

# **Chapter 12**

## **Smokeless Tobacco Use in the African Region**



## Chapter Contents

Description of the Region .....	357
Prevalence of Smokeless Tobacco Use.....	358
Types of Products and Patterns of Use .....	362
Toxicity and Nicotine Profiles .....	365
Health Problems Associated With Product Use.....	365
Marketing and Production Practices of Industry .....	367
Production.....	367
Distribution .....	367
Marketing.....	368
Current Policy and Interventions .....	369
Summary and Conclusions .....	370
References.....	372

## Tables, Figures, and Maps

Table 12-1	Population and land area of selected countries in the African Region .....	357
Table 12-2	Percentage of adolescents aged 13–15 years who currently used smokeless tobacco in the African Region, from the Global Youth Tobacco Surveys, 2007–2009.....	359
Table 12-3	Percentage of adults who currently used smokeless tobacco in the African Region, 2003–2010.....	360
Table 12-4	Toxicity and nicotine profiles of selected smokeless tobacco products used in the African Region.....	365
Figure 12-1	Snuff products used in some African countries .....	364
Figure 12-2	Snus information leaflets promoting situational use.....	369
Map 12-1	Prevalence of smokeless tobacco use among adults in the World Health Organization’s African Region .....	361



## Description of the Region

The African Region of the World Health Organization (WHO), as a geographic entity, refers to the area of the African continent that lies south of the Sahara, excluding the Sudan, South Sudan, and Somalia, but including Algeria and Mauritania. It covers a total area of about 30 million square kilometers.<sup>1</sup> The African Region consists of 46 countries<sup>2</sup> divided into 5 subregions: Western, Eastern, Southern, Central, and Northern. The population of the African Region was estimated at 839 million in mid-2010,<sup>1</sup> or 12.2% of the world's population, with a 2.5% rate of natural increase.<sup>3</sup> Table 12-1 displays land area and population information for 34 of these countries.<sup>4</sup> Rural Africans have the lowest level of accessibility in the developing world: less than 40% of rural Africans live within two kilometers of an all-season road.<sup>5</sup>

Of the 46 countries in the region, 41 had ratified the WHO Framework Convention on Tobacco Control (FCTC) as of September 2013.<sup>6</sup> The five countries that had not ratified the Convention as of 2012 are Malawi, Zimbabwe, Mozambique, Eritrea, and Ethiopia (Mozambique and Ethiopia have signed but not ratified). Malawi is one of the leading tobacco producers in the world, with an estimated yield of 208,105 metric tons in 2009<sup>7</sup>; tobacco is grown on about 3% of Malawi's total agricultural land.<sup>7</sup> South Africa is the largest and arguably the most lucrative cigarette market in the WHO African Region. Multinational tobacco companies are involved in the manufacture of both cigarettes and smokeless tobacco (ST) products in South Africa.

**Table 12-1. Population and land area of selected countries in the African Region**

Country	Area (km <sup>2</sup> )	Population (thousands)
Algeria	2,364,533	35,468
Benin	112,025	8,850
Botswana	669,000	2,007
Burkina Faso	274,483	16,469
Cameroon	478,024	19,599
Cape Verde	4,033	496
Central Africa	628,714	4,401
Chad	1,247,444	11,227
Congo	336,917	4,043
Côte d'Ivoire	323,574	19,738
Democratic Republic of Congo	2,357,000	65,966
Gambia	11,294	1,728
Ghana	239,137	24,392
Guinea	243,463	9,982
Kenya	578,757	40,513
Lesotho	30,153	2,171
Liberia	110,944	3,994
Madagascar	591,829	20,714

Country	Area (km <sup>2</sup> )	Population (thousands)
Malawi	118,262	14,901
Mali	128,083	15,370
Mauritania	1,153,333	3,460
Namibia	761,000	2,283
Nigeria	926,450	158,423
Rwanda	26,362	10,624
Sao Tome and Principe	959,302	165
Seychelles	458	87
Sierra Leone	7,156	5,868
South Africa	1,222,756	50,133
Swaziland	17,441	1,186
Tanzania (United Republic of)	954,064	44,841
Togo	56,868	6,028
Uganda	240,468	33,425
Zambia	769,941	13,089
Zimbabwe	392,844	12,571
<b>Total</b>	<b>18,336,112</b>	<b>664,212</b>

Abbreviation: km = kilometer.  
Source: United Nations 2011 (4).

## Prevalence of Smokeless Tobacco Use

Use of ST products is common in some countries of the African Region, and various forms of products are used. Little information is available on prevalence of use in the region, and the data that are available tend to be dated and/or limited to small areas or subregions. Tables 12-2 and 12-3 present the prevalence data for each African Region country for which data are available, by the types of products used and the age of users, and Map 12-1 illustrates the available adult prevalence rates by country. Caution should be exercised when comparing the estimates from different surveys, because of the differences in sampling, questions asked, and definitions. The definition of current use varies. For example, some surveys define current use as any use within the past 30 days, but other surveys ask about different time periods; some surveys ask about daily use and use on some days, and still other surveys ask about “current” use without defining the term further.

The prevalence of ST use varies across countries and across geographic areas within countries. For example, national prevalence rates for adults in Nigeria are relatively low (Table 12-3), but higher rates have been found in a state in the northeastern geopolitical zone of Nigeria among people aged 15 and older (10.8% for males and 4.1% for females).<sup>8</sup>

**Table 12-2. Percentage of adolescents aged 13–15 years who currently used smokeless tobacco in the African Region, from the Global Youth Tobacco Surveys, 2007–2009**

