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Respiratory medicine and the Third World

Tobacco and the Third World

John Crofton

The background

All readers of *Thorax* will be aware that in industrialised countries tobacco is far the most important preventable cause of disease and death.[1-7] Although many countries have been slow to tackle this menace, public and political opinion is gathering momentum both nationally and internationally.

In 1979 a World Health Organisation expert committee[6] warned that, unless there was strong and effective government action, the smoking epidemic would soon spread from the industrialised countries to the economically developing world. This would further exacerbate the already grim health problems arising from malnutrition and communicable disease. By 1983 a further WHO expert committee reported that this pessimistic prediction was already being fulfilled.[8]

Tobacco consumption and prevalence of smoking

TRENDS IN TOBACCO CONSUMPTION

Data collected by WHO showed that, although tobacco consumption fell by 1·1% a year in developed countries during 1976–80, it rose by 2·1% in the developing world.[8] Global consumption rose by 7·1% between 1970 and 1985 (fig 1). There were substantial falls in some industrialised countries, notably the United Kingdom and United States (fig 1), but formidable rises occurred in Asia, Africa, and Latin America,[9] albeit from lower baselines. Examples from individual countries include increases in consumption of manufactured cigarettes between 1970 and 1980 of 32% in Kenya, 40% in India, and no less than 62·5% in Pakistan.[10]

The trends continue. In 1988 consumption of cigarettes fell by 1% in the developed (non-communist) countries but rose by 2·3% in the developing world. China alone consumed 29·3% of the world total of 1·5 trillion ($1·5 \times 10^{18}$) cigarettes.[11]

PREVALENCE OF SMOKING

From these figures it is clear that there has been a great increase in smoking in many developing countries, at a time when smoking has fallen in some of the developed countries. Half or more of the men smoke in a much higher proportion of developing than developed countries (fig 2).[12]

Examples from selected developing countries around the world are shown in figures 3 and 4; in figure 3 the prevalence figures are compared with those from some representative industrialised countries.

Male smoking rates are now higher in many developing countries (especially in Asia and the Pacific) than in many industrialised countries (see figs 3 and 4). Nevertheless, smokers, owing to poverty, often smoke fewer manufactured cigarettes on average in a developing country than in richer countries. This is particularly true for tropical Africa and for women. But in some countries there is heavy smoking of locally prepared cigarettes. For instance, adult smokers in India in 1977 smoked on average only 190 manufactured cigarettes, compared with 2910 in the UK.[13] In the same year, however, the consumption of "bidis" (locally made cigarettes) was 1500 pieces per adult smoker. Bidis have a high tar, nicotine, and carbon monoxide content, and are probably more dangerous.[13]

Among the limited figures available for tropical Africa are a smoking prevalence of 64% in Sudanese doctors, 35% in Sudanese male medical students (only 2% in the women),[14] and 58% in non-medical staff at the main teaching hospital in Nairobi.[15] A survey in 1976 in Nigeria showed a smoking prevalence of 40% in boys and 8% in girls in secondary schools[16]; a recent figure for older primary school children in Nairobi was 35% (PJ Wangai, personal communication).

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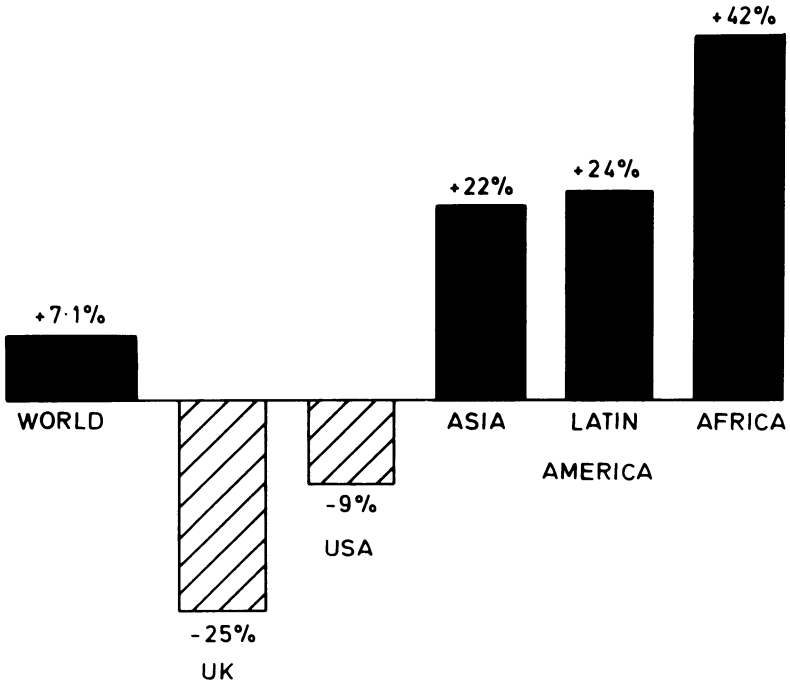

