



# Scientific Facts on Alcohol

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This Digest is a faithful summary of the leading scientific consensus report  
produced in 2004 by the World Health Organization (WHO):  
*"Global Status Report on Alcohol 2004"*

The full Digest is available at: <https://www.greenfacts.org/en/alcohol/>



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- Each question is answered in Level 1 with a short summary.
- These answers are developed in more detail in Level 2.
- Level 3 consists of the Source document, the internationally recognised scientific consensus report which is faithfully summarised in Level 2 and further in Level 1.

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## 1. Introduction - How many people are affected by alcohol?

About 2 billion people worldwide consume alcoholic drinks, which can have immediate and long term consequences on health and social life. Over 76 million people are currently affected by alcohol use disorders, such as alcohol dependence and abuse. Depending on the amount of alcohol consumed and the pattern of drinking, alcohol consumption can lead to drunkenness and alcohol dependence. It can result in disablement or death from accidents or contribute to depression and suicide. Moreover, it can cause chronic illnesses such as cancer and liver disease in those who drink heavily for many years.



Half a pint of beer on bar table

Alcohol causes 1.8 million deaths a year, which represents 3.2% of all deaths worldwide. Unintentional injuries account for about a third of the deaths from alcohol. Alcohol is the third most common cause of death in developed countries. In the limited number of developing countries where overall mortality is low, alcohol is the leading cause of illness and disease.

Damage to human life is often described in terms of loss of "disability-adjusted life years" (DALYs). This measure takes into account the number of years lost due to premature deaths as well as the years spent living with disability.

Worldwide, alcohol causes a loss of 58.3 million DALYs annually, which represents 4% of the total loss of DALYs from all causes. Mental disorders and diseases of the nervous system account for about 40% of DALYs lost because of alcohol.

Drinking patterns vary greatly from country to country and so do health impacts and policy responses.

For country specific information, see the Global Alcohol Database: [www.who.int/topics/alcohol\\_drinking/en/](http://www.who.int/topics/alcohol_drinking/en/) [see [http://www.who.int/topics/alcohol\\_drinking/en/](http://www.who.int/topics/alcohol_drinking/en/)]

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Introduction, p. 1-2 [see [http://www.who.int/substance\\_abuse/publications/globalstatusreportalcohol2004\\_introduction.pdf](http://www.who.int/substance_abuse/publications/globalstatusreportalcohol2004_introduction.pdf)]*

## 2. What are the general patterns of alcohol consumption?

### 2.1 How much alcohol is consumed?

Since the early 60's the average consumption of alcohol of adults<sup>1</sup> [see Annex 20, p. 28] worldwide, expressed as litres of pure alcohol from beer, wine and spirits, has ranged from 4 to 6 litres per person per year. Consumption increased from 1961 until the early 1980s and then decreased to a stable level of around 5 litres per person per year.

Alcohol consumption in Europe, Africa, and the Americas peaked around the same time, in the early 1980s. Consumption in Europe has been much higher than in any other region, ranging from about 17 litres per person per year during the peak years down to a little more than 10 litres per person per year in the late 90's.

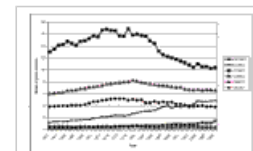


Figure 3  
[see Annex 16, p. 25] :  
Mean per capita  
consumption in WHO  
Regions 1961-1999

The Americas show the second highest level of consumption, followed by Africa and the Western Pacific regions, while the South-East Asian and Eastern Mediterranean regions show the lowest level of consumption. Alcohol consumption has increased steadily in the South-East Asian and Western Pacific regions, but is stable or falling in all other regions.

Alcohol consumption levels across the world tend to converge, except for the low-consuming Eastern Mediterranean region, where the alcohol consumption remains very low because the majority of the population is Muslim. Alcohol intake is generally increasing with increasing economic development. However, it should be noted that regional averages may hide large differences between individual countries within these regions.

*Table 3: Total recorded alcohol per capita consumption (15+) [see Annex 32, p. 38]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Global Overviews, Alcohol consumption, p.9-12 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_alcconsumpt.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_alcconsumpt.pdf)]*

## 2.2 What are the preferred beverages in different countries?

Countries can often be categorized as mainly beer, wine or spirits countries.

- Beer is preferred in some countries of Europe and Africa.
- Wine is preferred in the wine producing countries of Europe.
- Spirits are preferred in Eastern Europe, Asia and some island states.



Wine barrels

*Table 4: Top 20 countries with highest beverage specific adult per capita consumption [see Annex 33, p. 43]*

However, beverage preferences are changing. In Europe, consumption of beer is increasing and consumption of wine is decreasing. This is due to increasing imports of beverages other than those normally produced in the country. For example, in high wine producing and consuming countries, such as France, Greece, Italy, Portugal and Spain, consumption of wine is decreasing, while in non-producing countries, such as the Netherlands, the United Kingdom, Ireland and Belgium, consumption of wine is increasing.

Other fermented beverages that do not strictly fall into the usual beer, wine and spirits categories are also consumed.

Within individual countries, dramatic changes in alcohol consumption rarely occur unless there are large natural disasters or conflicts. Apparent large changes are more likely to be due to a change in the way the information is collected or to shifts between legal and illegal alcohol production

*This text is a summary of: WHO Global Status Report on Alcohol 2004*

*Global Overviews, Beverage preferences, p. 13-14 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_alcconsumpt.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_alcconsumpt.pdf)]*

## 2.3 What consumption is not reflected in national statistics?

Not all alcohol consumption is reflected in official national records or surveys. Unrecorded sources of alcohol include:

- home production (especially spirits),
- alcohol intended for industrial, technical and medical uses, and
- beverages with alcohol levels below the legal definition.

Moreover, some consumptions by nationals of one country are recorded in other countries, for instance as a result of

- travelers' imports, cross-border shopping,
- smuggling, and
- consumption by tourists abroad

This imperfect recording leads to underestimates of the actual national consumption in most countries and overestimates in some such as Luxemburg where visitors and tourists account for a sizeable proportion of total alcohol consumption. This may also explain why Luxembourg has the highest recorded alcohol consumption per person in Europe.

In contrast, there are countries, for instance in East Africa, in Eastern Europe and in the former Soviet Union, where a large share of alcohol consumption goes unrecorded.

Unrecorded alcohol consumption is estimated to be at least two-thirds of all alcohol consumption in the Indian subcontinent, about half of the consumption in Africa and about one-third in Eastern Europe and Latin America.

In Europe, the estimated unrecorded alcohol consumption varies from country to country ranging from about half a litre to several litres per person per year. Unrecorded consumption is highest in the Nordic countries, particularly Norway, Sweden and Lithuania, with estimates of unrecorded alcohol consumption ranging from 25% to 65% of total alcohol consumption.

Assessing unrecorded alcohol consumption at national or local level is important for alcohol policy studies and particularly for studying the relationship between policy, consumption and alcohol-related problems.

*Table 5: Estimated volume of unrecorded consumption [see Annex 34, p. 44]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Unrecorded alcohol consumption, p. 15-17 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_alcconsumpt.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_alcconsumpt.pdf)]*

## 2.4 What is specific to locally made beverages?

In many countries, particularly in Africa, beverages are made traditionally in villages or homes through fermentation of seeds, grains, fruits, vegetables and palm trees. They are often not high in alcohol and spoil quickly.

Home-made beverages are likely to be cheaper than factory-made "branded" beverages, thus ensuring their continuing popularity, especially among poorer population groups. In some countries, such as Namibia, home-brewed beverages are the main source of alcohol

and contribute to improving the economic livelihood of their producers which are often women.

Traditional forms of alcohol are usually not adequately controlled for quality or strength and can contain harmful substances. They can cause death, blindness or illness, from methanol, high alcohol content, or the deliberate addition of substances such as car battery acid or formalin. Such cases have been reported in Kenya, Zimbabwe, Bangladesh, India, and Somalia. In order to address these health problems, it is important for the state to gain control over informal production and distribution of alcoholic drinks.

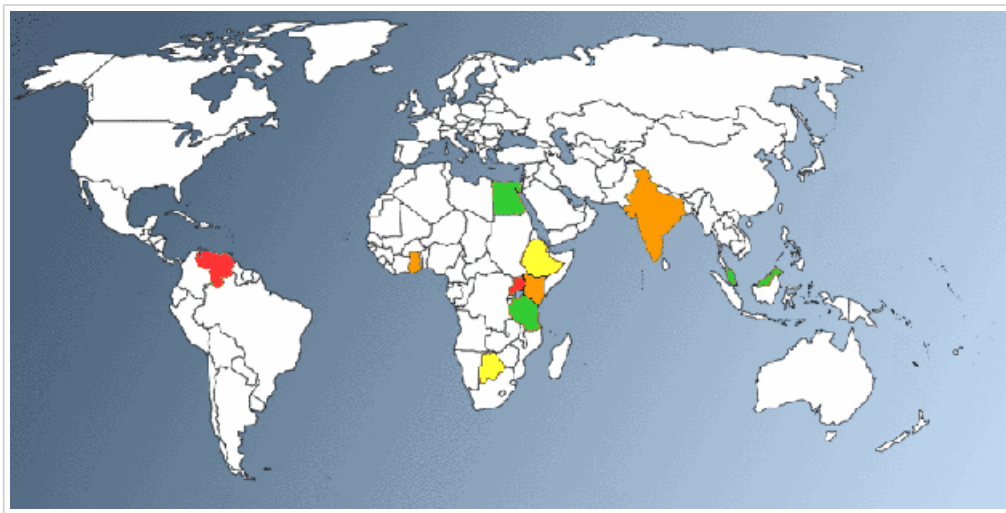


Industrially produced lager-style beer is gaining in popularity in developing countries perhaps because of advertising and prestige attached to international brands. Although industrially-produced alcohol may be healthier in terms of the purity of the product, traditionally-produced beverages may be lower in alcohol, provide local employment, and preserve local culture.

Examples of the social context in which local and traditional alcoholic beverages are produced in:

India [see Annex 3, p. 19] , Venezuela [see Annex 5, p. 20] , Malaysia [see Annex 7, p. 21] , Uganda [see Annex 9, p. 22] , Botswana [see Annex 10, p. 22] , Ethiopia [see Annex 12, p. 23] , Egypt [see Annex 13, p. 23] , Ghana [see Annex 14, p. 24] , Kenya [see Annex 15, p. 24] , Tanzania [see Annex 1, p. 19]

**Clickable world map providing access to local case examples:**



*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Traditional or local alcoholic beverages, p.18-21 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_alcconsumpt.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_alcconsumpt.pdf)]*

### 3. What are the drinking habits in various countries?

#### 3.1 How can drinking habits be measured?

Alcohol consumption in a population can be measured in two main ways: by analyzing production and sales statistics or by asking people about their drinking habits through surveys.

Production and sales statistics can provide gross figures for a population that can be broken down geographically, but such statistics only take into account official data.

In surveys, however, each respondent's drinking patterns are recorded separately and can be related to personal characteristics and behaviours. Different facets of drinking patterns can thus be surveyed for all kinds of population subgroups

Moreover, surveys can reveal:

- alcohol consumption that is not recorded in official statistics,
- alcohol-related problems at home or at work that do not show up in official statistics,
- how patterns of drinking relate to social and health problems at the level of the individual and sub-populations
- time-trends and effects of policy initiatives

Information on individual drinking patterns can highlight variability over short time periods. For example, heavy episodic drinking might not be revealed by the average number of drinks consumed per day. While long-term consequences of heavy drinking depend mainly on the overall amount of alcohol consumed, accidents and social consequences depend more on individual episodes of heavy drinking.

Some developed countries have established repeated surveys that allow trends in drinking patterns to be monitored in the population as a whole and in subgroups of the population, for example, by sex, age and income. In developing countries, research into drinking patterns is much less common.

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Global overviews, Drinking patterns p.22-24 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_drinkpatterns.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_drinkpatterns.pdf)]*

#### 3.2 Who are the abstainers?

Abstainers are defined as people who abstain from drinking alcohol, either over the year preceding the survey (last year abstainers) or throughout their life (lifetime abstainers). The figures vary considerably from country to country.

The share of "last year abstainers" in different countries ranges from 2.5% in Luxembourg to 99.5% in Egypt, and the share of "lifetime abstainers" from 9.4% in Latvia to 98.4% in the Comoros. Differences between countries and between sub-populations or regions of a country can largely be explained by the different social roles that alcohol plays. Religion can play an important role in the drinking habits of populations. Predominantly Muslim countries, for example, almost always have a higher level of abstinence. Across cultures, more women abstain from alcohol than men.

*Table 6: Rate of last year abstainers among the adult population (per country)  
[see Annex 35, p. 47]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Global overviews, Drinking patterns p.24-26 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_drinkpatterns.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_drinkpatterns.pdf)]*

### 3.3 Who are the heavy drinkers?

Heavy drinking is a pattern of drinking that exceeds certain standards that are considered moderate or socially acceptable. It can be defined in various ways, for example:

- more than a certain amount per day (e.g. more than three drinks per day),
- more than a certain quantity per occasion (e.g. five drinks on one occasion, at least once a week), or
- drinking every day.

Surveys from different countries cannot easily be compared, because definitions of heavy drinking vary and because different age groups have been surveyed.

In certain countries, heavy drinkers represent a large share of the drinking population, for instance in Colombia and Georgia, where up to about 50% of male drinkers are considered heavy drinkers. In the UK, about 40% of both female and male drinkers are considered heavy drinkers.

*Table 7: Heavy drinkers among the adult population [see Annex 36, p. 50]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Global overviews, Drinking patterns p.26-27 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_drinkpatterns.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_drinkpatterns.pdf)]*

### 3.4 Who are the heavy episodic drinkers?

The term "heavy episodic drinking", also referred to as "binge drinking", tends to be used in different ways in different surveys.

In this study, "heavy episodic drinking" refers to drinking occasions leading to intoxication, often measured as having more than a certain number of drinks on one occasion.

In some countries, such as Ireland and the Republic of Korea, "heavy episodic drinking" is common among both men and women but generally it is more frequent among men. Figures vary greatly between countries, ranging from below 1% in Chinese women to 52% in Nigerian male drinkers. But country figures are difficult to compare because of the different ways in which information is gathered.

*Table 8: Heavy episodic drinkers among the adult population (per country)  
[see Annex 37, p. 52]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Global overviews, Drinking patterns p.28-29 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_drinkpatterns.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_drinkpatterns.pdf)]*



### 3.5 Who is affected by alcohol dependence?

“Alcohol dependence” is defined internationally as:

*"a cluster of physiological, behavioural, and cognitive phenomena in which the use of alcohol takes on a much higher priority for a given individual than other behaviours that once had a greater value."*

Alcohol dependence is characterised by a strong desire or sense of compulsion to take alcohol.

