need for more senior managers and representatives from non-health sectors.

The general impression was that the workshop methodology was good but could be improved by having each country in the region represented at the meeting; by providing a session to discuss tobacco control policies in Africa as a separate subject rather than as a research question; and ensuring a wider selection of participants from different professional areas, even the tobacco industry.

The general assessment of the regional meeting for Latin America and the Caribbean was that the group was knowledgeable, the discussion rich and the dynamic very interesting, providing an excellent opportunity to initiate a network and a unique opportunity to obtain a holistic view of research issues in tobacco control. The inter-sectoral approach exceeded expectations.

The objectives were considered clear, and the agenda and general organization adequate for the meeting. However, some felt that the workshops could have benefitted from a bit more structure, in the way of an outline sent to the participants in advance.

With respect to the mix of participants, it was felt that more expertise in health education evaluation and behavioral issues would have been desirable, and that some fields such as epidemiology, statistics, economy and environmental sciences were under-represented. A larger mix of countries and participants would also be welcome.

They also pointed out the importance of having the discussion in the official languages of the participating countries, in this case Spanish and Portuguese.

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