Figure 1 Global changes in cigarette consumption 1970–85. Source: Jacobson et al.[9]

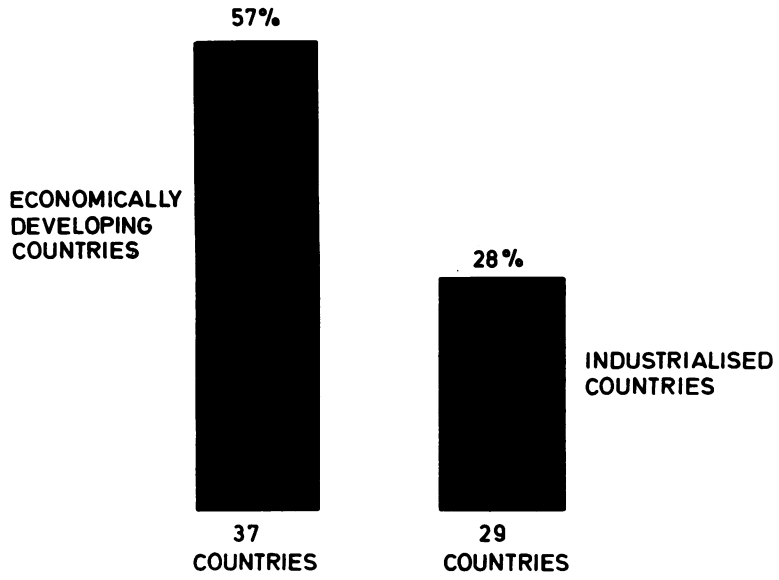

Figure 2 Proportion of economically developing and of industralised countries in which half or more of men smoke (partially industralised countries—for example, Singapore, Republic of Korea—classified with "developing"). Based on data from WHO[12] (some figures derived from limited national surveys); most surveys conducted during 1981–6.

Smoking in women

Developing countries vary widely in the smoking rate for women (figs 3 and 4). In some it is much lower than in men (for example, India, Indonesia, China, Malaysia, Tunisia, and Nigeria); in others it approaches the male rate (for example, Papua New Guinea, Nepal, Uruguay, and Brazil). In some countries the rate is rising in women, among whom smoking may be regarded as an indication of liberation, modernity, and sophistication. The rate has reached 27% in Tianjin, a Chinese industrial city, compared with only 8% in a sample survey for the whole of China.[17] A survey in Nigerian colleges of higher education found the highest female rate (over 50%) in schoolteachers in training.[18] The prevalence in "women at medical school" in Nigeria was said to be 72% as early as 1976.[16] In many parts of India the female smoking rate is low but the traditional tobacco chewing rate is high, resulting in a formidable prevalence of mouth cancer, the most common cancer in India.[19]

In some developing nations, as in many developed countries, teenage girls have a higher smoking rate than boys; these countries include Brazil, Chile, Papua New Guinea, and Uruguay.[20]

Smoking related disease

LUNG CANCER

As 85–90% of lung cancer is due to smoking, its incidence in different societies could be a useful marker of the ill effects of tobacco. There are, of course, disadvantages in using this marker: (*a*) accurate mortality data are not available in many developing countries; (*b*) with the latent period of 20 years or more between initiation of smoking and the development of cancer it is a relatively late effect; (*c*) the shorter life expectancy in developing countries means that fewer people survive into the cancer age[21]; (*d*) diagnosis is likely to be less accurate in many developing countries.