Figures for alcohol dependence vary between countries but differences in the measures used to diagnose alcohol dependence make them more difficult to interpret and compare.

Alcohol dependence is consistently higher among men than among women. In some countries, alcohol dependence affects more than 10% of the whole population (men and women combined).

*Table 9: Alcohol dependence among adult population (per country) [see Annex 38, p. 54]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Global overviews, Alcohol dependence, p.29-30 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_drinkpatterns.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_drinkpatterns.pdf)]*

### 3.6 Who are the young drinkers?

Health and well-being of many young people is now seriously threatened by the use of alcohol. There appear to be increasing international trends among the young towards consuming alcoholic drinks for their pleasurable effects and thus towards binge drinking. This trend is even observed in countries such as France and Spain where such drinking patterns were formerly unusual and where the overall level of alcohol consumption is declining substantially. Getting drunk has assumed a disproportionate cultural importance amongst the young. A comparative study carried out in six EU countries showed that the frequency of drunkenness among the young is greater than that of their elders except in Italy. The emergence of alcopops – sweetened, carbonated alcoholic drinks – is also of concern since many are targeted at young people and may act as a bridge to other, stronger alcoholic drinks.

Figures for heavy episodic drinking among young people in different countries vary greatly but cannot readily be compared because age group samples and definitions of heavy episodic drinkers differ between countries, and because the information is gathered in different ways.

Yet, it appears that some countries have a very high proportion of heavy drinkers under the age of 20. For example, in Denmark, up to 62% of all boys and 54% of all girls between 11 and 15 years of age had five or more drinks in one day at least once in the month preceding the survey.

As for young adults aged 18 to 24, the percentage of young binge drinkers appears to be systematically greater for men than for women.

*Table 10: Heavy episodic drinkers among youths (per country) [see Annex 21, p. 28]*

*Table 11: Heavy episodic drinkers among young adults aged 18-24 years old  
[see Annex 22, p. 29]*

(per country)

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Global overviews, Youth drinking, p.31-34 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_drinkpatterns.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_drinkpatterns.pdf)]*

## 4. What are the health effects of alcohol consumption?

Alcohol can cause social effects and health effects (both physical and mental).

**Social effects** are for instance those that affect the behaviour of individuals, or how they interact with others. Although mainly health effects of alcohol are discussed here, it is important to note that social harm has a major impact on well-being, even if it cannot be easily quantified.

**Health effects** of alcohol have been observed in nearly every organ of the body. Indeed alcohol consumption has been linked to more than 60 diseases.

The effects of alcohol on health and well-being can manifest themselves as chronic disease, accidents and injuries, as well as short-term and long-term social consequences. Both the amount of alcohol consumed and the pattern of drinking determine whether there will be:

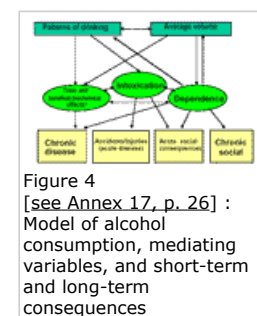
- biochemical effects on cells and organs in the body,
- intoxication, and/or
- alcohol dependence.

**Biochemical effects** of moderate consumption can be **beneficial**, such as protection against coronary heart disease, but more usually **harmful**, leading for instance to damage to the pancreas.

**Intoxication** is strongly linked to accidents, injuries, deaths, domestic conflict and violence.

**Alcohol dependence** is a powerful mechanism that sustains alcohol consumption and its short-term and long-term consequences.

Some diseases, such as alcohol dependence, are clearly fully attributable to alcohol. Others, such as cirrhosis of the liver are mainly attributable to alcohol, while others, such as breast cancer, are only partly attributable to alcohol. The extent to which alcohol contributes to a disease is expressed in "alcohol attributable fractions" (AAFs). In a similar way, it is possible to establish the AAF for road traffic accidents, based on the alcohol concentration in the driver's blood.



*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Consequences of alcohol use, Health effects and global burden of disease, p.35-57 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_healtheffects.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_healtheffects.pdf)]*

### 4.1 What diseases are due to alcohol consumption?

A number of disease conditions are **wholly attributable to alcohol**. These include alcoholic psychoses, alcohol-dependence syndrome, as well as some diseases affecting the nerves (alcoholic polyneuropathy), the heart (alcoholic cardiomyopathy), the stomach (alcoholic gastritis), and the liver (alcoholic liver cirrhosis).

Alcohol can cause a number of different **cancers**:

- The risks of developing lip, tongue, throat, oesophagus and liver cancer increases proportionally with the amount of alcohol consumed.
- Even moderate alcohol consumption can cause breast cancer, according to recent research, and a series of studies confirm that the risk increases with the amount consumed.
- Evidence of a possible link with alcohol consumption is weaker for cancers of the stomach, prostate, colon, rectum and ovaries
- There is no established relationship between alcohol consumption and cancer of the salivary glands, uterus or bladder.

Alcohol can have both a damaging role and a protective role in the development of **cardiovascular disease**. Alcohol consumption, particularly heavy drinking occasions, can contribute to high blood pressure, abnormal heart rhythms, heart failure, and strokes. At low levels of consumption (less than 40g of pure alcohol per day) without heavy drinking occasions alcohol may protect against strokes, at least in women. This is equivalent to 3 small glasses of wine or 1 litre of beer per day. Above this limit, the risks of cardiovascular disease increase dramatically.

Alcohol is the main cause of **liver cirrhosis** in developed countries. However, in China and India, for instance, liver cirrhosis is mainly caused by other factors such as viral infections. The fraction of liver cirrhosis attributable to alcohol ranges from as low as 10% in China, up to 90% in Finland. It is very difficult to determine whether an individual's cirrhosis is induced by alcohol or by other unspecified causes, and a considerable proportion of deaths from cirrhosis in which alcohol is not mentioned may in fact be attributable to alcohol. Apparently the risk of liver cirrhosis mainly depends on the volume of alcohol consumed, but possibly also on heavy drinking occasions.

Alcohol appears to contribute to causing depression. Moreover, alcohol dependence and other **mental conditions** often go hand in hand, though the role of alcohol in these conditions remains unclear.

To what extent different drinking habits can affect the risk of developing major chronic disease has been estimated for men and women.

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Harmful effects of alcohol consumption excluding depression and coronary heart disease, p.37-40 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_healtheffects.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_healtheffects.pdf)]*

## 4.2 What are the effects of alcohol on the unborn child/fetus?

The **fetus** is at risk when the mother consumes alcohol during pregnancy.

The risks include overt birth defects and a less obvious group of effects known as Fetal Alcohol Spectrum Disorders (FASD). Disorders may range from minor anomalies, for example of the face, through to adverse effects on brain development, including mental retardation.

Alcohol consumption during pregnancy can also cause spontaneous abortion, slower fetal growth in the womb, premature birth and low birth weight.



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*This text is a summary of: WHO Global Status Report on Alcohol 2004*

*Effects of prenatal alcohol exposure, p.39 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_healtheffects.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_healtheffects.pdf)]*

### 4.3 What are the health benefits of alcohol consumption?

Moderate alcohol consumption has been shown to lower some specific health risks.

Strokes occur when brain cells die because of inadequate blood flow, most commonly:

- when insufficient blood reaches a part of the brain, for example, because of a blood clot blocking an artery (ischaemic stroke) or
- when there is bleeding into the brain tissue (haemorrhagic stroke).

On the one hand, low to moderate alcohol consumption may offer some protection against ischaemic stroke. On the other hand, alcohol consumption increases the risk of haemorrhagic stroke.

Large studies on human populations show that moderate alcohol consumption may offer some protection against **diabetes**. The protective effect is probably due to the known actions of alcohol on glucose tolerance and insulin resistance, both of which are factors involved in the development of diabetes. Nevertheless, high levels of alcohol consumption may actually increase the risk.

There is also some evidence from large-scale studies that alcohol may offer some protection against the formation of **gallstones**.

*Table 13: Relative risks for beneficial alcohol-related health effects for different drinking categories (compared to abstainers) [see Annex 23, p. 30]*

Low to moderate levels of alcohol consumption can reduce the risk of coronary heart disease, one of the leading causes of death in the world. Most of the protective effect is gained by consumption of as little as one drink every other day. However, when people consume higher levels of alcohol, the risk of **coronary heart disease** is greater than when they abstain from drinking altogether. The protective effect is thought to be mainly due to changes in blood fats, especially increases in beneficial high-density lipoproteins, but also to beneficial effects on blood clotting, dilation of blood vessels, insulin resistance, hormones such as estrogen, and inflammatory processes. Most of these protective effects are attributed to alcohol itself but possibly also to other substances contained especially in wine.

Low to moderate alcohol consumption appears to be more protective when consumption is predominantly with meals, as opposed to outside meals. This may be due to the reduction in blood pressure that follows eating, a beneficial effect on clotting, slower absorption of alcohol or faster elimination of alcohol.



Meal with wine

In contrast, irregular heavy drinking occasions, such as consumption of more than 8 drinks in one sitting, have an adverse effect on coronary heart disease and are linked to sudden deaths from heart attack. This is thought to be related to the tendency for high amounts of alcohol to increase blood clotting and to impair the beating of the muscles of the heart that pumps the blood around the body. Irregular heavy drinking occasions also increase the amount of non-beneficial, low-density lipoproteins in the blood and increase the likelihood of adverse changes to the heart muscle and the nerves supplying the heart muscles. Thus, irregular heavy drinking appears to have opposite effects from low to moderate drinking.

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
CHD as a chronic condition where alcohol has harmful and beneficial consequences, p.40-43 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_healtheffects.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_healtheffects.pdf)]*

## 4.4 How are depression and alcohol consumption linked?

The relationship between alcohol and mental disorders was not well studied until recently. However, there is sufficient evidence to assume that alcohol plays a role in causing depression.

Alcohol dependence and major depression occur together, both within short time periods, such as a year, and over a lifetime. The higher the amount consumed, the greater the number of symptoms of depression. Compared to the general population, depression is seen more frequently in patients being treated for alcohol abuse or dependence. Similarly, a higher frequency of alcohol-related disorders is seen in patients being treated for depression.



Individuals often suffer from alcohol problems in combination with depression

In individual cases, it is often not clear if alcohol caused depression, if depression caused alcohol problems, or if both might have been caused by a third factor. Yet, many countries show a certain proportion of cases of depression in which excessive alcohol use precedes the depression, which suggests alcohol may be the cause. Moreover, depression symptoms tend to decrease or disappear during alcohol abstinence, confirming that alcohol may be the cause.

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Consequences of alcohol use, Health effects and global burden of disease, Depression, p.43-45 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_healtheffects.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_healtheffects.pdf)]*

## 4.5 In what ways can alcohol consumption lead to physical injuries?

Alcohol goes along with increased risk of physical injury from road accidents, falls, fires, sports and recreation, self-inflicted injuries and violence. The presence of alcohol in the body may also aggravate injuries.

Alcohol causes unintentional injuries, mainly through traffic accidents, because it affects reaction times, thought processing, coordination and vigilance. A large review has shown that tasks involving coordination between the brain and muscular action start to be affected above a blood alcohol level of 40 to 50 mg% (0.04%-0.05%).

The risk of unintentional injury increases with the level of alcohol consumption, even at relatively low levels. The risk of injury is greatest when individuals consume much more than they normally do. In summary, the amount of alcohol consumed, and more specifically the actual blood alcohol content, determines the likelihood of unintentional injury.

Alcohol consumption is also strongly associated with intentional injuries caused by aggressive behaviour leading to violent crime. Drinking frequently precedes violent incidents and the severity of the violence is related to the amount of drinking beforehand.

Different effects of alcohol contribute to increased likelihood of aggressive behaviour. Effects of alcohol on the brain can reduce the anxiety about the consequences of one's actions. They also impair thinking and problem solving ability in situations of conflict and result in

overly emotional responses. Other effects of alcohol on behaviour include a resolute focus on the present (alcohol myopia) and a need to affirm personal power, at least for men.

*Table 15: Attributable fractions of acute alcohol-related health effects in the adult general population [see Annex 24, p. 31]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Consequences of alcohol use, Health effects and global burden of disease, Depression, p.46-48 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_healtheffects.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_healtheffects.pdf)]*

## 4.6 What is the overall health burden of alcohol consumption?

In terms of lives lost, the benefits of alcohol consumption may outweigh its detrimental effects in some countries. Indeed, the number of deaths “prevented” by alcohol in some age groups may be greater than the deaths caused by alcohol. This is mainly due to the beneficial effect of low and moderate alcohol consumption on diseases of the heart and blood vessels. It applies mainly to developed countries with high life expectancy where moderate amounts of alcohol are regularly taken with meals.

However, in terms of life years lost, a different picture emerges. Indeed, fewer years are gained by preventing heart disease in the elderly than are lost because of premature death at an early age, say from traffic accidents.

The global health burden of alcohol consumption is even more negative when it takes into account years spent living in disability. In terms of “disability adjusted life years” (DALYs) lost, 4% of all years lost in 2000 are attributed to alcohol consumption, compared to only 3.5% in 1990.

There are regional differences in the relative importance of the overall disease burden from alcohol, because of different patterns of consumption and risk factors other than alcohol.

- The disease burden is highest in developed countries (9.2% in 2000), where it is only exceeded by the burden attributable to tobacco and high blood pressure.
- It is lower in developing countries with relatively low adult and infant mortality, where it is the main contributor to disease burden (6.2%),
- It is lowest in developing countries with high mortality rates (1.6% in 2000), where undernutrition, unsafe sex, and unsafe water, sanitation and hygiene are more important risk factors.

Globally, the burden of alcohol-attributable diseases is greater among men than among women.