Country	Year	Total (%)	Boys (%)	Girls (%)
Botswana	2008	11.3	11.3	11.4
Burkina Faso – Bobo Dioulasso	2009	13.2	12.1	14.0
Burkina Faso – Ouagadougou	2009	10.2	11.2	9.2
Cameroon – Yaounde	2008	5.1	5.4	4.4
Cameroon – outside Yaounde	2008	10.9	12.0	9.4
Central African Republic – Bangui	2008	15.4	21.9	8.0
Congo	2009	16.4	18.3	14.1
Côte d'Ivoire	2009	5.6	6.2	4.9
Democratic Republic of Congo – Kinshasa	2008	20.8	20.6	20.1
Democratic Republic of Congo – Lubumbashi	2008	17.8	18.3	16.4
Gambia – Banjul	2008	21.9	20.1	23.3
Lesotho	2008	14.4	14.7	13.6
Liberia – Monrovia	2008	8.3	9.0	6.6
Madagascar	2008	5.7	6.2	5.4
Malawi – Lilongwe	2009	11.0	10.3	11.7
Malawi – rest of country	2009	8.9	11.3	6.7
Namibia	2008	16.0	15.6	15.8
Rwanda	2008	7.4	8.3	6.0
Seychelles	2007	5.5	5.2	5.4
Sierra Leone – West urban	2008	17.3	13.6	18.8
Sierra Leone – West rural	2008	22.7	18.9	24.5
Swaziland	2009	5.4	6.0	5.0
Tanzania – Arusha	2008	6.2	6.9	5.5
Tanzania – Dar es Salaam	2008	4.6	4.6	4.3
Tanzania – Kilimanjaro	2008	5.7	5.6	5.7
Togo	2007	6.2	6.9	4.8
Uganda	2007	9.4	8.6	9.6
Zambia – Lusaka	2007	15.6	0.9	15.4
Zambia – Kafue	2007	16.7	17.0	16.5
Zambia – Chongwe and Luangwa	2007	14.1	15.3	13.2
Zimbabwe – Bulawayo	2008	5.4	7.5	3.5
Zimbabwe – Harare	2008	5.7	6.4	5.0
Zimbabwe – Manicarland	2008	7.6	8.3	6.3

Source: Global Youth Tobacco Surveys, 2007–2009 (50).

**Table 12-3. Percentage of adults who currently used smokeless tobacco in the African Region, 2003–2010**

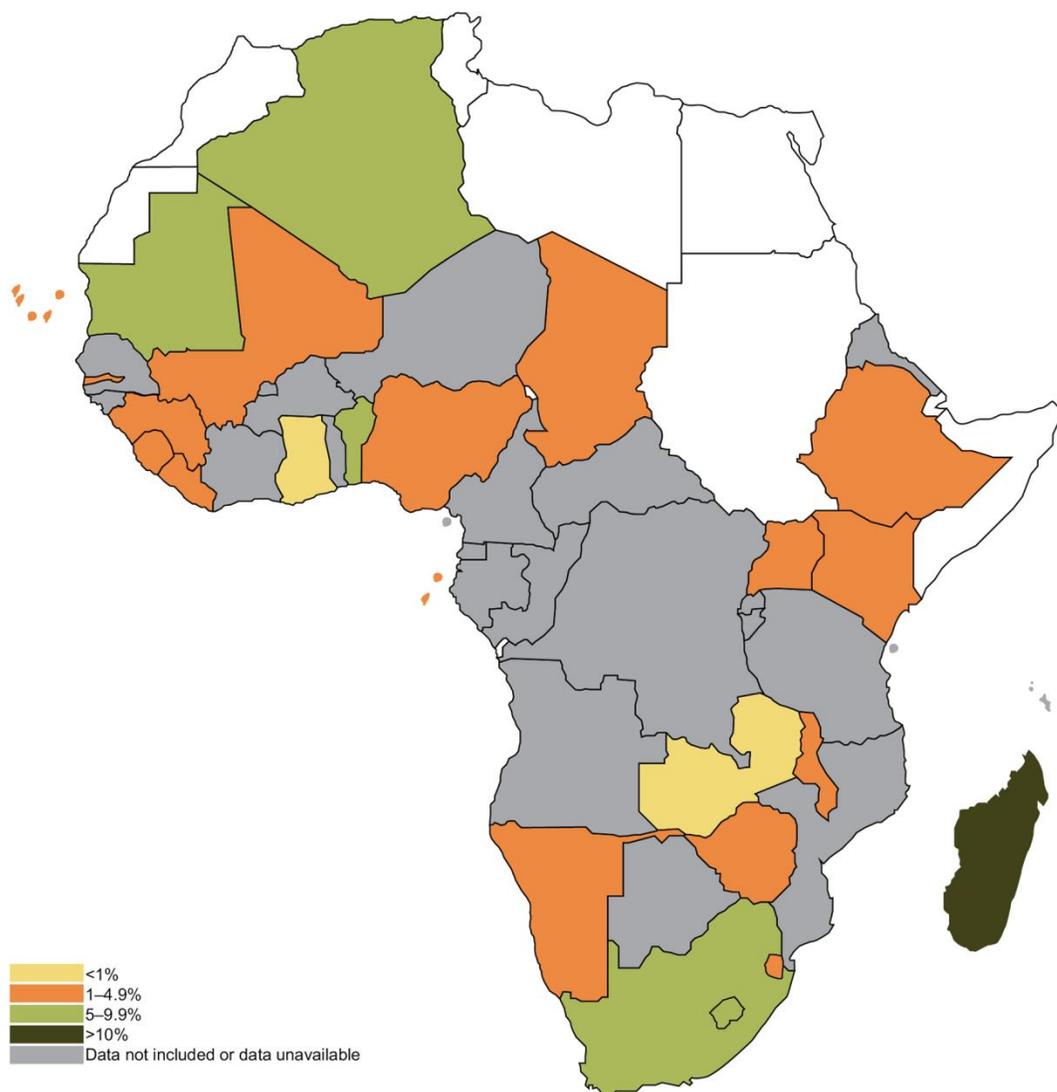
Country	Year	Age Group (Years)	Total (%)	Men (%)	Women (%)
Algeria*	2010	15+	5.7	10.4	0.8
Benin†	2008	25–64	9.2	12.7	5.7
Cape Verde*	2007	25–64	4.6	3.5	5.8
Chad (subnational)*	2008	25–64	1.2	1.9	0.4
Ethiopia‡	2005	Men, 15–59; Women, 15–49	—	3.0	0.6
Gambia†	2010	25–64	1.1	0.8	1.4
Ghana‡	2008	Men, 15–59; Women, 15–49	—	0.9	0.2
Guinea (subnational)†	2009	15–64	1.4	1.4	1.5
Kenya‡	2008–2009	Men, 15–54; Women, 15–49	—	1.8	1.3
Lesotho‡	2009	Men, 15–54; Women, 15–49	—	1.3	9.1
Liberia‡	2007	15–49	—	2.3	2.4
Madagascar‡	2008–2009	Men, 15–59; Women, 15–49	—	22.6	19.6
Malawi†	2009	25–64	3.5	1.9	5.0
Mali (subnational)†	2007	15–64	2.7	5.0	1.2
Mauritania†	2006	15–64	9.0	5.7	28.3
Namibia‡	2006–2007	15–49	—	1.8	2.3
Nigeria‡	2008	Men, 15–59; Women, 15–49	—	3.2	0.5
Sao Tome and Principe†	2009	25–64	2.8	3.8	1.9
Sierra Leone‡	2008	Men, 15–59; Women, 15–49	—	1.3	4.7
South Africa*	2003	15+	—	2.4	10.9
Swaziland†	2007	25–64	1.6	2.6	0.8
Uganda‡	2006	Men, 15–54; Women, 15–49	—	3.9	2.6
Zambia‡	2007	Men, 15–59; Women, 15–49	—	0.2	1.2
Zimbabwe‡	2005–2006	Men, 15–54; Women, 15–49	—	1.9	0.5