Nevertheless, using cancer registeries where available and indirect methods where necessary, Parkin and his colleagues from the International Agency for Research in Cancer attempted to calculate the worldwide frequency of lung cancer in 1980.[22] On the basis of this work Stanley and Stjernswärd[23] have estimated the relative numbers of patients with lung cancer in developed and developing regions of the world. Their results are summarised in figure 5. Already over 30% of all cases of lung cancer seem to be occurring in the developing regions. Surprisingly, this percentage is higher for women than for men, though the actual numbers are, of course, much lower in women. This may be because in some regions of the world there appears to be an unidentified factor, in addition to smoking, that causes lung cancer in women.[24]

Lung cancer is already the most common cancer in males in Southern Africa, South Eastern Asia, Western Asia, and Micronesia and Polynesia.[22] Parkin, in a later paper,[25] has given some further figures for developing countries. The lung cancer incidence for Chinese men in Singapore is similar to that for United States white men, and the inci-

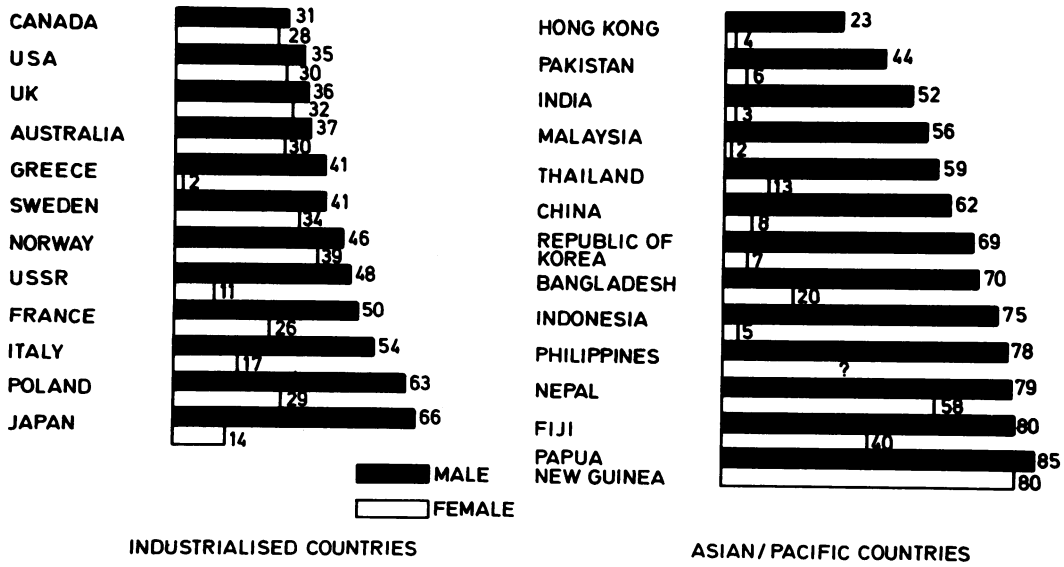

Figure 3 Smoking prevalence (%) in adults (male and female) in selected industrialised and Asian and Pacific countries. Original figures from WHO (1988)[12]—see figure 2 for provisos about accuracy.

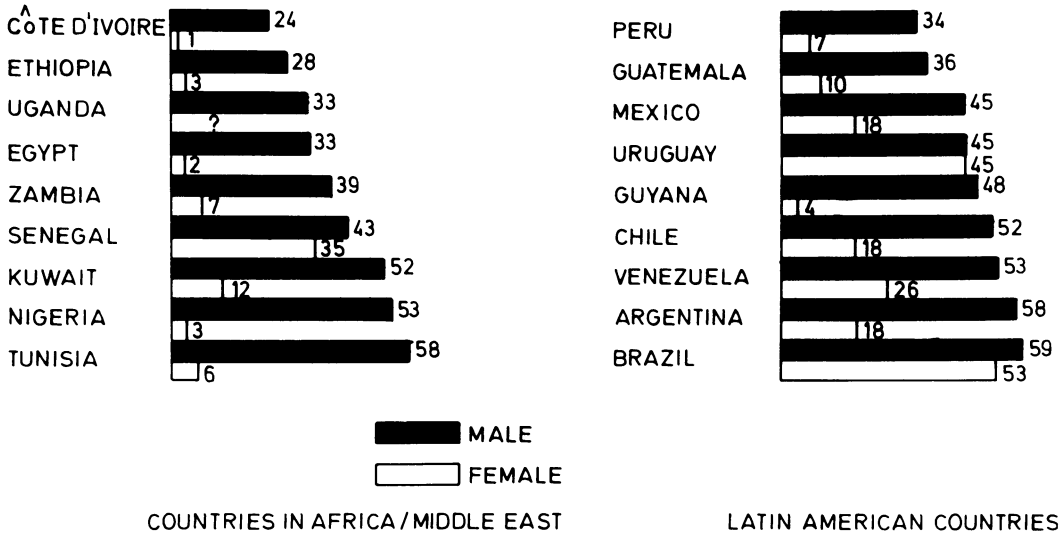

Figure 4 Smoking prevalence (%) in adults (male and female) in selected countries in Africa and the Middle East and in Latin America. Original figures from WHO (1988)[12]—see figure 2 for provisos about accuracy.