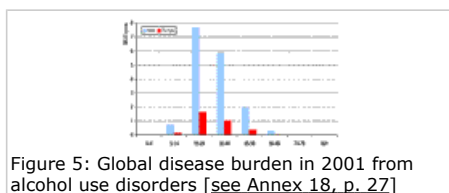


Figure 5: Global disease burden in 2001 from alcohol use disorders [see Annex 18, p. 27]

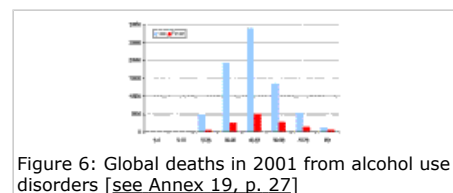


Figure 6: Global deaths in 2001 from alcohol use disorders [see Annex 19, p. 27]

*Table 16: Global burden of disease in 2000 attributable to alcohol [see Annex 25, p. 31] according to major disease categories*

*Table 17: Burden of disease in 2000 attributable to tobacco, alcohol and drugs [see Annex 26, p. 32] by developing status and sex*

*Table 18: Characteristics of adult alcohol consumption in different regions of the world [see Annex 27, p. 33]*

*Table 19: Alcohol-related harm in different regions of the world [see Annex 28, p. 34]*

*Table 20: Selected population alcohol-attributable fractions [see Annex 29, p. 35] by disease category, sex and level of development*

*Table 21: Mortality rates for acute and chronic disease and injury [see Annex 31, p. 37] by WHO regional subgroupings*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Consequences of alcohol use, Health effects and global burden of disease, Depression, p.50-58 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_healtheffects.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_healtheffects.pdf)]*

## 5. What social and economic problems are linked to alcohol use?

Alcohol consumption can have adverse social and economic effects on the individual drinker, the drinker's immediate environment and society as a whole. Indeed, individuals other than the drinker can be affected, for example, by traffic accidents or violence. It has an impact on society as a whole in terms of resources required for criminal justice, health care and other social institutions.

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Social problems associated with alcohol use. P.59 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_healtheffects.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_healtheffects.pdf)]*

### 5.1 How can work performance be affected by alcohol consumption?

Alcohol consumption can affect work performance in several ways:

- **Absences** - There is ample evidence that people with alcohol dependence and drinking problems are on sick leave more frequently than other employees, with a significant cost to employees, employers, and social security systems. In Costa Rica, an estimated 30% of absenteeism may be due to alcohol. In Australia, a survey showed that workers with drinking problems are nearly 3 times more likely than others to have injury-related absences from work.
- **Work accidents** - In Great Britain, up to 25% of workplace accidents and around 60% of fatal accidents at work may be linked to alcohol. In India about 40% of work accidents have been attributed to alcohol use.
- **Productivity** - Heavy drinking at work may reduce productivity. In Latvia, 10% of productivity losses are attributed to alcohol. Performance at work may be affected both by the volume and pattern of drinking. Co-workers perceive that heavy drinkers have lower performance, problems in personal relationships and lack of self-direction, though drinkers themselves do not necessarily perceive effects on their work performance
- **Unemployment**- Heavy drinking or alcohol abuse may lead to unemployment and unemployment may lead to increased drinking.

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Social Problems associated with alcohol use, Alcohol consumption and the workplace, p.59-60 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_socproblems.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_socproblems.pdf)]*

## 5.2 How can the family be affected by alcohol consumption?

Drinking can impair how a person performs as a parent, a partner as well as how (s)he contributes to the functioning of the household. It can have lasting effects on their partner and children, for instance through home accidents and violence.

Children can suffer Fetal Alcohol Spectrum Disorders (FASD), when mothers drink during pregnancy. After birth, parental drinking can lead to child abuse and numerous other impacts on the child's social, psychological and economic environment.

The impact of drinking on family life can include substantial mental health problems for other family members, such as anxiety, fear and depression.

Drinking outside the home can mean less time spent at home. The financial costs of alcohol purchase and medical treatment, as well as lost wages can leave other family members destitute. When men drink it often primarily affects their mothers or partners who may need to contribute more to the income of the household and who run an increased risk of violence or HIV infection.

*Case example 1: Botswana – debt and child neglect [see Annex 2, p. 19]*

*Case example 2: Nepal – impacts perceived by family members [see Annex 4, p. 20]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Social Problems associated with alcohol use, Alcohol consumption and the family, p.60-62 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_socproblems.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_socproblems.pdf)]*

## 5.3 What is the link between alcohol and poverty?

The economic consequences of alcohol consumption can be severe, particularly for the poor.

Apart from money spent on drinks, heavy drinkers may suffer other economic problems such as lower wages and lost employment opportunities, increased medical and legal expenses, and decreased eligibility for loans. A survey in Sri Lanka indicated that for 7% of men, the amount spent on alcohol exceeded their income.

*Case example 3: Cameroon – cost of one beer represents a large share of daily wage  
[see Annex 6, p. 21]*

*Case example 4: India – families affected by debt, illnesses, or injuries [see Annex 8, p. 21]*

*Case example 5: Malaysia – exacerbation of poverty and burden on women  
[see Annex 11, p. 23]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Social Problems associated with alcohol use, Alcohol and poverty, p.62-63 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_socproblems.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_socproblems.pdf)]*

## 5.4 What is the link between alcohol and violence between partners?

Alcohol plays a role in a substantial number of domestic violence incidents, especially in the case of abusing husbands. Often both the offender and the victim have been drinking.



The relationship between alcohol and domestic violence is complex and the precise role of alcohol remains unclear. Heavy drinking has been strongly linked to violence between partners and to a lesser extent to violence towards others, possibly because proximity increases the opportunities for violence.

Studies conducted for instance in Nigeria, South Africa, Uganda, India, and Colombia show that a large fraction of reported domestic violence incidents is related to alcohol use by the male partner. For instance, in Uganda, 52% of the women who recently experienced domestic violence reported that their partner had consumed alcohol, and in India, 33% of abusing husbands were using alcohol. There is a need to better understand the possible role of alcohol intoxication or dependence in the processes through which incidents escalate into violence.

There is little doubt that alcohol consumption has many social consequences, but more quantifiable data is needed to enable meaningful comparisons between countries.

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Social Problems associated with alcohol use, Alcohol and domestic violence, p.63-64 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_socproblems.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_socproblems.pdf)]*

## 5.5 What are the estimated economic and social costs?

Strong efforts are made in many countries to estimate the overall economic and social costs of alcohol use.

**Social and economic costs** cover the negative economic impacts of alcohol consumption on the material welfare of the society as a whole. They comprise both direct costs - the value of goods and services delivered to address the harmful effects of alcohol, and indirect costs - the value of personal productive services that are not delivered as a consequence of drinking.

In industrialized countries, estimates of social and economic costs of alcohol use can reach several percent of the Gross Domestic Product (GDP), ranging for instance from 1.1% in Canada to 5-6% in the case of Italy.

Estimates of social and economic costs can help:

- make the case for public policies on alcohol,
- target policies and public expenditure on the most important problems (e.g. the costs of alcohol versus other psychoactive drugs such as tobacco),
- identify information gaps,
- assess the effectiveness of policies and programmes against alcohol abuse.



Alcohol abuse can cause social and economic problems

Estimating the costs of the impact of alcohol on the material welfare of society is often difficult and requires estimates of the social costs of treatment, prevention, research, law enforcement, lost productivity and some measure of years and quality of life lost.

*Table 21 [bis]: Social and economic costs of alcohol abuse for selected countries  
[see Annex 30, p. 36]*

*This text is a summary of: WHO Global Status Report on Alcohol 2004  
Economic and social costs of alcohol use, p.65-66 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_economic.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_economic.pdf)]*

## 6. Conclusion

Alcohol is not an ordinary commodity. While it carries connotations of pleasure and sociability in the minds of many, harmful consequences of its use are diverse and widespread

From a global perspective, in order to reduce the harm caused by alcohol, policies need to take into account specific situations in different societies. Average volumes consumed and patterns of drinking are two dimensions of alcohol consumption that need to be considered in efforts to reduce the burden of alcohol-related problems. Avoiding the combination of drinking and driving is an example of measures that can reduce the health burden of alcohol.

Worldwide, alcohol takes an enormous toll on lives and communities, especially in developing countries and its contribution to the overall burden of disease is expected to increase in the future. Particularly worrying trends are the increases in the average amount of alcohol consumed per person in countries such as China and India and the more harmful and risky drinking patterns among young people.

National monitoring systems need to be developed to keep track of alcohol consumption and its consequences, and to raise awareness amongst the public and policy-makers. It is up to both governments and concerned citizens to encourage debate and formulate effective public health policies that minimize the harm caused by alcohol.

*This text is a summary of: WHO Global Status Report on Alcohol 2004*

*Conclusion, p.67 [see [http://www.who.int/entity/substance\\_abuse/publications/globalstatusreportalcohol2004\\_conclusion.pdf](http://www.who.int/entity/substance_abuse/publications/globalstatusreportalcohol2004_conclusion.pdf)]*

## Annex

### Annex 1:

#### Case example 10: United Republic of Tanzania

"A study that collected and analysed 15 homemade but commercially available alcoholic beverages in Dar es Salaam found that ethanol concentrations of the brewed samples ranged from 2.2 to 8.5% w/v whilst the two distilled samples contained 24.2% and 29.3% ethanol w/v. Aflatoxin B1 was found in nine brewed beverages, suggesting the use of contaminated grains or fruit for their production. The amount of zinc in four samples was double the World Health Organization recommended maximum for drinking water (5 mg/litre). One brewed beverage contained toxic amounts of manganese (12.8 mg/litre). Both distilled spirits were rich in fusel alcohols and one was fortified by caffeine. The results suggested that impurities and contaminants possibly associated with severe health risks, including carcinogens, are often found in traditional alcoholic beverages. Continuous daily drinking of these beverages is certain to increase health risks.

Source: Nikander et al. (1991)"

*Source & © WHO Global Status Report on Alcohol 2004, p.21 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

### Annex 2:

#### Case example 1: Botswana

"The economic consequences of chronic alcohol use are devastating and can seriously hinder any sense of development. In a study of alcohol use among the Basarwa of the Kgalagadi and Ghanzi districts in Botswana, informants stated that since a significant proportion of household income was spent on liquor, less cash was available for food, clothing and other essential items. As one informant succinctly stated 'alcohol makes poor people poorer'. A person who is regularly under the influence of alcohol will have little motivation or interest in working, unless it is to obtain money to buy more alcohol. One particular problem is that a regular drinker can easily become economically tied and indebted to alcohol vendors who are only too pleased to provide alcohol'on credit'.

Child neglect is an increasing problem when parents are intoxicated so early in the day that they are not able to prepare food for their children, even if there is food available. A concern is that some parents will sell food to buy alcohol while others will give alcohol to their children as a food substitute and to stave off hunger. Generally, the neglect of young children due to alcohol abuse means that these children are under-socialized as well as malnourished, leading to a refusal to attend school, begging and stealing for food, and other delinquent activities.

Source: Molamu & MacDonald (1996)"

*Source & © WHO Global Status Report on Alcohol 2004, p.61 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

### Annex 3:

## Case example 1: India

"Country liquor is a distilled alcoholic beverage made from locally available cheap raw material such as sugar- cane, rice, palm, coconut and cheap grains, with an alcohol content between 25% and 45%. Common varieties of country liquor are arrack (from paddy or wheat), desi sharab and tari. Illicit liquor is mostly produced clandestinely in small production units with raw materials similar to that used for country liquor. With no legal quality control checks on them, alcohol concentration of illicit liquor varies (up to 56%). Adulteration is quite frequent, industrial methylated spirit being a common adulterant, which occasionally causes incidents like mass poisoning with consumers losing their lives or suffering irreversible damage to the eyes. Cheaper than licensed country liquor, illicit liquor is popular among the poorer sections of the population. In many parts of India, illicit production of liquor and its marketing is a cottage industry with each village having one or two units operating illegally.

Source: Mohan et al. (2001)"

*Source & © WHO Global Status Report on Alcohol 2004, p.19 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 4:

### Case example 2: Nepal

"In a large-scale study covering about 2400 households in 16 of Nepal's 70 districts, the adult respondents perceived the impact of family members use of alcohol and drugs on children as violence and physical abuse (33.4%), neglect and mental abuse (28.5%), deprivation from education (20.2%) and push factor for children to use intoxicants (11.1%), malnutrition and running away from home. 35.9% of children interviewed felt that there was an impact of parental drinking on the family. The impact included domestic violence (40%), loss of wealth and indebtedness (27.8%), loss of social prestige and bad relationship with neighbours.

Source: Dhital et al. (2001)"

*Source & © WHO Global Status Report on Alcohol 2004, p.62 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 5:

### Case example 2: Venezuela

"Corn liquor is consumed by an indigenous tribe in Venezuela. Several times each year, especially during the corn harvest season, the trunk of a large tree would be hollowed out and filled with corn mash by an individual specially chosen by the community. The corn mash would be allowed to ferment to create an alcoholic beverage with a high enough alcohol content to cause intoxication after consumption of only two glasses or gourdfuls. When the corn liquor is ready, a village festival would be held in which all adults would drink to the point of falling down. Men would typically bring their bows and arrows and fight to settle grudges. Festivals would end after two or three days, when the corn liquor ran out. There were rarely individuals who consumed alcoholic beverages at times other than festival celebrations.

Source: Seale et al. (2002)”

*Source & © WHO Global Status Report on Alcohol 2004, p.19 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## **Annex 6:**

### **Case example 3: Cameroon**

“What is problematic in Cameroon is the high cost of purchasing even one beer a week given the income of an average rural family. When comparing the price of two major beers sold in a rural village in 1983 as a percentage of male and female wages, it was found that the cost of one beer represented 60–84% of women’s and 36–50% of men’s daily wages. Drinking even in these small amounts means that one day’s wages is quickly consumed. The danger is when individuals start forsaking paying children’s school fees because their money is spent on beer. Such individuals are considered disruptive of community life because their negligence impedes others from doing their work or meeting obligations towards friends, association members and kin.

Source: Diduk (1993)”

*Source & © WHO Global Status Report on Alcohol 2004, p.62 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## **Annex 7:**

### **Case example 3: Malaysia**

“In the East Malaysian states of Sabah and Sarawak on the island of Borneo, indigenous people traditionally drink a homemade rice wine called tuak or tapai in conjunction with harvest celebrations and social or communal gatherings. This rice wine is reportedly very potent. At such important functions, especially the harvest festival, which is of much significance for these agrarian folk, almost all are required to drink. Refusal by guests to partake of these drinks is a breach of etiquette. Such drinking is an integral part of the culture of these tribes.

Source: Arokiasamy (1995)”

*Source & © WHO Global Status Report on Alcohol 2004, p.20 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## **Annex 8:**

## Case example 4: India

“In a 1997 study comparing two groups of families within the same community in Delhi, India (Group A having at least one adult consuming alcoholic drinks at least three times per week in the last month and Group B having no adult consuming more than one drink in the last month), it was found that Group A, on an average, spent almost 14 times more on alcohol per month compared with Group B. A larger proportion of families in Group A had significant debt compared with Group B. The implications of this are towards fewer financial resources for food and education of children and fewer resources for purchasing daily living consumables. The more heavily drinking Group A was more likely to report major illnesses or injuries during the past one year and was more likely to require medical treatment.