\*Individual country surveys from: *WHO Report on the Global Tobacco Epidemic, 2011* (51).

†WHO STEPS from: *WHO Report on the Global Tobacco Epidemic, 2011* (51).

‡Demographic and Health Surveys (52).

**Map 12-1. Prevalence of smokeless tobacco use among adults in the World Health Organization's African Region**



Note: A rate for males and females was not available for Ethiopia, Ghana, Kenya, Lesotho, Liberia, Madagascar, Namibia, Nigeria, Sierra Leone, South Africa, Uganda, Zambia, or Zimbabwe. For each of these countries, a total figure was calculated by averaging the available male and female rate.

Sources: Individual country surveys from: *WHO Report on the Global Tobacco Epidemic, 2011* (51); WHO STEPS from: *WHO Report on the Global Tobacco Epidemic, 2011* (51); Demographic and Health Surveys (52).

## Types of Products and Patterns of Use

Smokeless tobacco products available in the region include premade manufactured products as well as those produced by small cottage industries, and custom-made products for personal use or for sale by street vendors. These ST products are sniffed, chewed, sucked, or applied to the teeth and gums. Smokeless tobacco products are generally much cheaper than cigarettes<sup>8,9</sup> and are more widely used by people who are socioeconomically disadvantaged<sup>8,10</sup> and by older adults compared to younger adults.<sup>8,11,12</sup>

Snuff use is considered outmoded by many African people, thus it is not often practiced in public.<sup>13</sup> However, ST products such as snuff and areca nut with or without tobacco, previously popular only in a limited number of countries, are now being marketed heavily to specific target groups, including women, young people, and smokers.<sup>14</sup> Smokeless tobacco products are advertised to women, as an alternative to smoking in cultures where smoking by women is not socially acceptable; to young people, for whom flavored and milder-tasting “starter” products have been developed; and to smokers, for use where smoking is prohibited.<sup>14</sup> For those who are already tobacco dependent, snuff products are suggested as the most affordable and accessible way of getting sufficient nicotine.<sup>15</sup> Dual use of ST and cigarette smoking has been found to be common among South African adolescents in some parts of that country (55.2% of those who use ST are also smokers).<sup>9</sup> Similarly, data on adults from Nigeria suggest that as many as 21.1% of the surveyed ST users also smoked cigarettes.<sup>8</sup>

In Algeria, ST, especially moist snuff, has been consumed traditionally by the majority of men in all social groups. Locally, chemma or shammah is the term given to moist snuff, which is put directly on the gums or placed in paper and then placed in the mouth. Dry snuff is called neffa, which is taken in through the nose. Chemma, the most prevalent category of ST used, is available via both legal and illicit channels.<sup>13</sup>

In a number of West African countries, including northern Nigeria, Cameroon, Senegal, and Chad, a smokeless product locally known as taaba is widely consumed orally or by nasal inhalation. It is prepared from dry fermented tobacco pulverized to fine particles and mixed with natron (a mixture of sodium bicarbonate and sodium chloride). For oral consumption, a pinch of the product is placed between the lower gum and the lip, and the pinch is left in position for a few minutes to half an hour, until some active ingredients are absorbed. Taaba is also sometimes placed on the tongue and sucked. In several rural and urban areas of Nigeria, taaba is reportedly used because of its purported ability to “cure” certain medical ailments and because of its traditional place in social gatherings.<sup>8</sup>

Toombak imported from Sudan is also fairly common in Chad, in the West African region. Toombak is an oral snuff that is traditionally made by small local vendors in rural areas and transported to markets in the city for sale. Toombak is a custom-made blend of leaves of the *Nicotiana rustica* variety of tobacco mixed with sodium bicarbonate (baking soda) and stored for two hours or longer before sale.<sup>16</sup>

In Ghana, local snuff is prepared by mixing the dried tobacco leaf indigenous to the forested areas (*N. tabacum*) with chemicals such as saltpeter (potassium nitrate) and then grinding it into a fine powder. Dried tobacco leaves are also a form of ST, which users chew. After roasting the tobacco leaves, users traditionally dip the roasted tobacco into the fly ash of wood before inserting it between the

lower gum and lip.<sup>17</sup> To intensify the delivery of free nicotine, users add an alkaline agent (in this case, ash) as do other producers of tobacco products worldwide.<sup>18</sup> Snuff is consumed mostly by older adults in Ghana, but youth are reportedly becoming more interested in using it.<sup>17</sup> The increasing interest among youth is consistent with findings from the Global Youth Tobacco Survey (GYTS) from Ghana, which showed that 10.4% of youths surveyed reported using tobacco products other than cigarettes.<sup>19</sup> Further inquiries with those who conducted the survey suggest that these “other tobacco products” are predominantly snuff (Edith Wellington, personal communication, 2011).