dence among middle aged men in Shanghai is similar to that for men of the same age in the UK. Important increases have been recorded in men in Bombay, Pakistan, and Kuwait. In Latin America there have been increases in both sexes in Brazil and Chile, though in the latter some of the increase could have been due to better diagnosis. In tropical Africa the rates are still low. Lung cancer accounted for only 1·1% of all cancers diagnosed in Ibadan, Nigeria, in 1960–9 and for only 2·5% in 1975–6. No increase has yet been recorded in a long term series in Uganda, or in Bulawayo, Zimbabwe. Although smoking prevalence has increased in many of these African countries, the increases have been relatively recent and, because of poverty, often only a few cigarettes a day are smoked. Parkin estimated that in 1980 lung cancer accounted for only 1·5% of all cancers in "Africa" (presumably tropical Africa).[25]

CHRONIC BRONCHITIS AND EMPHYSEMA

Chronic bronchitis and emphysema (with the plethora of synonyms—chronic obstructive airways disease etc) is also closely related to tobacco smoking,[26] though there are other causative factors.[27–30] In a newly smoking community the increase in the prevalence of bronchitis will probably appear earlier than the increase in lung cancer mortality.

Community surveys, some of them carried out 10 years or more ago, have already shown relatively high prevalence rates for chronic bronchitis in India,[31–33] China,[34] Papua New Guinea,[35–37] Nepal,[38] Malaysia,[39] rural Egypt,[40] and the Caribbean.[41] Most of these surveys found a correlation between smoking and morbidity, though in some surveys the rate for chronic bronchitis in non-smokers appears to be higher than in most surveys in developed countries. For instance, in the highlands of Papua New Guinea the very prevalent chronic lung disease seems to be common in non-smokers; the main factor appears to be intense exposure to domestic smoke in chimneyless houses.[42]

As some of the work outlined above was done several years ago, we need up to date repeat surveys to measure the change in prevalence of chronic bronchitis in countries where smoking is increasing. Data from tropical Africa are particularly sparse.[43]

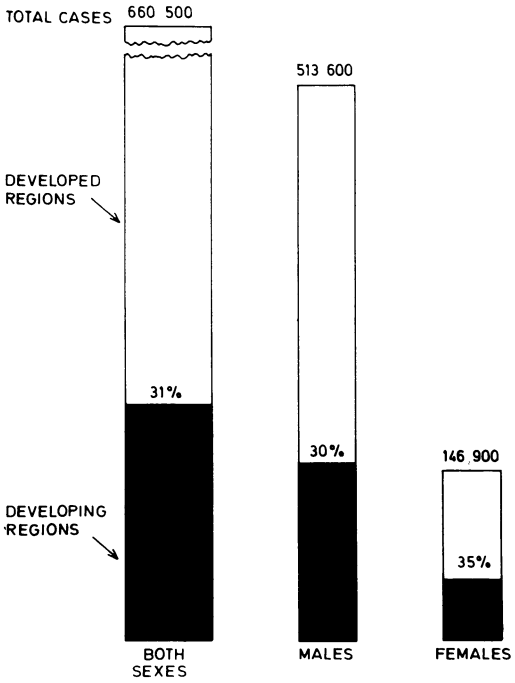

Figure 5 Percentage distribution between developing and developed regions of new cases of lung cancer in 1980: males, females and the sexes combined. Figures from Parkin et al 1988[22]; Stanley and Sternswäd 1989.[23]

Causes of the Third World epidemic

THE TOBACCO COMPANIES

In some developing countries, such as India, smoking locally made cigarettes (bidis) is a long established habit, and the major reason for the current explosion of smoking in the Third World has been the marketing drive of the multinational tobacco companies based in Britain and the United Stated.[44–46] With the shrinking markets in the developed world, the companies have conducted a monstrous promotional campaign in many developing countries.[47 48] They have used their vast financial resources to launch major advertising campaigns, to sponsor popular sporting events, and to win over politicians and decision makers. They have used threats of American sanctions to break into the markets

of Taiwan and South Korea, and to assert their right to intensive commercial promotion, previously forbidden in those countries. Now they are trying to do the same in Thailand. Advertisements for Western cigarettes are already seen in Chinese cities, where advertising is supposed to be forbidden. In many of these countries the advertising seeks to show cigarette smoking as smart, sophisticated, and Western. It aims in the first place to recruit opinion leaders, or future opinion leaders such as university students.