Source: Saxena, Sharma & Maulik (2003)”

*Source & © WHO Global Status Report on Alcohol 2004, p.62 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 9:

### Case example 4: Uganda

“Tonto is a traditional brew produced from juice obtained from special varieties of bananas. The common local banana varieties used in making tonto are kisubi, ndizi, musa, kivuru, kabula and mbidde. Another common name used for the brew in central Uganda is mwenge bigere. It is mostly consumed in central and western Uganda, where banana growing is a major agricultural activity, and in urban areas all around the country at social gatherings and in bars. In various parts of the country, it is a source of income for many families. The production of tonto is as follows: Green bananas are ripened for 3–5 days in a covered, previously warmed, pit lined with banana leaves to ensure uniform temperature. The juice is extracted from the ripe banana by squeezing, by a group of men using their feet after mixing with spear grass. The juice is then filtered through grass held in a calabash funnel and diluted with water in known ratios. Roasted and ground sorghum is added to the diluted banana juice in a canoe-shaped wood container. The fermentation broth is then covered with banana leaves and split banana stems in a warmed pit and incubated for 2–4 days. The alcohol content in tonto ranges between 6 and 11% v/v and is consumed from small gourds using straws.

Source: Mwesigye & Okurut (1995)”

*Source & © WHO Global Status Report on Alcohol 2004, p.20 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 10:

## Case example 5: Botswana

“Bojalwa (sorghum beer) and khadi are both home-brewed beer-like drinks that vary greatly in terms of taste, consistency and alcohol content depending on availability of ingredients and methods of fermentation. Indeed khadi could almost be described as a ‘designer alcohol’ often brewed to the consumer’s needs and tastes. It is made from a base or ‘mash’ that can consist of a combination of any of the following ingredients: wild berries, wild pumpkins, wild roots, oranges, sorghum and maize. Yeast, black tobacco or other unspecified substances are sometimes added to this base to give it ‘strength’, and there have been rumours around Ghanzi of car battery acid also being added.

Source: Molamu & Macdonald (1996)”

*Source & © WHO Global Status Report on Alcohol 2004, p.20 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 11:

### Case example 5: Malaysia

“Alcohol is a major factor in exacerbating poverty. In a month a rural labourer can spend about RM 300 (US\$ 80) on alcohol which is about how much he earns. The alcohol menace ruins families and contributes to the breakdown of the basic social fabric of society. Often it is the women who bear the brunt of this problem – wife battery, discord in the home, abused and deprived children, non-working or chronically ill husbands who become a burden to both the family and society. Besides loss in family income, the burden on the family is worsened when the drinker falls ill, cannot work and requires medical attention.

Source: Assunta (2001–2002)”

*Source & © WHO Global Status Report on Alcohol 2004, p.63 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 12:

### Case example 6: Ethiopia

“Talla is an Ethiopian home-brewed beer which differs from the others in some respects. First it is brewed with barley or wheat, hops, or spices. Secondly, it has a smoky flavour due to the addition of bread darkened by baking and use of a fermentation vessel which has been smoked by inversion over smoldering wood. Talla is not processed under government regulations hence the alcohol content varies but is usually around 2% to 4%. Filtered tella has a higher alcohol content ranging from 5% to 6%.

Source: Selinus (2004)”

*Source & © WHO Global Status Report on Alcohol 2004, p.20 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 13:

## Case example 7: Egypt

“Bouza (traditional beer) is a fermented alcoholic beverage produced from wheat in Egypt, and has been known by the Egyptians since the days of the Pharaohs. It is a thick, pasty yellow beverage and produces a sensation of heat when consumed. Like other opaque beers, bouza has a very short shelf life and is expected to be consumed within a day. It has an alcoholic content of between 3.8% and 4.2%.

Source: Haard (1999)”

*Source & © WHO Global Status Report on Alcohol 2004, p.21 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 14:

### Case example 8: Ghana

“Pito (local brew made from millet) is widely consumed in Ghana. The brewing of pito is traditionally associated with the people in the northern part of the country, but migration has led to its production throughout the country. The industry is mostly controlled by women between the ages of 18 and 67 years old. Pito is golden yellow to dark brown in colour with taste varying from slightly sweet to very sour. It contains lactic acid, sugars, amino acids, 2% to 3% alcohol and some vitamins and proteins. There are four types of pito in Ghana – nandom, kokmba, togo and dagarti. The peculiar characteristics of each lies in the differences in their wort extraction and fermentation methods.

Source: Akyeampong (1995); Sefa-Dedeh (1999)”

*Source & © WHO Global Status Report on Alcohol 2004, p.21 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 15:

### Case example 9: Kenya

“Muratina is an alcoholic drink made from sugar-cane and muratina fruit in Kenya. The fruit is cut in half, sun-dried and boiled in water. The water is removed and the fruit sun-dried again. The fruit is added to a small amount of sugar-cane juice and incubated in a warm place. The fruit is removed from the juice after 24 hours and sun-dried. The fruit is now added to a barrel of sugar-cane juice which is allowed to ferment for between one and four days. The final product has a sour alcoholic taste.

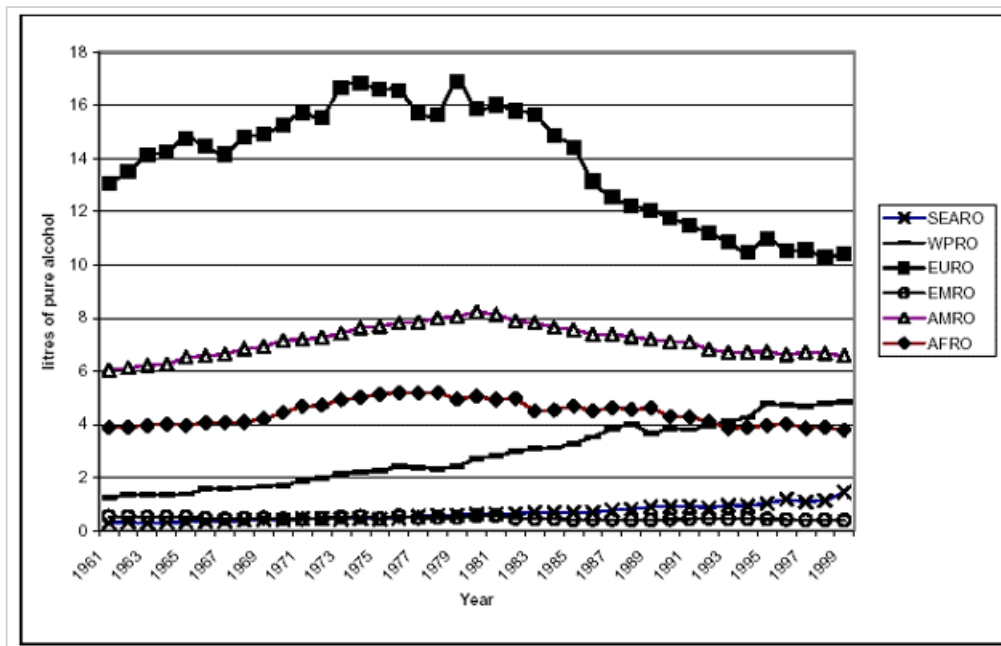
Source: The Schumacher Centre for Technology & Development (2004)”

*Source & © WHO Global Status Report on Alcohol 2004, p.21 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*



**Annex 16:**

**Figure 3: Population weighted means of the recorded adult per capita consumption in the WHO Regions 1961-1999**



[Note: All WHO member states are classified into the following geographical regions:

AFRO - African Region

EMRO - Eastern Mediterranean Region

EURO - European Region

AMRO - Region of the Americas

SEARO - South-East Asian Region

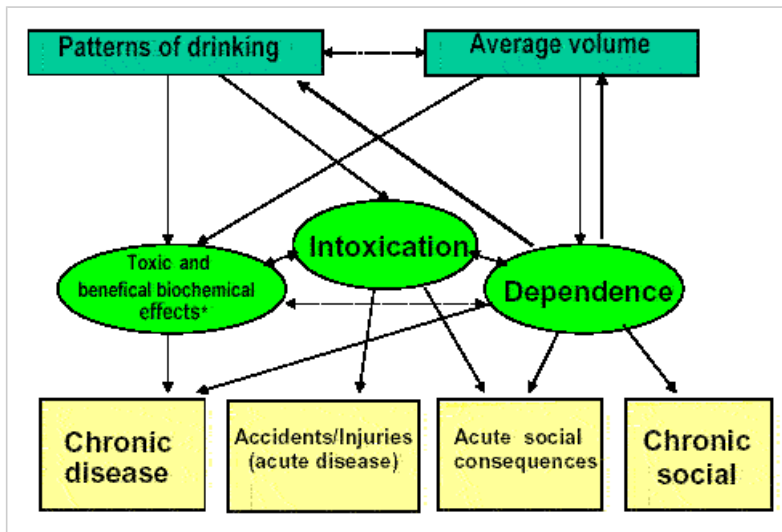
WPRO - Western Pacific Region

For more information on the different regions, see [www.who.int/choice/demography/regions/en/index.html](http://www.who.int/choice/demography/regions/en/index.html) [see <http://www.who.int/choice/demography/regions/en/index.html>]]

Source: WHO Global Status Report on Alcohol 2004, p.9 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 17:**

**Figure 4: Model of alcohol consumption, mediating variables, and short-term and longterm consequences**



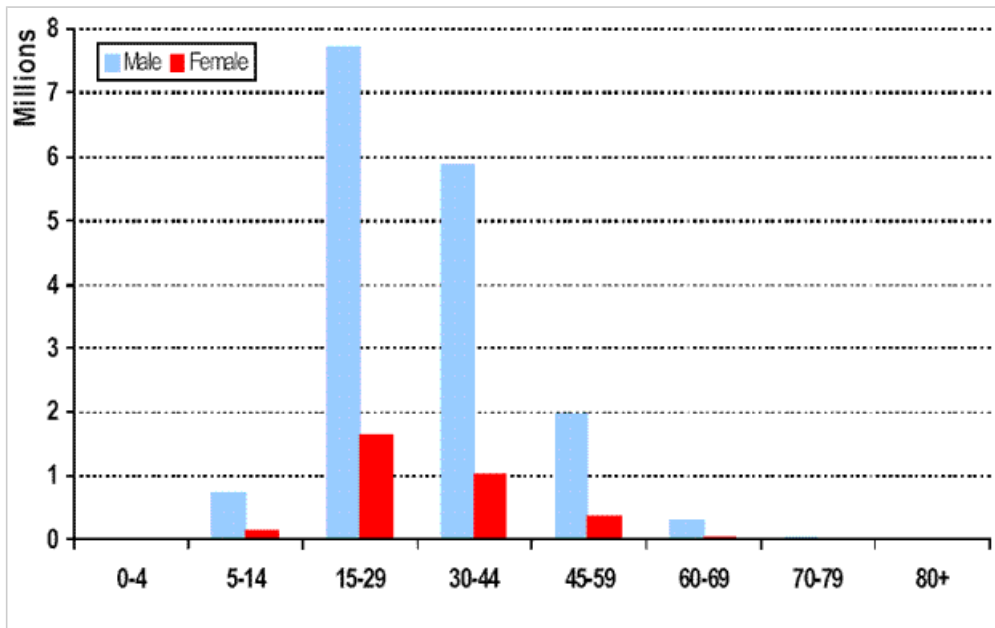
\* Independent of intoxication or dependence

Source: Rehm et al. (2003c)

Source: WHO Global Status Report on Alcohol 2004, p.35 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 18:**

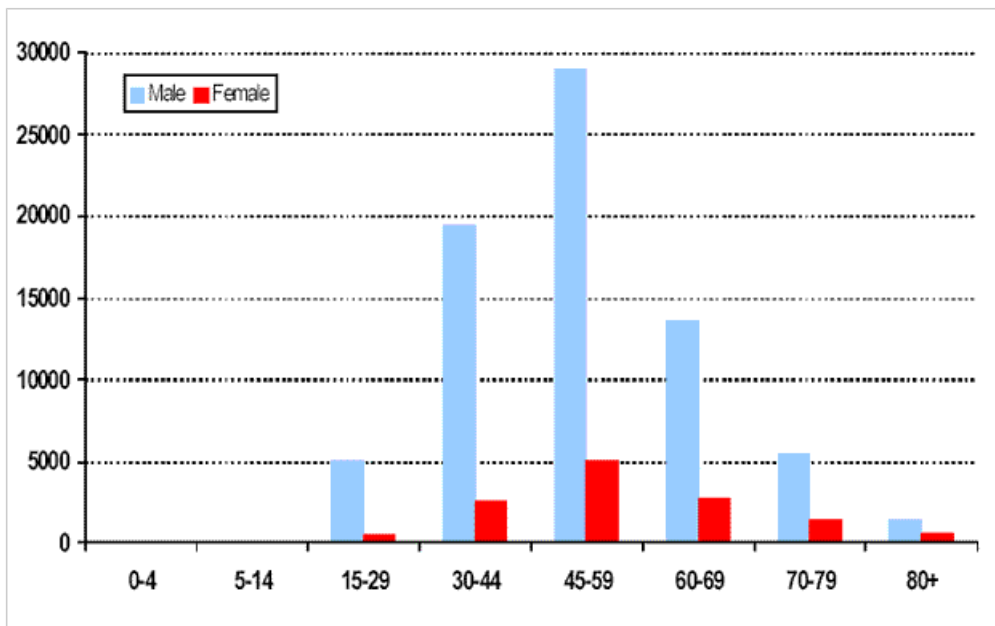
**Figure 5: Global disease burden (in DALYs) in 2001 from alcohol use disorders, by age group and sex**



Source: WHO Global Status Report on Alcohol 2004, p.49 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 19:**

**Figure 6: Global deaths in 2001 from alcohol use disorders, by age group and sex**



Source: WHO Global Status Report on Alcohol 2004, p.50 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

## Annex 20: Footnote on the meaning of "adults"

The WHO source document generally uses "adults" to refer to people 15 years and older.