In South Africa, snuff is applied nasally and orally, and tobacco is chewed. Historically, inhalation is the most common practice (about 75% of ST users sniff). Snuff use in South Africa is predominantly found among African women, who traditionally have low smoking rates.<sup>12</sup> In a qualitative study carried out in South Africa involving a focus group of black women, there was consensus among all participants that cigarettes and snuff were the types of tobacco most commonly used in the community.<sup>20</sup> However, snuff was considered women’s tobacco, commonly used by older women and rarely used by men.<sup>20</sup> South African women of Indian descent mostly chew areca (betel) nut. Most users prefer only the nut, some the betel quid with or without tobacco, and some use both the nut and the quid.<sup>21,22</sup> Other ingredients may be added by the user to taste or based on traditional customs and usage.<sup>21</sup>

In South Africa and neighboring countries, including Lesotho, similarly prepared traditional homemade products and a limited range of premade products are used. Some traditional products are prepared by hand-mixing finely ground sun-dried tobacco leaf and ash (mokgako) from local plants, depending on plant availability and cultural preference. Mokgako is used as a condiment or flavor intensifier.<sup>23–25</sup> With regard to commercially manufactured products, since 2003 multinational tobacco companies such as British American Tobacco and Swedish Match have continually introduced various local brand equivalents of Swedish snus in test markets across South Africa, albeit with limited sales success to date.<sup>26,27</sup>

In Uganda, the use of gutka is said to be increasing among adolescents as a result of imports by the Indian community, although the use of ST among South Africans of Indian descent has declined to become almost insignificant. The dry snuff known as taaba is also consumed in Uganda, particularly by the Bakiga tribe and some other rural tribes, and primarily by middle-aged men and women. Taaba is mainly sniffed, but is occasionally held in the cheek. Fresh or dried tobacco leaves are also wrapped around magadi (sodium bicarbonate) and placed in the cheek until the desired effect is obtained.

In Tanzania, three types of ST products are used. Kuberi and ugoro (moist oral snuff) are used by indigenous people, and thinso (tobacco with areca nut, more widely known as gutka), which is used by migrants of Indian descent. Kuberi is the most popular product, followed by ugoro. Ugoro is either placed under the tongue or sniffed. Thinso is either placed in the cheek or chewed, together with areca nut, similar to the practice in India. Tobacco is imported from India in many flavors, but areca nut is grown locally. Use of areca nut with tobacco appears to be on the increase, especially among Asians in the country.<sup>8</sup>

From the limited data obtained from 10 countries covering almost half of the region's total population, it can be deduced that, in general, products and customs associated with ST use in different parts of Africa vary widely (Figure 12-1). There is a widespread perception that snuff possesses “medicinal” properties.<sup>8,20,23,28</sup> Medicinal uses that have been reported include relief from physical conditions such as headache, nose bleeds, sinus problems, and toothache. Reports of these beliefs highlight the importance of cultural sensitivity in the development of public health education interventions to reduce ST use in the region.

**Figure 12-1. Snuff products used in some African countries**



Two popular South African manufactured snuff brands in containers and traditional vendor/individual-made snuff in plastic bags



New commercial snuff brand on the Algerian market, imported from Belgium



Snuff being prepared traditionally by women for a wedding ceremony in South Africa



Contents of a can of a manufactured moist snuff brand—Makla Bouhlel

Source: Photos courtesy of Olalekan Ayo-Yusuf, University of Pretoria, 2011.

## Toxicity and Nicotine Profiles

Only limited data are available on the toxicity of ST products used in the region, but product testing suggests considerable variability in the toxicity and nicotine profiles of these products. Generally, the commercialized products tend to have lower levels of carcinogenic tobacco-specific nitrosamines (TSNAs) than traditional custom-made products, one exception being traditional products used in Nigeria, which contain notably lower levels of TSNAs than traditional products in Chad, Ghana, and South Africa, and even lower than the levels in the manufactured snus products on the South African market (Table 12-4).

**Table 12-4. Toxicity and nicotine profiles of selected smokeless tobacco products used in the African Region**

Country	Products (n)	Heavy metals (ppm)				BaP (ng/g)	TSNAs (ng/g)	pH	Free nicotine (mg/g) (% of total nicotine)
		Cr	Pb	Cd	Ni				
Sudan*	Toombak (4)						295,000–992,000	7.38–10.1	5.16 (18.3%)–10.6 (98.6%)
Ghana	Traditional snuff (5)	0.95–1.41		1.06–1.11					
South Africa	Traditional snuff (3)	9–84	6–8	1.1–1.5	25–87	4,550	20,500 (n = 1)	9.29	5.01 (94.8%)
	Commercial snuff (3)						1,710–4,670	9.15–10.1	1.16 (99.1%)–13.8 (92.9%)
	Commercial snus (2)						1,720–5,850	6.48–7.02	0.47 (2.7%)–1.19 (8.9%)
Nigeria	Traditional snuff (1)						1,520	9.42	2.39 (96.1%)
	Commercial snuff (1)						2,420	9.02	6.72 (90.7%)

\*Data on Sudanese toombak are presented here for comparison purposes.

Abbreviations: ppm = parts per million. Cr = chromium, Pb = lead, Cd = cadmium, Ni = nickel, BaP = benzo(a)pyrene.

ng/g = nanograms per gram of tobacco, TSNAs = tobacco-specific nitrosamines, mg/g = milligrams per gram of tobacco.

Sources: For South Africa, Nigeria and Chad, data on pH, nicotine, and TSNA: Stanfill et al. 2011 (29); For Ghana, heavy metals data: Addo 2008 (17); for South Africa, heavy metals and BaP data: Keen 1973 (53).

## Health Problems Associated With Product Use

An important consideration is that biologic effects of ST observed in Western countries may not be generalizable to Africa because of differences in the composition of ST products and cultural differences in patterns of use.<sup>23</sup>

In general, only limited data are available on the negative oral health effects of ST use in the region. In South Africa, where the highest pH values of any premade manufactured ST brands have been found,<sup>29</sup> snuff-dipping has been associated with oral keratotic lesions,<sup>30</sup> which were more severe with the higher-pH manufactured snuff brands than with traditional products.<sup>23</sup> Past studies have demonstrated that

Indian women in South Africa have the highest incidence of oral cancer, which has been associated with the use of areca nut with or without tobacco,<sup>22,30</sup> compared with women in any other population group in the country. Since about 1990, however, no large population studies have been carried out on oral cancer incidence among South Africans. As of 2005, in North Africa, snuff has been associated with a significant increase in the risk of nasopharyngeal cancer.<sup>31</sup>

In terms of reproductive outcomes, ST use in South Africa has been associated with significantly reduced gestational age, but not with low birth weight.<sup>32</sup> A study in the Democratic Republic of Congo suggested that as many as 41% of pregnant women had ever tried snuff, compared to 14% who had ever tried cigarettes.<sup>33</sup> Similarly, about 8% of pregnant women in Lesotho reported snuff use during pregnancy.<sup>34</sup> Such high rates of use by pregnant women indicate a need for further studies on the effect of ST on reproductive outcomes in the African Region. In addition, a 2009 study on a population of women in Côte d'Ivoire associated ST use with a precursor lesion for cervical cancer.<sup>35</sup>

Demographic and Health Survey data have suggested that South African nasal snuff is associated with an increased risk for chronic bronchitis and tuberculosis.<sup>36</sup> Consistent with this finding is a report from a study of lung function among snuff industry workers in Nigeria, which showed that chronic exposure to snuff dust was associated with impaired lung function which was worse depending on the length of exposure in the industry.<sup>37</sup> The impact of nasal application of ST on the already high burden of respiratory diseases such as tuberculosis in the African Region requires further investigation.