THE FEMALE MARKET

Smoking rates in women at present are low in many countries. The tobacco industry is clearly targeting its advertising at this potential growth market worldwide.[9 49] The industry claims that advertising is aimed only at persuading people to switch brands. But it launched an intensive advertising campaign orientated towards women in Hong Kong, where only a tiny percentage of women smoke; the promotional costs could have paid off only if a major new market among women was created.

CHILDREN

When smoking is introduced into a country it tends at first to be taken up by adults, often young adults. Only later do children seek to copy the adult habit. The emulation is, of course, stimulated by advertisements picturing smoking as a glamorous activity of successful adults. In Singapore and Tahiti, as in several industrialised countries, total bans on tobacco promotion seem to have made an important contribution to a decline in smoking rates in children.[50]

Responses to the Challenge

WORLD HEALTH ORGANISATION

Since the publication of the WHO expert committee reports drawing attention to the threat,[6 8] the climate of informed world opinion has gradually changed. The World Health Assembly has passed resolutions urging that the problem should be given higher priority. But for some time world action hardly matched world rhetoric. WHO had serious financial difficulties and devoted relatively small resources to this field. Nevertheless, its expert reports[5 6 8 51] were very influential, it collected many international data,[12 52] and it produced some useful guides.[53–56] After the success of "National No Smoking Days" in some countries, WHO initiated the first "World No Tobacco Day" in 1988. This had a major impact in many countries, including China, Philippines, South Korea, India, Pakistan, Bangladesh, and countries in the Eastern Mediterranean. Among the WHO regions, WHO Europe has already launched a comprehensive and enthusiastic programme. Programmes are in preparation in the American and the Eastern Mediterranean regions. A preparatory meeting is planned in the Western Pacific Region. The South East Asian Region held a workshop some years ago but seems to have no immediate plans for a formal programme. The African Region has so far given this problem low priority.

As a result of much international pressure, the Director General of WHO assembled an expert group in March 1988 to propose an expanded five year programme for WHO. Since then more central WHO resources have been allocated to this work. Additional extra-budgetary funds have been obtained, though the total available is still meagre by tobacco company standards. There has been active further planning. Practical proposals were put to an expert advisory group, including representatives of international non-governmental organisations, in November 1989. The programme was formally launched in January 1990. The prospects for a major global WHO drive against tobacco now seem much more hopeful.

NON-GOVERNMENTAL ORGANISATIONS

Several international non-governmental organisations have been very active. The International Union against Cancer (usually known by its French initials UICC) has for many years run an excellent programme, supported by generous donations from Norway. It has held many useful regional workshops in Asia and Africa, some jointly with WHO. Under the same aegis, and in cooperation with the International Organisation of Consumers' Union, the American Cancer Society has helped to set up an active network for coordinating action by non-governmental organisations in Latin America.[57] This has initiated a series of successful regional workshops. UICC has published several valuable handbooks.[58–60]

The International Union against Tuberculosis and Lung Disease formed a Tobacco and Health Committee in 1984. Since then all the Union's global and regional conferences have been non-smoking and have featured a plenary session on the problem of smoking; these have included conferences in Kuwait, Turkey, Sudan, Tunisia, Senegal, Nepal, Pakistan, and Singapore. A booklet,[61] summarising the evidence and suggesting how they might help, was sent to the several thousand individual IUATLD members (mostly doctors) in 113 countries and to all the affiliated national organisations. It was accompanied by a leaflet aimed at decision makers,[62] issued jointly with UICC. This was designed so that it could be modified for an individual country. So far it has been translated and adapted for use in Norway, Italy, Hong Kong, China, India, and probably elsewhere. An information booklet on relevant IUATLD and world tobacco activities is sent annually to members and affiliated organisations. To stimulate the interest of future doctors and their teachers, a survey of the smoking habits, knowledge, and attitudes of medical students has been conducted in some 40 countries, including many in the Third World. A preliminary analysis of results from 14 European countries[63] has suggested major deficiencies in medical education in this context; the results from developing countries may prove to be even more alarming. A similar global study among nurses is at present under discussion.