## Annex 21: Table 10: Heavy episodic drinkers among youths

Country	Year	Total (%)	Male (%)	Female (%)	Age group
Australia <sup>a</sup>	2001	10.7	9.6	11.8	14-19
Bulgaria <sup>b</sup>	1999	11.0	15.0	6.0	15-16
Canada <sup>c</sup>	2000-2001	15.3	26.3	5.2	15-19
China <sup>d</sup>	2000-2001	1.3	2.5	0.0	15-19
Colombia <sup>c</sup>	2000-2001	7.8	14.5	4.1	15-19
Cyprus <sup>b</sup>	1999	12.0	18.0	6.0	15-16
Denmark <sup>e</sup>	2002		62.0	54.0	11-15
Finland <sup>b</sup>	1999	18.0	21.0	15.0	15-16
France <sup>b</sup>	1999	12.0	16.0	7.0	15-16
Georgia <sup>d</sup>	2000-2001	2.7	4.4	1.3	15-19
Greece <sup>b</sup>	1999	9.0	13.0	5.0	15-16
Hungary <sup>f</sup>	2003	27.5	39.2	22.2	15-16
Iceland <sup>b</sup>	1999	17.0	18.0	15.0	15-16
Ireland <sup>b</sup>	1999	31.0	32.0	32.0	15-16
<b>India</b> <sup>d</sup>	2000-2001	0.5	1.2	0.0	15-19
Indonesia <sup>d</sup>	2000-2001	1.1	1.1	1.1	15-19
Lithuania <sup>b</sup>	1999	9.0	12.0	18.0	15-16
Malta <sup>b</sup>	1999	22.0	25.0	23.0	15-16
Mexico <sup>d</sup>	2000-2001	2.5	0.8	1.5	15-19
<b>Nigeria</b> <sup>d</sup>	2000-2001	1.2	1.0	1.3	15-19
Norway <sup>b</sup>	2003	15.0	17.0	14.0	15-16
Poland <sup>b</sup>	1999	31.0	41.0	23.0	15-16
Sweden <sup>b</sup>	1999	17.0	22.0	13.0	15-16
Syrian Arab Republic (the) <sup>d</sup>	2000-2001	0.4	0.0	0.2	15-19
Turkey <sup>d</sup>	2000-2001	1.4	0.5	1.1	15-19
The United Kingdom <sup>b</sup>	1999	30.0	33.0	27.0	15-16
United States of America (the) <sup>f</sup>	2002	10.7	11.4	9.9	12-17

<sup>a</sup> Consumption of seven or more standard drinks on any one drinking occasion for males and five or more standard drinks on any one drinking occasion for females (at least weekly).

<sup>b</sup> Consumption of five or more drinks in a row three times or more in the last 30 days.

<sup>c</sup> Consumption of five or more drinks on one occasion, twelve or more times in the last year (among drinkers only).

<sup>d</sup> At least once a week consumption of six or more standard drinks in one sitting.

<sup>e</sup> Consumption of five or more standard drinks in one day at least once in the last month.

<sup>f</sup> Consumption of five or more drinks on one occasion at least once in the past month.

**Note:** Countries in bold indicate that surveys were not national. Please refer to individual country profiles for details of references/sources used.

Source: WHO Global Status Report on Alcohol 2004, p.33 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

## Annex 22:

### Table 11: Heavy episodic drinkers among young adults aged 18-24 years old

Country	Year	Total (%)	Male (%)	Female (%)
Bosnia and Herzegovina <sup>a</sup>	2003	0.8	1.8	0.0
Brazil <sup>a</sup>	2003	15.3	26.3	5.2
Burkina Faso <sup>a</sup>	2003	6.4	8.4	5.1
Chad <sup>a</sup>	2003	9.3	13.7	5.6
<b>China</b> <sup>b</sup>	2000-2001	2.1	3.9	0.3
Colombia <sup>b</sup>	2000-2001	7.8	14.5	4.1
Comoros <sup>a</sup>	2003	0.3	0.6	0.0
Congo (the) <sup>a</sup>	2003	3.9	6.4	2.2
Côte d'Ivoire <sup>a</sup>	2003	3.9	6.9	0.3
Croatia <sup>a</sup>	2003	4.6	9.6	0.0
Czech Republic (the)	2003	20.1	32.7	9.0
Dominican Republic <sup>a</sup>	2003	12.0	17.9	7.4
Ecuador <sup>a</sup>	2003	5.1	11.2	0.5
Estonia <sup>a</sup>	2003	6.0	10.4	3.5
Ethiopia <sup>a</sup>	2003	2.0	4.2	0.2
Georgia <sup>a</sup>	2003	10.1	19.6	2.1
Ghana <sup>a</sup>	2003	0.6	1.0	0.3
Guatemala <sup>a</sup>	2003	1.7	4.8	0.0
Hungary <sup>a</sup>	2003	12.2	20.8	3.5
<b>India</b> <sup>b</sup>	2000-2001	0.7	1.6	0.0
Indonesia <sup>b</sup>	2000-2001	0.8	1.3	0.3
Kazakhstan <sup>a</sup>	2003	3.1	6.8	1.1
Lao People's Democratic Republic (the) <sup>a</sup>	2003	11.5	19.2	5.3
Latvia <sup>a</sup>	2003	14.4	27.3	4.3
Lebanon <sup>b</sup>	2000-2001	0.2	0.4	0.0
Malawi <sup>a</sup>	2003	1.9	4.5	0.2
Malaysia <sup>a</sup>	2003	0.2	0.5	0.0
Mali <sup>a</sup>	2003	0.3	0.6	0.0
Mauritius <sup>a</sup>	2003	2.8	5.2	0.0
Mexico <sup>a</sup>	2003	3.1	6.3	0.8
Morocco <sup>a</sup>	2003	0.6	1.2	0.2
Namibia <sup>a</sup>	2003	5.4	10.6	2.0
Nepal <sup>a</sup>	2003	0.6	1.3	0.2
<b>Nigeria</b> <sup>b</sup>	2000-2001	1.0	1.7	0.6
Paraguay <sup>a</sup>	2003	16.1	29.2	4.4
Philippines (the) <sup>a</sup>	2003	7.3	13.6	0.9
Russian Federation (the) <sup>a</sup>	2003	5.7	6.9	4.6
Slovakia <sup>a</sup>	2003	17.8	28.4	9.0
Spain <sup>a</sup>	2003	8.6	15.1	3.2
Sri Lanka <sup>a</sup>	2003	0.8	1.5	0.0

<sup>a</sup> At least once a week consumption of five or more standard drinks in one sitting.  
<sup>b</sup> At least once a week consumption of six or more drinks in one sitting.  
**Note:** Countries in bold indicate that surveys were not national. Please refer to individual country profiles for details of references/sources used.

Country	Year	Total (%)	Male (%)	Female (%)
Tunisia <sup>a</sup>	2003	3.3	6.3	0.0
Turkey <sup>a</sup>	2003	0.8	2.1	0.0
Ukraine <sup>a</sup>	2003	8.5	13.4	4.9
Uruguay <sup>a</sup>	2003	8.4	13.5	2.8
Viet Nam <sup>a</sup>	2003	3.7	8.1	0.0
Zimbabwe <sup>a</sup>	2003	2.8	6.6	0.3

<sup>a</sup> At least once a week consumption of five or more standard drinks in one sitting.  
<sup>b</sup> At least once a week consumption of six or more drinks in one sitting.  
**Note:** Countries in bold indicate that surveys were not national. Please refer to individual country profiles for details of references/sources used.

Source: WHO Global Status Report on Alcohol 2004, p.34 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

## Annex 23:

**Table 13: Relative risks for beneficial alcohol-related health effects for different drinking categories (compared to abstainers)**

Disease	ICD-9	RR					
		Drinking category I		Drinking category II		Drinking category III	
		F	M	F	M	F	M
Diabetes	250	0.92	0.99	0.87	0.57	1.13	0.73
Ischaemic stroke	433-435	0.52	0.94	0.64	1.33	1.06	1.65
Cholelithiasis	574	0.82	0.82	0.68	0.68	0.50	0.50

**Sources:** Gutjahr & Gmel (2001), Ridolfo & Stevenson (2001) (in press).  
**Definition of drinking categories:**  
**category I:** for females not exceeding on average 0 to 19.99 g pure alcohol per day; for males not exceeding on average 0 to 39.99 g pure alcohol per day;  
**category II:** for females not exceeding on average 20 to 39.99 g pure alcohol per day; for males not exceeding on average 40 to 59.99 g pure alcohol per day;  
**category III:** for females on average 40 g pure alcohol and above per day; for males on average 60 g pure alcohol and above per day. For comparison: a 75 cl. bottle of wine contains about 70 g of pure alcohol.

Source: WHO Global Status Report on Alcohol 2004, p.47 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 24:****Table 15: Attributable fractions of acute alcohol-related health effects in the adult general population**

Injury	ICD-9	USA		AUSTRALIA		CANADA		AUSTRALIA	
		Stinson et al.1993		English et al.1995		Single et al.1996		Ridolfo & Stevenson 2001	
		F	M	F	M	F	M	F	M
Motor vehicle traffic accidents	E810-E819	0.42	0.42	0.18	0.37	0.43	0.43	0.11 for deaths (d) and hospitalizations (h);	0.33 (d); 0.24 (h); pedestrians 0.40 (d); 0.37 (h)
Motor vehicle nontraffic accidents	E820-E825	0.42	0.42	0.18	0.37	0.43	0.43		
Bicycle accident injuries	E826	0.20	0.20	0.18	0.37	0.20	0.20	0.17 (d); 0.06 (h)	
Other road vehicle accident injuries	E829	0.20	0.20	0.18	0.37	0.2	0.20		
Water transport accident injuries	E830-E839	0.20	0.20	No data	No data	0.20	0.20	No data	No data
Air-space transport accident injuries	E840-E845	0.16	0.16	No data	No data	0.16	0.16	No data	No data
Accidental ethanol and methanol poisoning	E860.0-E860.2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Accidental fall injuries	E880-E888	0.35	0.35	0.34	0.34	0.13-0.34	0.20-0.34	0.14 for age <65 ; 0.04 = 65	0.22 for age <65 ; 0.12 = 65
Arson injuries	E890-E899	0.45	0.45	0.44	0.44	0.38	0.38	0.44	0.44
Accidental excessive cold	E901	0.25	0.25	No data	No data	0.25	0.25	No data	No data
Accidental drowning	E910	0.38	0.38	0.34	0.34	0.31-0.50	0.31-0.50	0.34	0.34
Accidental aspiration	E911	0.25	0.25	1.00	1.00	0.25	0.25	1.00	1.00
Striking against / struck by objects	E917	0.25	0.25	No data	No data	0.07	0.07	No data	No data
Caught in / between objects	E918	0.25	0.25	No data	No data	0.07	0.07	No data	No data
Occupational and machine injuries	E919-E920	0.25	0.25	0.07	0.07	0.07	0.07	0.07	0.07
Accidental firearm missile injuries	E922	0.25	0.25	No data	No data	0.25	0.25	No data	No data
Suicide, self-inflicted injuries	E950-E959	0.28	0.28	0.08	0.12	0.11-0.19	0.23-0.31	0.29	0.32
Victim, fight, brawl,rape	E960	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47
Victim assault firearms	E965	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47
Victim assault cutting instrument	E966	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47
Victim child battering	E967	0.46	0.46	0.16	0.16	0.16	0.16	0.16	0.16
Victim assault other	E968	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47
Late effects of injuries by another	E969	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47

Remarks: Ranges refer to age-specific attributable fractions; minimum (>0) and maximum estimates are shown.

Source: Rehm et al. (in press)

Source: WHO Global Status Report on Alcohol 2004, p.48 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 25:****Table 16: Global burden of disease in 2000 attributable to alcohol according to major disease categories (DALYs in 000s)**

Disease or Injury	Female	Male	Total	% of all alcohol-attributable DALYs
Conditions arising during the perinatal period	55	68	123	0%
Malignant neoplasm	1021	3180	4201	7%
Neuro-psychiatric conditions	3814	18 090	21 904	38%
Cardiovascular diseases	-428	4411	3983	7%
Other noncommunicable diseases (diabetes, liver cirrhosis)	860	3695	4555	8%
Unintentional injuries	2487	14 008	16 495	28%
Intentional injuries	1117	5945	7062	12%
<b>Alcohol-related disease burden all causes (DALYs)</b>	<b>8926</b>	<b>49 397</b>	<b>58 323</b>	<b>100%</b>
All DALYs	693 911	761 562	1 455 473	
% of all DALYs that can be attributable to alcohol	<b>1.3%</b>	<b>6.5%</b>	<b>4.0%</b>	In comparison: estimate for 1990: 3.5%

Source: Rehm et al. (2003d)

Source: WHO Global Status Report on Alcohol 2004, p.51 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 26:****Table 17: Burden of disease in 2000 attributable to tobacco, alcohol and drugs by developing status and sex**

	High mortality developing			Low mortality developing			Developed		
	(AFR-D, AFR-E, AMR-D, EMR-D, SEAR-D)*			(AMR-B, EMR-B, SEAR-B, WPR-B)*			(AMR-A, EUR-A, EUR-B, EUR-C, WPR-A)*		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>Total DALYs (000s)</b>	420 711	412 052	832 763	223 181	185 316	408 497	117 670	96 543	214 213
<b>- Smoking and oral tobacco (%)</b>	3.4	0.6	2.0	6.2	1.3	4.0	17.1	6.2	12.2
<b>- Alcohol (%)</b>	2.6	0.5	1.6	9.8	2.0	6.2	14.0	3.3	9.2
<b>- Illicit drugs (%)</b>	0.8	0.2	0.5	1.2	0.3	0.8	2.3	1.2	1.8

*\*[All WHO member states are classified into the following geographical regions and mortality strata:  
Epidemiological Sub-Regions:  
AFR - African Region  
EMR - Eastern Mediterranean Region  
EUR - European Region  
AMR - Region of the Americas  
SEAR - South-East Asian Region  
WPR - Western Pacific Region  
Mortality Strata:  
A. Very low child, very low adult  
B. Low child, low adult  
C. Low child, high adult  
D. High child, high adult  
E. High child, very high adult  
For more information on the different regions, see [www.who.int/choice/demography/regions/en/index.html](http://www.who.int/choice/demography/regions/en/index.html) [see <http://www.who.int/choice/demography/regions/en/index.html>]*

**Source: Rehm et al. (2003d)**

Source: WHO Global Status Report on Alcohol 2004, p.51 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]



**Annex 27:****Table 18: Characteristics of adult alcohol consumption in different regions of the world 2000 (population weighted averages)**