Heavy snuff use among South African women has been associated with significantly increased blood pressure to levels that increase the risk for cardiovascular diseases at a population level.<sup>10</sup> A small study from 1992 in Nigeria also demonstrated that snuff use was associated with increased systolic and diastolic pressure, although this effect was less pronounced when natron was not an ingredient in the snuff mixture.<sup>38</sup> These findings are consistent with results of a multicountry study that included ST users in Africa; this study showed that ST use was associated with a significantly increased risk of non-fatal myocardial infarction (MI).<sup>39</sup> However, according to a meta-analysis, heterogeneous results have been obtained for the role of ST in non-fatal MI, and this research suggests that the risk of fatal MI may be greater than the risk of non-fatal MI among ST users.<sup>40</sup>

Despite the popular belief that ST has “medicinal effects,” a pilot study from South Africa on the antibacterial potential of ST found that the snuff products tested did not inhibit bacterial growth; the study instead demonstrated possible bacterial activities in both the commercial and non-commercial snuff products tested.<sup>25</sup>

Although few studies in the African Region have addressed the level of nicotine dependence associated with ST use, the nicotine profiles of some of the products studied suggest significant potential for nicotine dependence.<sup>29</sup> A previous South African qualitative study found that as many as 36% of women snuff users who reported having made an attempt to quit had no success, but about 67% of surveyed users wished to quit,<sup>20</sup> thus suggesting that snuff use is as difficult to quit as cigarette smoking. Another study among an elderly Nigerian population also reported that as many as 50% of those surveyed were diagnosed with “snuff tobacco dependence.”<sup>41</sup>

## Marketing and Production Practices of Industry

### Production

Except in a few African Region countries where imported commercially manufactured ST products are available, most of the ST products used in the region are made by the users themselves or by small cottage industries. Traditional or custom-made brands are more commonly used in rural areas, whereas commercially manufactured brands are more common in urban areas.<sup>42</sup>

The biggest manufacturer of ST in Algeria is the Société Nationale des Tabacs et Allumettes (SNTA), a public entity with a market value share of 88% in 2009.<sup>13</sup> SNTA produces the leading brands Makla El Hilal and Nedjema. A private company, Bentchikou Tabacs Algérie, which accounts for the remaining market share, has gained ground since it entered the country in 2006 with its brands Naffa Africaine, Makla Ifriquia, and Makla Bouhlel (Figure 12-1). The national company SNTA had a monopoly on production before the appearance of this competitor, and it remains the category leader because consumers are used to its products. However, Bentchikou Tabacs Algérie, which imports its products from its headquarters in Belgium, is steadily gaining market share in Algeria.<sup>13</sup>

The two leading premade manufactured brands in South Africa, Taxi and Ntsu, were largely under the control of two small local manufacturers until 1999, when Swedish Match bought out the company that manufactures Taxi.<sup>43</sup> More recently, in 2009, Phillip Morris International paid approximately US\$225 million (ZAR1.75 billion) to purchase Swedish Match South Africa.<sup>44</sup>

Products used in Nigeria, similar to products used in the rest of Africa, are largely locally made by cottage industries, but limited numbers of premade manufactured brands are also available. The most commonly found imported brand is Medicated Snuff 99, manufactured by Joseph & H. Wilson, which is based in the United Kingdom.

### Distribution

In Algeria, news agents/tobacconists or kiosks remain the leading distribution channel, representing 67% of the sales volume in 2009. Tobacconists and kiosks are widely distributed across the country, and they offer the largest stock range. They distribute both legal and illegal products,<sup>13</sup> although illicit tobacco products may also be available from other street or local vendors.

Smokeless tobacco products in South Africa are sold mostly by street vendors, local convenience stores, or at kiosks, where they are displayed together with cigarettes, candy, and confections. More recently, South African snuff brands manufactured by Philip Morris International have become available on an Internet snuff sales website based in the United Kingdom. Custom-made or traditional snuff products are sold from plastic buckets in open markets in South Africa and Nigeria and are dispensed in spoon-sized portions that are transferred to plastic bags, as requested by the customer. In Nigeria, it is also possible to request a mixture of local products and imported products. Ugoro, wrapped in banana bark, is sold in Tanzania in open-air markets.

## Marketing

Being primarily a cottage industry or custom-made product in this region, smokeless tobacco is not widely advertised. In Algeria, tobacco promotion is permitted at points of sale, but ST is not usually advertised, primarily because neither manufacturers nor retailers find it useful to create displays. In Tanzania, to market to adolescents, ST is often given a flavor or described as a type of nutrient supplement.<sup>14</sup> Larger industries such as British American Tobacco and Swedish Match attempted to introduce snus equivalents, particularly in South Africa, between 2001 and 2008, but have had limited success.<sup>26,27</sup> In this region, snus has also been promoted with health claims and for use in situations where smoking is not permitted (Figure 12-2), which may encourage dual use.