The International Organisation of Consumers Unions has decided to give high priority to tobacco's threat to consumers. This is proving a formidable campaigning body. It has appropriately called its campaigning wing AGHAST: Action Group to Halt Advertising and Sponsorship of Tobacco. It is concentrating on the Third World; the coordinating centre is in Penang, Malaysia. The organisation has held useful campaigning workshops in Asia as well as Latin America and Africa, and has successfully lobbied countries attending the World Health Assembly. It produces valuable supporting publications[45 48 64] as well as circulating regular updates on the misdoings of the tobacco industry.

Several new international initiatives in tobacco control are soon to be launched. They will link existing data bases and form a network to provide information, together with materials, training, and expert advice for anti-tobacco campaigners throughout the world, especially in developing countries.

Some other international non-governmental organisations have passed pious resolutions and recommended appropriate action, but have so far made little real effort to get their recommendations implemented. As tobacco is a major preventable cause of cardiovascular disease it is particularly encouraging to learn that the International Society and Federation of Cardiology is now considering setting up an expert group to stimulate effective action. So is the International Union for Health Education.

WORLD COOPERATION

Stemming from a "Summit of World Smoking Control Leaders" in Washington in 1985, organised by the American Cancer Society, there has been useful ongoing cooperation between the active international non-governmental organisations, and between these agencies and WHO. The leaders of the non-governmental organisations keep in touch regularly. There have been joint workshops or sessions in different parts of the world. Several international non-governmental organisations made important contributions to China's first international conference on smoking and health in Tianjin in 1987, which was followed by a further conference in Shanghai. Representatives of relevant non-governmental organisations participated in the meeting of the WHO Technical Advisory Group in Geneva in November 1989. It is present WHO policy to coordinate its work with that of these international NGOs. The Seventh World Conference on Tobacco and Health, to be held in Perth, Western Australia, in April 1990, will probably give a further boost to global cooperation.

National Action in the Third World

There is insufficient space to review national action in the Third World in depth but there are encouraging signs. The activities outlined above are beginning to have an effect. In a debate at the World Health Assembly in 1988 many developing countries outlined action they had taken or were contemplating. Though actual practice may not always have matched these intentions, the debate was good evidence of a major change in world opinion.

The following are a few examples of action that have been reported in recent years. All tobacco promotion has been banned in Singapore and Tahiti and this is at least being discussed in government circles in India. Legislative action on advertising has also been taken in Sudan, Ethiopia, Gambia, and Guinea. Advertising on television has now been prohibited in several countries. With the mounting evidence of the ill effects of passive smoking[65] many countries are limiting smoking in public places; some have made all domestic airline flights non-smoking. China, now the world's biggest consumer of tobacco, has begun to appreciate the imminent health disaster[17] and is actively considering legislation. Non-governmental campaigning organisations are becoming established in many countries. Among others these include India, Bangladesh, Kenya, Tanzania, and Swaziland.

ECONOMIC PROBLEMS

Some countries, especially in Africa, have relied heavily on tobacco growing as a source of foreign exchange. They are accordingly nervous about international or national tobacco control, especially in view of their vast debts, which are in turn affecting health.[66] Tobacco growing, of course, diverts land from food production.[46] The use of wood for tobacco curing causes deforestation and desertification. Moreover, with the growth of indigenous smoking, an increasing proportion of the crop often comes to be consumed locally and ceases to earn foreign exchange. The Food and Agriculture Organisation (FAO) of the United Nations is now prepared to help countries to find alternative marketable crops; it is ceasing to sponsor tobacco growing projects. Already Congo has converted a large industrial project from tobacco to soya. But so far countries have been slow to request this help.

Action by all of us

Physicians have led opinion on this issue.[1 2 67] They can still make major contributions to the build up of opinion in countries not yet facing up to the tobacco threat. They can encourage discussion and action in many contexts, medical and other.[61] What needs to be done is now well known and can be found in several publications.[6–8 10 50 53 54 58–60] Some countries have implemented certain items, legislative or other;[50] these actions have often shown an effect in reducing the smoking rates.[54] So far no country has implemented the full sweep of the recommendations. This could have a far more dramatic effect. And this, worldwide, is what we must all endeavour to bring about.

I am grateful to David Simpson, director of Action on Smoking and Health (ASH) UK, for helpful criticism of an earlier draft of this report.

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