WHO Region (Definition see below)	Beverage type mostly consumed	Total consumption <sup>1</sup>	% unrecorded of total <sup>2</sup>	% heavy drinkers <sup>3</sup>	% drinkers among males	% drinkers among females	Consumption per drinker <sup>4</sup>	Average drinking pattern <sup>5</sup>
Africa D (e.g. Nigeria, Algeria)	Mainly other fermented beverages	4.9	53	5.3	47	27	13.3	2.5
Africa E (e.g. Ethiopia, South Africa)	Mainly other fermented beverages and beer	7.1	46	10.3	55	30	16.6	3.1
Americas A (Canada, Cuba, the United States)	> 50% of consumption is beer, about 25% spirits	9.3	11	11.2	73	58	14.3	2.0
Americas B (e.g. Brazil, Mexico)	Beer, followed by spirits	9.0	30	9.1	75	53	14.1	3.1
Americas D (e.g. Bolivia, Peru)	Spirits, followed by beer	5.1	34	2.7	74	60	7.6	3.1
Eastern Mediterranean B (e.g. the Islamic Republic of Iran, Saudi Arabia)	Spirits and beer, but scarce data	1.3	34	1.5	18	4	11.0	2.0
Eastern Mediterranean D (e.g. Afghanistan, Pakistan)	Spirits and beer, but scarce data	0.6	56	0.1	17	1	6.0	2.4
Europe A (e.g. Germany, France, the United Kingdom)	Wine and beer	12.9	10	15.7	90	81	15.1	1.3
Europe B (e.g. Bulgaria, Poland, Turkey)	Spirits	8.3	41	8.8	72	52	13.4	2.9
Europe C (e.g. the Russian Federation, Ukraine)	Spirits	13.9	38	18.6	89	81	16.5	3.6
South-East Asia B (e.g. Indonesia, Thailand)	Spirits	3.1	27	1.2	35	9	13.7	2.5
South-East Asia D (e.g. Bangladesh, India)	Spirits	2.0	79	0.9	26	4	12.9	3.0
Western Pacific A (e.g. Australia, Japan)	Beer and spirits	8.5	20	4.2	87	77	10.4	1.2
Western Pacific B (e.g. China, the Philippines, Viet Nam)	Spirits	5.0	26	4.1	84	30	8.8	2.2

<sup>1</sup> Estimated total alcohol consumption per resident aged 15 and older in litres of absolute alcohol (recorded and unrecorded)

<sup>2</sup> Percentage of total adult per capita consumption (= column 3) which is estimated to be unrecorded

<sup>3</sup> Estimated % rate of heavy drinking (males  $\geq$  40 g and females  $\geq$  20 g) among those aged 15+

<sup>4</sup> Estimated total alcohol consumption (in litres of absolute alcohol) per adult drinker

<sup>5</sup> Estimated average pattern of drinking (1-4 with 4 being the most detrimental pattern i.e. based on many heavy drinking occasions, drinking outside meals, high level of fiesta drinking and drinking in public places, etc. and 1 being the least detrimental pattern i.e. least heavy drinking occasions, drinking with meals, no fiesta drinking, elastic drinking in public places, etc.)

**Source: Rehm et al. (2003d)**

Source: WHO Global Status Report on Alcohol 2004, p.53 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 28:****Table 19: Alcohol-related harm in different regions of the world (population weighted averages), DALYs (000s)**

	Developing countries				Developed countries				World	
	very high or high mortality		low mortality		very low mortality only burden		Former Socialist:low mortality			
	AFR-D, AFR-E, AMR-D, AMR-B, EMR-D, SEAR-D***		AMR-B, EMR-B, SEAR-B, WPR-B***		AMR A, EUR A, WPR A***v>		Eur B, C***		DALYs	%
	DALYs	%	DALYs	%	DALYs	%	DALYs	%	DALYs	%
<b>Neuro-psychiatric conditions* and other NCD**</b>	4369	33.2	12 006	47.0	6484	68.7	3601	30.7	26460	44.2
<b>Alcohol use disorders</b>	3885	29.5	5715	22.4	6318	65.8	2550	21.7	18469	31.7
<b>Unintentional injuries</b>	5033	38.2	5961	23.4	1571	16.4	3929	33.5	16494	28.3
<b>Intentional injuries</b>	1689	12.8	2940	11.5	558	5.8	1874	16.0	7061	12.1
<b>Total alcohol related burden in DALYs</b>	13 165	100.0	25 519	100.0	9445 <sup>#</sup>	100.0	11742	100.0	58323	100.0
<b>Total burden of disease in DALYs</b>	845 628		411268		115246		100250		1472392	
<b>% of total disease burden which is alcohol related</b>	1.6		6.2		8.3		11.7		4.0	

\* dominated by alcohol use disorders (plus epilepsy and depression)  
\*\* other noncommunicable diseases, dominated by liver cirrhosis (plus diabetes)  
# before reduction of - 1548 DALYs due to protective effects of vascular diseases  
\*\*\*[All WHO member states are classified into the following geographical regions and mortality strata:  
Epidemiological Sub-Regions:  
AFR - African Region  
EMR - Eastern Mediterranean Region  
EUR - European Region  
AMR - Region of the Americas  
SEAR - South-East Asian Region  
WPR - Western Pacific Region  
Mortality Strata:  
A. Very low child, very low adult  
B. Low child, low adult  
C. Low child, high adult  
D. High child, high adult  
E. High child, very high adult  
For more information on the different regions, see [www.who.int/choice/demography/regions/en/index.html](http://www.who.int/choice/demography/regions/en/index.html) [see <http://www.who.int/choice/demography/regions/en/index.html>]]

Source: Rehm et al. (2003d); WHO (2001c, p. 150) (also available [www.who.int/whr2001/2001/main/en/annex/Annex3-en-WEB.xls](http://www.who.int/whr2001/2001/main/en/annex/Annex3-en-WEB.xls) [see <http://www.who.int/whr2001/2001/main/en/annex/Annex3-en-WEB.xls>]); own calculations

Source: WHO Global Status Report on Alcohol 2004, p.54 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 29:****Table 20: Selected population alcohol-attributable fractions, by disease category, sex and level of development (% DALYs for each cause) in 2000**

GBD disease categories	World			High mortality developing (AFR-D,AFR-E, AMR-D,EMR-D,SEAR-D)*		Low mortality developing (AMR-B,EMR-B, SEAR-B,WPR-B)*		Developed (AMR-A,EUR-A, EUR-B,EUR-C,WPR-A)*	
	Males	Females	Both	Males	Females	Males	Females	Males	Females
	Mouth and oropharynx cancers	22	9	19	11	4	28	10	41
Oesophagus cancer	37	15	29	17	6	42	16	46	36
Liver cancer	30	13	25	23	10	32	11	36	28
Other neoplasms	6	3	4	2	1	5	2	11	8
Unipolar depressive disorders	3	1	2	2	0	3	0	7	2
Epilepsy	23	12	18	14	7	27	13	45	36
Alcohol use disorders	100	100	100	100	100	100	100	100	100
Ischaemic heart disease	4	-1	2	7	0	5	0	2	-3
Haemorrhagic stroke	18	1	10	7	2	21	2	26	0
Ischaemic stroke	3	-6	-1	1	0	3	0	5	-16
Cirrhosis of the Liver	39	18	32	19	7	45	13	63	49
Motor vehicle accidents	25	8	20	19	5	25	8	45	18
Drownings	12	6	10	8	4	10	6	43	25
Falls	9	3	7	5	1	8	3	21	8
Poisonings	23	9	18	7	3	11	7	43	26
Other unintentional injuries	15	5	11	10	4	15	6	32	16
Self-inflicted injuries	15	5	11	8	2	10	5	27	12
Homicide	26	16	24	18	12	28	16	41	32
Other Intentional injuries	13	7	12	7	3	20	11	32	19

\*[All WHO member states are classified into the following geographical regions and mortality strata:

Epidemiological Sub-Regions:

AFR - African Region

EMR - Eastern Mediterranean Region

EUR - European Region

AMR - Region of the Americas

SEAR - South-East Asian Region

WPR - Western Pacific Region

Mortality Strata:

A. Very low child, very low adult

B. Low child, low adult

C. Low child, high adult

D. High child, high adult

E. High child, very high adult

For more information on the different regions, see [www.who.int/choice/demography/regions/en/index.html](http://www.who.int/choice/demography/regions/en/index.html)

Source: *Babor, Rehm & Room (in press)*

Source: *WHO Global Status Report on Alcohol 2004, p.55 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]*

## Annex 30:

**Table 21 [bis]: Social and economic costs of alcohol abuse for selected countries**

Country	Year	Total Cost Estimate	% of GDP
Australia	1998-1999	A\$ 7560.3 million	
Canada	1992	\$7.52 billion	1.1
Chile		\$2.969 billion	
Finland	1990	\$3.351-5.738 billion	
France	1997	115 420.91 FF	1.42
Ireland		2.4 billion	
Italy	2003	€26-66 billion	5-6
Japan	1987	US\$ 5.7 billion	
Netherlands (the)		€2.577 billion	
New Zealand	1990	\$16.1 billion	4.0
Scotland	2001-2002	\$1.071 billion	1.5
South Africa		\$1.7 billion	2.0
Switzerland	1998	6480 million Swiss francs	
United Kingdom (the)		£15.4 billion	
United States (the)	1998	\$184.6 billion	

**Note:** Please refer to the individual country profiles to obtain the original source used.

Source: WHO Global Status Report on Alcohol 2004, p.66 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 31:****Table 21: Standardized mortality rates (per 100 000) for acute and chronic disease and injury, by WHO regional subgroupings (data shown is for most recent year available)**

WHO sub-group	Country	Falls	Intentional injuries	Traffic casualties	Accidental poisoning	Alcohol use disorders	Liver cirrhosis	Mouth and oropharynx cancer	Ischaemic heart disease
AFR-D	Mauritius	2.77	14.44	15.91		2.04	15.78	3.85	173.51
AMR-A	Canada	3.08	12.09	8.45	2.73	1.61	5.24	2.06	82.97
AMR-A	Cuba	12.26	18.22	12.19	0.32	2.31	7.61	3.82	108.52
AMR-A	United States of America (the)	6.78	20.21	15.00	0.58	1.90	7.47	2.00	112.40
AMR-B	Argentina	0.79	15.51	9.56	0.45	1.83	6.39	2.14	49.38
AMR-B	Bahamas (the) <sup>a,b</sup>	0.45	26.02	20.04	0.30	3.98	16.91	2.49	85.79
AMR-B	Brazil <sup>a</sup>	3.53	29.63	16.63	0.17	3.28	11.31	3.87	72.26
AMR-B	Chile	0.83	10.26	10.69	0.27	1.47	20.49	1.35	62.42
AMR-B	Colombia <sup>a</sup>	3.34	69.15	17.71	0.29	0.03	6.25	1.72	89.80
AMR-B	Costa Rica <sup>a</sup>	2.35	11.78	17.83	0.27	0.93	7.81	2.22	93.08
AMR-B	El Salvador <sup>a</sup>	3.92	50.62	33.51	0.22	19.50	12.41	1.05	77.84
AMR-B	Mexico	3.14	15.00	11.64	1.05	5.82	36.15	1.33	75.78
AMR-B	Panama <sup>a</sup>	3.69	15.88	15.25	0.41	1.03	7.91	2.83	59.02
AMR-B	Paraguay <sup>a</sup>	0.74	16.38	10.42	0.43	1.42	6.26	2.05	51.31
AMR-B	Trinidad and Tobago	2.48	16.74	11.87	3.33	0.67	9.55	3.87	170.91
AMR-B	Uruguay	1.43	15.18	10.05	4.02	1.45	5.95	3.27	60.10
AMR-B	Venezuela	3.19	19.39	23.20	2.24	0.84	11.21	1.81	119.36
AMR-D	Ecuador <sup>a</sup>	3.42	22.16	11.95	1.96	2.97	15.45	0.97	31.32
EMR-B	Kuwait	2.20	3.93	19.01	0.65	0.05	4.01	0.97	79.10
EMR-D	Egypt <sup>a</sup>	0.93	0.51	6.65	0.15	0.00	35.89	0.57	27.05
EUR-A	Austria	6.76	15.38	9.84	1.11	2.98	14.95	3.96	100.03
EUR-A	Croatia	8.33	17.32	11.27	1.72	3.18	20.90	5.27	127.98
EUR-A	Czech Republic (the)	12.18	14.31	8.65	2.76	0.76	12.36	4.04	141.13
EUR-A	Denmark	12.20	13.00	9.57	2.96	6.90	11.70	3.17	90.91
EUR-A	Finland	10.84	23.20	7.77	9.12	3.63	9.60	1.82	122.98
EUR-A	France	8.69	15.01	13.06	0.79	3.37	11.45	5.85	39.12
EUR-A	Germany	4.40	11.15	8.05	1.14	4.01	13.36	3.77	95.74
EUR-A	Greece	3.20	4.06	18.88	2.57	0.05	3.83	1.22	63.65
EUR-A	Iceland <sup>b</sup>	2.81	11.42	6.16	0.57	2.29	2.58	1.60	108.20
EUR-A	Ireland	7.00	11.97	10.14	1.04	1.98	3.94	3.04	133.70
EUR-A	Israel	1.46	8.26	5.57	0.26	0.93	3.85	1.20	77.33
EUR-A	Italy	7.48	6.38	11.76	0.37	0.22	10.73	2.90	57.20
EUR-A	Luxembourg <sup>b</sup>	5.25	16.77	17.36	5.22	4.17	12.19	4.28	59.33
EUR-A	Malta <sup>b</sup>	8.70	9.55	4.49	1.30	0.37	5.46	4.64	144.63
EUR-A	Netherlands (the)	2.66	9.54	6.59	0.74	1.39	4.44	2.47	70.17
EUR-A	Norway	8.05	12.16	6.05	1.99	3.44	3.10	2.47	81.19
EUR-A	Portugal	3.38	4.82	12.50	0.64	0.32	13.08	4.06	50.51
EUR-A	Spain	2.31	7.49	13.98	2.03	0.52	8.45	3.75	49.94
EUR-A	Sweden	18.45	21.10	5.84	1.49	2.47	3.97	1.69	89.28
EUR-A	Switzerland	2.88	14.65	6.50	3.85	2.31	5.79	3.33	70.55

<sup>a</sup> Caution should be exercised when interpreting the results as death registration level is incomplete.

<sup>b</sup> As countries with very small population size are likely to have spurious trends, care should be exercised when making inter-country comparisons.