Previously confidential industry documents suggest that additives or flavorings may be added to mask the poor quality of some products or to target certain population groups, as indicated by the following quotes related to snuff manufacture in Nigeria and South Africa, respectively:

*"Many snuff formulations are flavoured with added levels of top dressing flavours. ... Top dressing flavours include menthol, peppermint oil, wintergreen, attar of roses and clove oil. I suggest a menthol and peppermint flavoured version might be appropriate for the Nigerian market as a significant proportion of your cigarettes are mentholated. The added flavour may also help to cover some of the product deficiencies (sic) that a connoisseur of classic European snuff might find in a simple domestic product."*

(Letter from D. E. Creighton, British American Tobacco Company,  
to R. M. H. Duncan, Nigerian Tobacco Company,  
July 3, 1985)<sup>45</sup>

*"One major point is that with our wet snuff there must be a noticeable ammonia nose to the product, all products have this distinct characteristic and [it] is sought after by the Black consumer in this country."*

(Letter from G. A. S. Wingate-Pearse, United Tobacco/Tabak,  
to B. Louw, British American Tobacco Company,  
October 12, 1987)<sup>46</sup>

Figure 12-2. Snus information leaflets promoting situational use



Note: These leaflets are available at points of sale in South Africa.  
Source: Photo courtesy of Olalekan Ayo-Yusuf, University of Pretoria, 2011.

## Current Policy and Interventions

In general, no organized public health education programs or cessation programs for ST exist in the African Region. In Tanzania, the sale of ST was officially banned in 2006, although it has been suggested that more stringent monitoring and enforcement are needed.<sup>14</sup> In Algeria, ST containers are subject to the same legislation as the packaging of other tobacco products, which includes specified health warnings. However, cigarette packages have multiple “rotating” health warnings on their packages, which are required to cover 15% of the entire package, but these same requirements are not mandated for ST products.<sup>47</sup> The government does not regulate the marketing or distribution of ST products in Algeria, nor does it regulate Internet retailing and advertising of tobacco products. However, as a result of limited Internet penetration, the introduction of payment cards, and inadequate delivery systems, Internet sales do not exist in Algeria for any category of tobacco products.<sup>13</sup>

In the Democratic Republic of Congo, traditional snuff is more expensive than cigarettes: A portion of snuff (~2 grams [g]) costs about US\$0.50, whereas a pack of cigarettes costs about US\$2.00. In South Africa, excise tax is payable on cigarettes but not on ST or snuff products, therefore snuff is much less expensive than cigarettes in South Africa: A 20 g can of snuff typically costs ZAR5 (US\$0.70), compared to ZAR27 (US\$3.50) for a pack of 20 cigarettes. Traditional homemade snuff products are even cheaper. South African law, however, prohibits the sale of any tobacco products to minors (<18 years) and bans advertisement and promotion of all ST products as well as cigarettes. Furthermore, manufacturers of ST products are required by regulation to place the phrase “Causes cancer” on every can of snuff.<sup>48</sup>

### Summary and Conclusions

The Demographic and Health Survey<sup>52</sup> conducted in many African countries provides an opportunity to study the prevalence and, in some instances, the health effects of these products. Prevalence of ST use varies widely across countries, with the national prevalence in Madagascar as high as 22.6% for men and 19.6% for women, whereas in Nigeria rates are as low as 3.2% for men and 0.5% for women, although other data have suggested that prevalence may be higher in certain areas of Nigeria such as the northeastern geopolitical zone.

Smokeless tobacco products in the African Region are consumed in a variety of ways (sniffed, chewed, sucked, or applied to teeth and gums) and for a variety of reasons, including the perception that snuff has medicinal properties. With a few exceptions, most products available in the region are produced by small cottage industries and sold by local vendors.

More studies are needed on the extent of use, toxicity profiles, and health effects of ST used in the region. Although available data are somewhat limited, the nicotine content and toxicity of ST products appear to vary widely in this region. There are a few exceptions, but for the most part, premade manufactured products tend to have lower levels of tobacco-specific nitrosamines than custom-made products.

Data on the health effects of ST products in this region are also quite limited; however, existing data from some parts of Africa suggest that these products are associated with increased risk of oral pathologies and elevated blood pressure. Nasal snuff use is associated with increased risks of nasopharyngeal cancer and respiratory disease. More information on the health effects of ST use may provide governments with much-needed incentives to take urgent action to curb the further spread of ST use and its health consequences.

Articles in the WHO FCTC should be considered for implementation for smokeless tobacco use. Few studies have assessed how effective graphic health warnings covering 50% of the package display area will be for ST, and this would be an area worth evaluating. Wherever it is clear that ST is a popular commercial product, the guidelines on Articles 9 and 10 of the Framework Convention, adopted by the Conference of Parties in 2010, could provide a legal basis for governments to consider banning the use of flavorings in these products in order to reduce their attractiveness to youth. African countries, many of which are parties to the WHO FCTC, could benefit from extending the other relevant sections of the Convention in order to control ST use, including implementation of the guidelines related to banning advertisements for such products (Article 13), educating the public (Article 12), and promoting tobacco use cessation (Article 14). Public education could include teaching local vendors and small-scale producers how to limit nitrosamine content through best practices in agronomics (such as by using *N. tabacum* plant species instead of *N. rustica*, which may reduce levels of carcinogens in some products). Parallel to these interventions, the public, including traditional health practitioners, could benefit from education about the harms of using ST, and all users should be encouraged to quit. As the WHO Study Group on Tobacco Product Regulation suggested, strict regulatory controls, including setting manufacturing standards, should be applied to commercial snuff manufacturers, starting with limiting the toxicant levels.<sup>49</sup>

Finally, considering this region's limited institutional and financial capacity for tobacco control research and for tobacco control in general, future efforts to document and monitor toxicity and the health effects of ST products in the region will require international collaboration, as envisaged in Articles 21 and 22 of the WHO FCTC.