WHO sub-group	Country	Falls	Intentional injuries	Traffic casualties	Accidental poisoning	Alcohol use disorders	Liver cirrhosis	Mouth and oropharynx cancer	Ischaemic heart disease
EUR-A	United Kingdom (the)	14.80	14.62	5.62	1.91	0.87	7.36	2.15	112.41
EUR-B	Albania <sup>a</sup>	1.22	11.52	7.83	2.97	0.39		1.88	77.81
EUR-B	Armenia	0.72	3.62	5.43	1.32		13.07	2.16	261.22
EUR-B	Azerbaijan <sup>a</sup>	0.30	6.80	5.15	1.14		34.02	1.23	284.62
EUR-B	Bulgaria	3.06	14.95	10.92	2.18	0.77	12.74	3.12	144.31
EUR-B	Kyrgyzstan <sup>a</sup>	3.39	21.81	11.36	13.61	1.98	38.36	2.98	240.83
EUR-B	Poland	7.87	15.04	13.21	3.72	2.91	10.67	3.61	102.65
EUR-B	Romania	5.80	13.75	11.23	5.10	3.38	37.09	5.72	175.06
EUR-B	Slovenia	11.82	24.24	13.42	1.57	4.90	26.29	6.34	78.62
EUR-B	TFYR Macedonia	0.99	19.09	5.12	0.97	0.80	5.70	2.51	84.17
EUR-B	Turkmenistan <sup>a</sup>	4.01	28.40	8.60	19.04		42.35	3.63	319.76
EUR-B	Uzbekistan <sup>a</sup>	11.25	14.68	8.89	1.31		39.05	2.59	316.50
EUR-C	Belarus	5.14	38.92	13.97	29.09		12.76	4.37	331.23
EUR-C	Estonia	7.99	38.35	14.35	25.65	3.63	17.39	6.18	274.79
EUR-C	Hungary	18.67	25.96	11.69	1.40	2.87	45.79	12.64	179.07
EUR-C	Kazakhstan <sup>a</sup>	2.41	42.20	12.02	44.47	1.90	23.20	3.54	269.93
EUR-C	Latvia	13.25	37.26	22.78	13.60	8.15	12.10	3.99	250.55
EUR-C	Lithuania	10.22	45.94	18.16	16.20	1.10	14.36	5.58	250.20
EUR-C	Republic of Moldova (the) <sup>a</sup>	3.33	22.37	11.69	8.60	1.58	65.03	4.72	311.58
EUR-C	Russian Federation (the)	8.42	61.42	25.82	36.62			4.49	285.38
EUR-C	Ukraine	9.30	8.72	10.56	1.85		20.72	5.21	368.11
WPR-A	Australia	2.27	13.63	8.91	3.05	0.99	3.77	2.69	85.46
WPR-A	Japan	2.78	18.80	7.38	0.38	0.24	6.15	2.23	27.29
WPR-A	New Zealand	4.17	13.23	11.57	0.83	0.46	2.40	2.65	102.50
WPR-A	Singapore <sup>a</sup>	3.09	9.47	4.96	0.09		2.84	5.83	91.24
WPR-B	Philippines (the) <sup>a</sup>	2.35	19.80	8.60	0.30	0.71	10.00	4.67	86.22
WPR-B	Republic of Korea (the) <sup>a</sup>	6.59	16.00	20.00	0.92	2.48	20.02	1.69	27.01

<sup>a</sup> Caution should be exercised when interpreting the results as death registration level is incomplete.  
<sup>b</sup> As countries with very small population size are likely to have spurious trends, care should be exercised when making inter-country comparisons.

Source: WHO Global Status Report on Alcohol 2004, p.56 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

## Annex 32:

### Table 3: Total recorded alcohol per capita consumption (15+)

in litres of pure alcohol

Country	Total
Iran	0.00
Kuwait	0.00
Libyan Arab Jamahiriya (the)	0.00
Saudi Arabia	0.00
Somalia	0.00
Bangladesh	0.00
Mauritania	0.01
Pakistan	0.02
Algeria	0.03
Nepal	0.08
Comoros	0.08
Yemen	0.08
Indonesia	0.10
Egypt	0.10
Niger (the)	0.11
Jordan	0.11
Guinea	0.14
Sri Lanka	0.18
Iraq	0.20
Chad	0.23
Sudan (the)	0.27
Cambodia	0.36
Myanmar	0.36
Morocco	0.41
Tajikistan	0.41
Qatar	0.44
Senegal	0.48
Mali	0.49
Brunei Darussalam	0.49
Bhutan	0.57
Syrian Arab Republic (the)	0.62
Micronesia (Federated States of)	0.64
Tunisia	0.65
Turkmenistan	0.77
India	0.82
Solomon Islands	0.86
Equatorial Guinea	0.90
Ethiopia	0.91
Togo	0.95
Papua New Guinea	1.01
Malaysia	1.06
Djibouti	1.08
Vanuatu	1.11
Benin	1.22
Armenia	1.23
Oman	1.32
Viet Nam	1.35
Madagascar	1.38
Samoa	1.42
Malawi	1.44
Turkey	1.48
Uzbekistan	1.52
Eritrea	1.54
Ghana	1.54

Country	Total
Guatemala	1.64
Central African Republic (the)	1.66
Kiribati	1.66
Mozambique	1.67
Fiji	1.69
Côte d'Ivoire	1.71
Maldives	1.72
Kenya	1.74
Lesotho	1.83
Mongolia	1.96
Israel	1.99
Ecuador	1.99
Dem. Republic of the Congo	2.01
Gambia (the)	2.27
Honduras	2.28
Congo	2.36
Namibia	2.39
Georgia	2.41
Albania	2.51
Nicaragua	2.53
Bahrain	2.63
Singapore	2.73
United Arab Emirates (the)	2.75
Guinea-Bissau	2.76
Kazakhstan	2.89
Angola	2.91
Zambia	3.02
Liberia	3.12
Mauritius	3.16
Trinidad and Tobago	3.22
Jamaica	3.37
Bolivia	3.43
El Salvador	3.45
Seychelles	3.61
Cuba	3.65
Cameroon	3.66
Cape Verde	3.72
Philippines (the)	3.75
Ukraine	4.04
The form. Yugoslav Rep. of Mac.	4.12
Lebanon	4.13
Antigua and Barbuda	4.24
Burkina Faso	4.38
China	4.45
Belize	4.50
Guam	4.50
Mexico	4.62
Peru	4.68
Zimbabwe	5.08
United Republic of Tanzania	5.29
Brazil	5.32
Botswana	5.38
Costa Rica	5.45
Kyrgyzstan	5.50



<b>Country</b>	<b>Total</b>
Dem. People's Republic of Korea	5.68
Iceland	5.74
Norway	5.81
Suriname	5.82
Guyana	5.84
Colombia	5.92
Chile	6.02
Panama	6.04
Sao Tome and Principe	6.07
Dominican Republic (the)	6.11
Haiti	6.51
Slovenia	6.55
Saint Vincent and Grenadines	6.58
Sierra Leone	6.64
Paraguay	6.66
Cyprus	6.67
Barbados	6.70
Lao People's Democratic Republic (the)	6.72
Malta	6.74
Rwanda	6.80
Sweden	6.86
Azerbaijan	6.94
Uruguay	6.96
Bulgaria	7.13
Japan	7.38
Grenada	7.39
Saint Kitts and Nevis	7.62
Romania	7.63
French Polynesia	7.68
Republic of Korea (the)	7.71
South Africa	7.81
New Caledonia	7.83
Gabon	7.97
Belarus	8.12
Canada	8.26
Thailand	8.47
United States of America (the)	8.51
Argentina	8.55
Bosnia and Herzegovina	8.62
Poland	8.68
Venezuela	8.78
Italy	9.14
Australia	9.19
Dominica	9.19
Bahamas (the)	9.21
Greece	9.30
Latvia	9.31
Burundi	9.33
Swaziland	9.51
Netherlands (the)	9.74
New Zealand	9.79
Estonia	9.85
Netherlands Antilles	9.94
Nigeria	10.04

<b>Country</b>	<b>Total</b>
Belgium	10.06
United Kingdom (the)	10.39
Finland	10.43
Saint Lucia	10.45
Russian Federation (the)	10.58
Switzerland	11.53
Hungary	11.92
Denmark	11.93
Spain	12.25
Lithuania	12.32
Slovakia	12.41
Portugal	12.49
Austria	12.58
Croatia	12.66
Germany	12.89
Bermuda	12.92
Reunion	13.39
France	13.54
Republic of Moldova (the)	13.88
Ireland	14.45
Czech Republic (the)	16.21
Luxembourg	17.54
Uganda	19.47

Source & © WHO Global Status Report on Alcohol 2004, p.11 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

## Annex 33:

### Table 4: Top 20 countries with highest beverage-specific adult per capita [APC] consumption

[in liters of pure alcohol]

#### Beer

Country	APC in liters of pure alcohol
Czech Republic (the)	9.43
Ireland	9.24
Swaziland	7.49
Germany	7.26
Austria	6.42
Luxembourg	6.16
Uganda	6.14
Denmark	6.02
The United Kingdom	5.97
Belgium	5.90
Venezuela	5.69
Lithuania	5.53
Slovakia	5.34
Australia	5.20
Croatia	5.16
Netherlands Antilles	4.96
Netherlands (the)	4.91
Finland	4.89
United Republic of Tanzania	4.85
Gabon	4.77

#### Wine\*

Country	APC in liters of pure alcohol
Luxembourg	9.43
France	8.38
Portugal	7.16
Italy	6.99
Croatia	6.42
Switzerland	6.23
Argentina	5.63
Spain	5.07
Bermuda	4.95
Greece	4.78
Denmark	4.57
Austria	4.47
Hungary	4.47
Uruguay	4.35
Germany	3.38
Romania	3.37
Chile	3.25
French Polynesia	3.10
Bulgaria	3.05
Republic of Korea (the)	2.99

\*Throughout the report, fermented beverages are included in the wine category. However, for this table only average wine has been used to present the countries with the highest adult per capita wine consumption. If the fermented beverages were included, countries such as Uganda, Nigeria, Burundi, Sierra Leone, Rwanda and Sao Tome and Principe would appear to be among the top 'wine' drinking countries.

## Spirits

Country	APC in liters of pure alcohol
Republic of Moldova (the)	10.94
Reunion	8.67
Russian Federation (the)	7.64
Saint Lucia	7.27
Dominica	7.20
Thailand	7.13
Bahamas (the)	7.05
Latvia	6.62
Haiti	6.46
Belarus	6.34
Lao People's Democratic Republic	6.09
Bosnia and Herzegovina	6.03
Saint Vincent and Grenadines	5.98
Dem. People's Republic of Korea	5.48
Slovakia	5.44
Grenada	5.06
Lithuania	4.92
Azerbaijan	4.66
Kyrgyzstan	4.61
Czech Republic (the)	4.41

Source: WHO "Global Status Report on Alcohol 2004, p.13 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]"

## Annex 34:

### Table 5: Estimated volume of unrecorded consumption in litres of pure alcohol per capita for population older than 15 for the years after 1995

Country	Unrecorded consumption
Albania	3.0
Algeria	0.3
Argentina	1.0
Armenia	1.9
Australia	0.0
Austria	1.0
Azerbaijan	1.9
Barbados	-0.5
Belarus	4.9
Belgium	0.5
Belize	2.0
Bolivia	3.0
Botswana	3.0
Brazil	3.0
Bulgaria	3.0
Burkina Faso	3.3
Burundi	4.7
Cameroon	2.6
Chile	2.0
China	1.0
Colombia	2.0
Costa Rica	2.0
Croatia	4.5
Cuba	2.0
Czech Republic (the)	1.0
El Salvador	2.0
Eritrea	1.0
Estonia	5.0
Ethiopia	1.0
Fiji	1.0
Georgia	2.0
Guatemala	2.0
Guyana	2.0
Haiti	0.0
Honduras	2.0
Hungary	4.0
Iceland	1.0
India	1.7
Iraq	1.0
Jamaica	1.0
Japan	2.0
Kazakhstan	4.9
Kenya	5.0
Kyrgyzstan	2.0
Latvia	7.0
Lithuania	4.9
Luxembourg	-1.0
Malaysia	3.4
Mauritius	11.0
Mexico	3.0
Mongolia	2.0
Myanmar	0.4
Nicaragua	0.5
Nigeria	3.5

<b>Country</b>	<b>Unrecorded consumption</b>
Paraguay	1.5
Peru	1.0
Philippines (the)	3.0
Poland	3.0
Republic of Korea (the)	7.0
Republic of Moldova (the)	12.0
Romania	4.0
Russian Federation (the)	4.9
Rwanda	4.3
Saudi Arabia	0.6
Senegal	0.8
Seychelles	5.2
Slovakia	7.0
Slovenia	1.3
South Africa	2.2
Spain	1.0
Sri Lanka	0.5
Sudan	1.0
Suriname	0.0
Swaziland	4.1
Syrian Arab Republic (the)	0.4
Tajikistan	4.0
TFYR Macedonia	2.9
Thailand	2.0
Trinidad and Tobago	0.0
Tunisia	0.5
Turkey	2.7
Turkmenistan	1.0
Uganda	10.7
Ukraine	8.0
Uzbekistan	1.9
Venezuela	2.0
Zimbabwe	9.0

Source & © WHO "Global Status Report on Alcohol 2004, p.13 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]"

**Annex 35:****Table 6: Rate of last year abstainers among the adult population**

Country	Year	Total (%)	Male (%)	Female (%)
Albania	1995	24.0	12.0	36.0
Algeria	1995	89.0	80.0	98.0
Argentina <sup>a</sup>	2003	16.2	7.5	23.2
Armenia	1995	24.0	12.0	36.0
Australia	2001	17.5	14.1	20.8
Austria	1993	11.0	5.8	16.1
Azerbaijan	1995	24.0	12.0	36.0
Barbados	1995	49.5	29.0	70.0
Belarus	1995	3.0	2.0	4.0
Belgium	2001	18.9	11.5	25.8
Belize	1995	34.0	24.0	44.0
Benin <sup>a b</sup>	1998		16.8	14.3
Bolivia	1995	34.5	24.0	45.0
Botswana	1995	53.5	37.0	70.0
Brazil	2001-2002	51.5	40.0	60.5
Bulgaria	1997		32.1	65.1
Cambodia	1995	85.0	74.0	96
Canada <sup>b</sup>	1998-1999	22.1	17.8	26.1
Chile	2002	25.3	22.0	28.6
China <sup>a</sup>	2000-2001	48.6	27.5	73.1
Colombia	2000-2001	15.1	4.9	20.7
Costa Rica	1995	60.0	45.0	75.0
Cuba	1995	49.5	29.0	70.0
Cyprus	1995	8.0	1.0	15.0
Czech Republic (the)	2002	14.6	9.1	20.0
Denmark <sup>b</sup>	1997-1998	3.0	2.0	4.0
Egypt	2000-2001	99.5	99.0	100.0
El Salvador	1995	23.5	9.0	38.0
Fiji <sup>b</sup>	1993	88.7	78.8	97.9
Finland	2000	7.4	7.1	7.7
France	1999	6.7	4.3	8.9
Georgia	2000-2001	22.9	8.7	33.5
Germany	2000	5.1	4.3	5.9
Greece	1995	8.0	1.0	15.0
Guatemala	1995	53.5	45.0	62.0
Guyana	1995	30.0	20.0	40.0
Haiti	1995	60.0	58.0	62.0
Honduras	1995	23.5	9.0	38.0
Hungary	2001	17.5	9.2	25.5
Iceland	2003	11.8	11.4	12.2
India <sup>a</sup>	2000-2001	79.1	67.1	89.3
Indonesia	2000-2001	94.8	89.8	98.9
Iraq	1995	89.0	80.0	98.0
Ireland <sup>c</sup>	2002	22.0	17.0	26.0
Israel	2001	35.5	25.7	45.4

<sup>a</sup> Regional survey<sup>b</sup> No definition of abstainers given.<sup>c</sup> Last month abstainers<sup>d</sup> The former Yugoslav Republic of Macedonia<sup>e</sup> Current abstainers

Note: Please refer to individual country profiles for details of references/sources used.