## References

- World Atlas. Countries of the world 2010. Galveston, TX: World Atlas; [cited 2011 Jul 19]. Available from: <http://www.worldatlas.com/aatlas/populations/ctypopls.htm>
- World Health Organization. WHO country offices in the WHO African Region [Internet]. Brazzaville, Republic of Congo: World Health Organization, Regional Office for Africa; c2009–2012. [cited 2013 Sep 25]. Available from: <http://www.afro.who.int/en/countries.html>
- Population Reference Bureau. 2010 World population data sheet. Washington, DC: Population Reference Bureau; 2010. Available from: <http://www.prb.org/Publications/Datasheets/2010/2010wpds.aspx>
- United Nations, Department of Economic and Social Affairs, Population Division. World population prospects, the 2010 revision. New York: United Nations; 2011. Available from: <http://esa.un.org/unpd/wpp/index.htm>
- Gwilliam K, Foster V, Archondo-Callao R, Briceño-Garmendia C, Nogales A, Sethi K. The burden of maintenance: roads in Sub-Saharan Africa. Africa Infrastructure Country Diagnostic: background paper 14 (phase I). Washington, DC: The World Bank; 2008. Available from: [http://www.infrastructureafrica.org/system/files/BP14\\_Roads\\_maintxtnew\\_2.pdf](http://www.infrastructureafrica.org/system/files/BP14_Roads_maintxtnew_2.pdf)
- World Health Organization. Parties to the WHO Framework Convention on Tobacco Control. Geneva: World Health Organization, Framework Convention on Tobacco Control; [updated 2013 June 25] [cited 2013 Sep 25]. Available from: [http://www.who.int/fctc/signatories\\_parties/en/index.html](http://www.who.int/fctc/signatories_parties/en/index.html)
- Eriksen M, Mackay J, Ross H. The tobacco atlas. 4th ed. Atlanta: American Cancer Society; New York: World Lung Foundation; 2012. Available from: <http://www.tobaccoatlas.org>
- Desalu OO, Iseh KR, Olokoba AB, Salawu FK, Danburam A. Smokeless tobacco use in adult Nigerian population. Niger J Clin Pract. 2010;13(4):382–7.
- Rantao M, Ayo-Yusuf OA. Dual use of cigarettes and smokeless tobacco among South African adolescents. Am J Health Behav. 2012;36(1):124–33.
- Ayo-Yusuf OA, Omole OB. Snuff use and the risk for hypertension among black South African women. SA Fam Pract. 2008;50(2):64–64c.
- Townsend L, Flisher AJ, Gilreath T, King G. A systematic literature review of tobacco use among adults 15 years and older in sub-Saharan Africa. Drug Alcohol Depend. 2006;84(1):14–27.
- Peer N, Bradshaw D, Laubscher R, Steyn K. Trends in adult tobacco use from two South African Demographic and Health Surveys conducted in 1998 and 2003. S Afr Med J. 2009;99(10):744–9.
- Euromonitor International. Country report: smokeless tobacco in Algeria. August 2010. Available by subscription from: <http://www.euromonitor.com>
- Kaduri P, Kitua H, Mbatia J, Kitua AY, Mbwambo J. Smokeless tobacco use among adolescents in Ilala Municipality, Tanzania. Tanzan J Health Res. 2008;10(1):28–33.
- Nyinondi P, Mazuni F, Chubwa P, Machangu R. Determinants of smokeless tobacco use among selected populations in Tanzania. Presentation at the 14th World Conference on Tobacco or Health, 2009 March 8–12, Mumbai, India.
- Idris AM, Prokopczyk B, Hoffmann D. Toombak: a major risk factor for cancer of the oral cavity in Sudan. Prev Med. 1994;23(6):832–9.
- Addo MA, Gbadago JK, Affum HA, Adom T, Ahmed K, Okley GM. Mineral profile of Ghanaian dried tobacco leaves and local snuff: a comparative study. J Radioanal Nucl Chem. 2008;277(3):517–24.
- Tomar SL, Henningfield JE. Review of the evidence that pH is a determinant of nicotine dosage from oral use of smokeless tobacco. Tob Control. 1997;6(3):219–25.
- Centers for Disease Control and Prevention and World Health Organization. Global Tobacco Surveillance System Data (GTSSData) – Dataset for Ghana, 2009 [Internet]. Atlanta: Center for Disease Control and Prevention; 2009 [cited 2012 Jan 25]. Available from: <http://nccd.cdc.gov/gtssdata/Ancillary/DataReports.aspx?CAID=2>
- Ajani FA. Prevalence and determinants of snuff use among adult women in Mabopane, North-West Province [M.P.H. thesis]. Johannesburg, South Africa: University of Witwatersrand; 2001.
- van Wyk CW, Stander I, Padayachee A, Grobler-Rabie AF. The areca nut chewing habit and oral squamous cell carcinoma in South African Indians. A retrospective study. S Afr Med J. 1993;83:425–9.
- Bissessur S, Naidoo S. Areca nut and tobacco chewing habits in Durban, KwaZulu Natal. SADJ. 2009;64(10):460–3.
- Ayo-Yusuf OA, Swart TJ, Ayo-Yusuf IJ. Prevalence and pattern of snuff dipping in a rural South African population. SADJ. 2000;55(11):610–4.
- Ayo-Yusuf O, Peltzer K, Mufamadi J. Traditional healers' perception of smokeless tobacco use and health in the Limpopo Province of South Africa. Subst Use Misuse. 2006;41(2):211–22.

25. Ayo-Yusuf OA, van Wyk C, van Wyk CW, de Wet I. Smokeless tobacco products on the South African market do not inhibit oral bacterial flora: a pilot study. *SA J Epidemiol Infect.* 2005;20(4):136–9.
26. Simpson D. Swedish Match: sucked into controversy, worldwide. *Tob Control.* 2005;14(4):223–4.
27. British American Tobacco. Sustainable growth: sustainability summary, 2010. London: British American Tobacco; no date [cited 2014 Jan 31]. Available at: [http://www.bat.com/groupfs/sites/BAT\\_89HK76.nsf/vwPagesWebLive/DO7QJMQZ?opendocument&SKN=1](http://www.bat.com/groupfs/sites/BAT_89HK76.nsf/vwPagesWebLive/DO7QJMQZ?opendocument&SKN=1)
28. Peltzer K, Phaswana N, Malaka D. Smokeless tobacco use among adults in the Northern Province of South Africa: qualitative data from focus groups. *Subst Use Misuse.* 2001;36(4):447–62.
29. Stanfill SB, Connolly GN, Zhang L, Jia LT, Henningfield JE, Richter P, et al. Global surveillance of oral tobacco products: total nicotine, unionised nicotine and tobacco-specific *N*-nitrosamines. *Tob Control.* 2011;20(3):e2. Epub 2010 Nov 25. doi: 10.1136/tc.2010.037465
30. Hille JJ, Shear M, Sitas F. Age standardized incidence rates of oral cancer in South Africa, 1988–1991. *J Dent Assoc S Afr.* 1996;51(12):771–6.
31. Feng BJ, Khyatti M, Ben-Ayoub W, Dahmoul S, Ayad M, Maachi F, et al. Cannabis, tobacco and domestic fumes intake are associated with nasopharyngeal carcinoma in North Africa. *Br J Cancer.* 2009;101(7):1207–12.
32. Steyn K, de Wet T, Saloojee Y, Nel H, Yach D. The influence of maternal cigarette smoking, snuff use and passive smoking on pregnancy outcomes: the Birth to Ten Study. *Paediatr Perinat Epidemiol.* 2006;20(2):90–9.
33. Chomba E, Tshetu A, Onyamboko M, Kaseba-Sata C, Moore J, McClure EM, et al. Tobacco use and secondhand smoke exposure during pregnancy in two African countries: Zambia and the Democratic Republic of the Congo. *Acta Obstet Gynecol Scand.* 2010;89(4):531–9.
34. Ministry of Health and Social Welfare (Lesotho). Lesotho Demographic and Health Survey 2004. Calverton, MD: Lesotho Ministry of Health and Social Welfare, Bureau of Statistics, and ORC Macro; 2005. Available from: <http://www.measuredhs.com/pubs/pdf/FR171/FR171-LS04OneLgFile.pdf>
35. Simen-Kapeu A, La Roche G, Kataja V, Yliskoski M, Bergeron C, Horo A, et al. Tobacco smoking and chewing as risk factors for multiple human papillomavirus infections and cervical squamous intraepithelial lesions in two countries (Côte d’Ivoire and Finland) with different tobacco exposure. *Cancer Causes Control.* 2009;20(2):163–70.
36. Ayo-Yusuf OA, Reddy PS, van den Borne BW. Association of snuff use with chronic bronchitis among South African women: implications for tobacco harm reduction. *Tob Control.* 2008;17(2):99–104.
37. Maduka SO, Osim EE, Nneli RO, Anyabolu AE. Effect of occupational exposure to local powdered tobacco (snuff) on pulmonary function in south eastern Nigerians. *Niger J Physiol Sci.* 2009;24(2):195–202.
38. Orie NN, Ibanga IN. The effect of *Nicotiana tabacum* (snuff) on blood pressure and pulse rate of Nigerians. *East Afr Med J.* 1992;69(9):535–8.
39. Teo KK, Ounpuu S, Hawken S, Pandey MR, Valentin V, Hunt D, et al. Tobacco use and risk of myocardial infarction in 52 countries in the INTERHEART study: a case-control study. *Lancet.* 2006;368(9536):647–58.
40. Boffetta P, Straif K. Use of smokeless tobacco and risk of myocardial infarction and stroke: systematic review with meta-analysis. *BMJ.* 2009;339(7718):b3060.
41. Uwakwe R. The pattern of psychiatric disorders among the aged in a selected community in Nigeria. *Int J Geriatr Psychiatry.* 2000;15(4):355–62.
42. Ayo-Yusuf OA, Swart TJ, Pickworth WB. Nicotine delivery capabilities of smokeless tobacco products and implications for control of tobacco dependence in South Africa. *Tob Control.* 2004;13(2):186–9.
43. Swedish Match. Swedish Match acquires snuff and pipe tobacco company in South Africa [press release]. Stockholm: Swedish Match; 1999 Oct 6. Available from: [http://www.swedishmatch.com/Reports/press/EN\\_118\\_1\\_19991006.pdf](http://www.swedishmatch.com/Reports/press/EN_118_1_19991006.pdf)
44. Swedish Match. Swedish Match finalizes the sale of its South African operation to Philip Morris International and repurchases own shares [press release]. Stockholm: Swedish Match; 2009 Sep 14. Available from: <https://www.swedishmatch.com/en/Media/Pressreleases/Press-releases/2009/Swedish-Match-finalizes-the-sale-of-its-South-African-operation-to-Philip-Morris-International-and-repurchases-own-shares/>
45. Creighton DE. Dry snuff. Bates no. 400419507–9. British-American Tobacco Company Limited; 1985 Jul 3. Available from: <http://legacy.library.ucsf.edu/tid/fkc72a99/pdf>
46. Wingate-Pearse GAS. Wet and dry snuff production. Bates no. 304569062. United Tobacco Companies Limited; 1987 Oct 23 [cited 2011 Jul 7]. Available from: <http://legacy.library.ucsf.edu/tid/gao11a99/pdf>
47. World Health Organization. WHO report on the global tobacco epidemic, 2011. Country profile: Algeria. Geneva: World Health Organization; 2011. Available from: [http://www.who.int/tobacco/surveillance/policy/country\\_profile/dza.pdf](http://www.who.int/tobacco/surveillance/policy/country_profile/dza.pdf)

48. Tobacco Products Control Act 83 of 1993 (South Africa). Regulations relating to the labelling, advertising, and sale of tobacco products (June 22, 1993). South African Government Gazette no. 2063. Pretoria: Government Printers; 1994. Available from: <http://www.tobaccocontrollaws.org/files/live/South%20Africa/South%20Africa%20-%20Tobacco%20Products%20Control%20Act%20-%20national.pdf>
49. World Health Organization Study Group on Tobacco Product Regulation. Report on the scientific basis of tobacco product regulation. Second report of a WHO study group. WHO technical report series no. 951. Geneva: World Health Organization; 2008.
50. Centers for Disease Control and Prevention. [Unpublished data from the 2007–2010 Global Youth Tobacco Surveys (GYTS).] Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; [no date] [cited 2012 Jan 25]. Available from: [http://www.who.int/tobacco/global\\_report/2011/en\\_tfi\\_global\\_report\\_2011\\_appendix\\_viii\\_table\\_2.pdf](http://www.who.int/tobacco/global_report/2011/en_tfi_global_report_2011_appendix_viii_table_2.pdf)
51. World Health Organization. WHO report on the global tobacco epidemic, 2011. Appendix VIII—Table 8.2: Crude smokeless tobacco prevalence in WHO member states. Geneva: World Health Organization; 2011. Available from: [http://www.who.int/tobacco/global\\_report/2011/en\\_tfi\\_global\\_report\\_2011\\_appendix\\_viii\\_table\\_2.pdf](http://www.who.int/tobacco/global_report/2011/en_tfi_global_report_2011_appendix_viii_table_2.pdf)
52. Kishor S, et al. Prevalence of current cigarette smoking and tobacco use among women and men in developing countries. Forthcoming, 2014 [cited 2012 Jan 25].
53. Keen P. Trace elements in plants and soil in relation to cancer. *S Afr Med J*. 1974;48(57):2363–4.