Country	Year	Total (%)	Male (%)	Female (%)
Italy	2000	25.0	36.4	12.8
Jamaica	2001	57.6	43.8	69.4
Japan	2001	13.5	7.4	19.7
Jordan	1995	86.0	74.0	98.0
Kenya	1995	55.0	45.0	65.0
Kiribati <sup>b</sup>	1981	73.1	51.4	92.9
Kyrgyzstan	1995	70.0	60.0	80.0
Lebanon	2000-2001	77.4	67.4	86.7
Lesotho <sup>a b</sup>		74.0	47.0	81.0
Lithuania	1999	20.0	10.0	28.0
Luxembourg	1995	2.5	1.0	4.0
Malaysia	1995	49.5	35.0	64.0
Marshall Islands (the)		66.3	80.6	95.5
Mexico	1998	41.6	22.4	55.0
Micronesia (Federated States of)		67.6	45.1	90.9
Mongolia	1995	41.5	20.0	63.0
Myanmar	1995	69.5	45.0	94.0
Namibia	1998		39.0	53.0
Netherlands (the)	2001	15.8	9.4	21.8
New Zealand <sup>b</sup>	2000	15.0	12.0	17.0
Nicaragua	1995	23.5	9.0	38.0
Nigeria <sup>a</sup>	2000-2001	75.6	51.3	89.6
Norway	1999	6.0	5.8	6.2
Pakistan	1995	94.5	90.0	99.0
Palau	1990-1991		23.1	64.2
Papua New Guinea	1995	54.5	22.0	87.0
Paraguay	1995	28.0	18.0	38.0
Peru	2002	24.9	20.2	29.0
Philippines (the)	1995	40.0	10.0	70.0
Poland	1995	19.0	12.0	26.0
Portugal	1995	15.5	7.0	24.0
Republic of Korea (the) <sup>b</sup>	2001	27.1	12.4	38.9
Republic of Moldova (the)	1995	13.5	9.0	18.0
Romania	1995	38.0	23.0	53.0
Russian Federation (the)	1996	23.1	9.0	35.0
Saudi Arabia	1995	97.0	95.0	99.0
Seychelles	1995	27.5	10.0	45.0
Singapore	2000-2001	74.5	66.6	82.3
Slovakia	2000-2001	7.7	3.6	10.4
Slovenia	1995	24.0	12.0	36.0
South Africa	1995	69.0	55.0	83.0
Spain <sup>a</sup>	2003	37.7	26.9	48.7
Sri Lanka	2002	67.6	41.4	92.9
Suriname	1995	42.5	30.0	55.0
Sweden	2002	11.3	8.0	14.7
Switzerland	2002	22.5	14.2	30.4
Syrian Arab Republic (the)	2000-2001	95.7	92.4	98.8
Tajikistan	1995	70.0	60.0	80.0

<sup>a</sup> Regional survey

<sup>b</sup> No definition of abstainers given.

<sup>c</sup> Last month abstainers

<sup>d</sup> The former Yugoslav Republic of Macedonia

<sup>e</sup> Current abstainers

Note: Please refer to individual country profiles for details of references/sources used.



Country	Year	Total (%)	Male (%)	Female (%)
Thailand <sup>b</sup>	2001	67.4	44.1	90.2
TFYR Macedonia <sup>d</sup>	1995	24.0	12.0	36.0
Tokelau <sup>e</sup>	1976		50.0	92.0
Trinidad and Tobago	1995	49.5	29.0	70.0
Tunisia	1995	82.5	70.0	95.0
Turkey	2000-2001	80.4	77.5	82.5
Turkmenistan	1995	45.0	35.0	55.0
Uganda <sup>a</sup>	2003	54.3	48.2	60.3
The United Kingdom	2000	12.0	9.0	14.0
United States of America (the)	2002	33.9	29.3	38.2
Uzbekistan	1995	70.0	60.0	80.0
Venezuela	1995	42.5	30.0	55.0

<sup>a</sup> Regional survey

<sup>b</sup> No definition of abstainers given.

<sup>c</sup> Last month abstainers

<sup>d</sup> The former Yugoslav Republic of Macedonia

<sup>e</sup> Current abstainers

Note: Please refer to individual country profiles for details of references/sources used.

Source: WHO Global Status Report on Alcohol 2004, p.24 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

**Annex 36:****Table 7: Heavy drinkers among the adult population**

Country	Year	Total (%)	Male (%)	Female (%)
Argentina <sup>a,b,c</sup>	2003		11.5	2.0
Australia <sup>d</sup>	2001	7.0	6.7	7.2
Austria <sup>b,c</sup>	1993		17.3	7.0
Brazil <sup>b,c</sup>	2001-2002		17.8	18.2
Bulgaria <sup>e</sup>	1997		18.2	0.8
Burkina Faso <sup>b</sup>	2003	11.6	10.0	13.2
Chad <sup>b</sup>	2003	11.0	12.8	9.5
Colombia <sup>c,f</sup>	2001-2002	31.8	52.4	21.0
Costa Rica <sup>b,c</sup>	2003		5.0	3.0
Czech Republic (the) <sup>b,c</sup>	2002		25.7	12.5
Dominican Republic (the) <sup>b</sup>	2003	2.1	1.1	3.1
Ecuador <sup>b</sup>	2003	4.1	7.3	1.7
Estonia <sup>e</sup>	1997		9.3	0.5
Ethiopia <sup>b</sup>	2003	9.3	8.1	10.6
Finland <sup>b,c</sup>	2000		5.8	3.4
France <sup>b,c</sup>	1999		16.6	7.8
Georgia <sup>c,f</sup>	2001-2002	27.8	50.1	10.6
Germany <sup>b,c</sup>	2000		11.2	11.3
Ghana <sup>b</sup>	2003	1.9	2.1	1.7
Hungary <sup>b</sup>	2003	12.4	16.9	9.3
India <sup>b</sup>	2003	1.4	2.4	0.4
Israel <sup>b,c</sup>	2001		5.9	4.7
Italy <sup>g</sup>	2000	5.8	9.8	2.0
Japan <sup>b,c</sup>	2001		22.7	4.9
Lao People's Dem. Rep. <sup>b</sup>	2003	2.7	3.8	1.8
Mexico <sup>c,f</sup>	2000-2001	14.2	18.1	11.6
Namibia <sup>b</sup>	2003	4.1	3.1	4.9
Nepal <sup>b</sup>	2003	3.5	3.0	4.0
Netherlands (the) <sup>b,c</sup>	1999		10.4	11.1
Nigeria <sup>b,c</sup>	2003		27.8	36.1
Norway <sup>b,c</sup>	1999		3.0	5.2
Paraguay <sup>b</sup>	2003	3.1	5.6	1.0
Russian Federation (the) <sup>b</sup>	2003	2.4	3.7	1.6
Slovakia <sup>b</sup>	2003	7.0	5.2	7.9
South Africa <sup>c,f</sup>	1998	7.6	7.0	8.8
Switzerland <sup>b,c</sup>	1997		8.6	6.1
Turkey <sup>c,f</sup>	2000-2001	1.7	1.3	2.5
Uganda <sup>b,c</sup>	2003		40.1	20.3

<sup>a</sup> : Regional survey

<sup>b</sup> : Consumption of 40 g or more pure alcohol/day for men and 20 g or more pure alcohol/day for women.

<sup>c</sup> : Among drinkers only

<sup>d</sup> : Consumption of more than 40 g pure alcohol/day for men and more than 20 g pure alcohol/day for women.

<sup>e</sup> : Consumption of 560 g of ethanol a week or more (80 g a day or more).

<sup>f</sup> : Consumption of five or more standard drinks for males and three or more standard drinks for females on a typical drinking day.

<sup>g</sup> : Consumption of more than 0.5 litres of wine daily.

Note: Please refer to individual country profiles for details of references/sources used.

Country	Year	Total (%)	Male (%)	Female (%)
The United Kingdom <sup>c,f</sup>	2000		39.0	42.0
United States of America (the) <sup>b,c</sup>	1996		6.4	5.0
Viet Nam	2003	2.9	5.7	0.6
Zimbabwe	2003	2.7	5.8	1.0

<sup>a</sup> : Regional survey

<sup>b</sup> : Consumption of 40 g or more pure alcohol/day for men and 20 g or more pure alcohol/day for women.

<sup>c</sup> : Among drinkers only

<sup>d</sup> : Consumption of more than 40 g pure alcohol/day for men and more than 20 g pure alcohol/day for women.

<sup>e</sup> : Consumption of 560 g of ethanol a week or more (80 g a day or more).

<sup>f</sup> : Consumption of five or more standard drinks for males and three or more standard drinks for females on a typical drinking day.

<sup>g</sup> : Consumption of more than 0.5 litres of wine daily.

Note: Please refer to individual country profiles for details of references/sources used.

Source: WHO Global Status Report on Alcohol 2004, p.27 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

## Annex 37:

### Table 8: Heavy episodic drinkers among the adult population

Country	Year	Total (%)	Male (%)	Female (%)
Australia <sup>a</sup>	2001	13.4	15.3	11.6
Belgium <sup>b</sup>	2001	20.1	32.6	8.4
Bosnia and Herzegovina <sup>e</sup>	2003	1.2	2.9	0.0
Brazil <sup>e</sup>	2003	9.9	17.2	4.1
Burkina Faso <sup>e</sup>	2003	10.9	13.9	7.7
Canada <sup>c,f</sup>	2001-2002	20.1	28.3	11.2
Chad <sup>e</sup>	2003	12.3	17.2	7.9
China <sup>e</sup>	2003	3.8	7.5	0.3
Colombia <sup>g</sup>	2001-2002	5.2	11.6	1.9
Comoros (the) <sup>e</sup>	2003	0.2	0.4	0.0
Congo <sup>e</sup>	2003	5.2	8.3	2.5
Costa Rica <sup>c,d</sup>	2003		22.1	8.2
Côte d'Ivoire	2003	4.1	6.5	0.9
Czech Republic (the) <sup>c,d</sup>	2002		28.8	9.9
Dominican Republic (the) <sup>e</sup>	2003	9.1	15.7	3.5
Ecuador <sup>e</sup>	2003	4.7	9.3	1.2
Estonia <sup>e</sup>	2003	6.9	15.2	2.3
Ethiopia <sup>e</sup>	2003	4.1	7.7	0.4
Finland <sup>c,h</sup>	2000		49.1	14.1
France <sup>c,h</sup>	2000		27.9	9.7
Georgia <sup>e</sup>	2003	10.8	22.3	1.2
Germany <sup>c,d</sup>	2000		42.1	12.7
Ghana <sup>e</sup>	2003	1.4	2.5	0.4
Guatemala <sup>e</sup>	2003	1.3	3.4	0.2
Hungary <sup>e</sup>	2003	9.1	18.9	1.9
Iceland <sup>c,d</sup>	2001		42.7	20.0
India <sup>e</sup>	2003	1.4	2.9	0.1
<b>Italy</b> <sup>b,c</sup>	2001-2002		12.8	11.5
Japan <sup>c,h</sup>	2001		38.3	10.7
Kazakhstan	2003	4.4	8.8	2.0
Lao People's Dem. Republic (the) <sup>e</sup>	2003	12.3	20.9	4.8
Mexico <sup>c,d</sup>	1998		46.9	5.8
Namibia <sup>e</sup>	2003	6.2	9.5	4.0
Netherlands (the) <sup>c,h</sup>	1999		36.6	11.6
<b>Nigeria</b> <sup>c,d</sup>	2003		52.0	39.6
Paraguay <sup>e</sup>	2003	14.3	27.4	3.4
Philippines (the) <sup>e</sup>	2003	7.0	13.2	1.6

<sup>a</sup> Consumption of seven or more standard drinks for males (five or more for females) on any one drinking occasion at least monthly.

<sup>b</sup> At least once a month six or more drinks on the same day.

<sup>c</sup> Among drinkers only

<sup>d</sup> Consumption of five or more drinks on one occasion at least once a month in the last year.

<sup>e</sup> At least once a week consumption of five or more standard drinks in one sitting.

<sup>f</sup> Consumption of five or more drinks on one occasion, 12 or more times in the last year.

<sup>g</sup> Consumption of six or more drinks on one occasion weekly or more.

<sup>h</sup> Consumption of six or more drinks on one occasion at least once a month in the last year.

**Note:** Countries in bold indicate that surveys were not national but regional. Please refer to individual country profiles for details of references/sources used.

Country	Year	Total (%)	Male (%)	Female (%)
Russian Federation (the) <sup>b</sup>	2003	8.2	15.1	3.6
Slovakia <sup>b</sup>	2003	6.8	13.9	2.8
Spain <sup>e</sup>	2003	4.6	8.5	1.6
Sri Lanka <sup>e</sup>	2003	2.4	4.9	0.1
Ukraine <sup>e</sup>	2003	9.6	19.5	3.7
<b>Uganda</b> <sup>c,d</sup>	2003		46.0	17.6
The United Kingdom <sup>g</sup>	2000	17.0	24.0	9.0
Viet Nam <sup>e</sup>	2003	4.7	10.2	0.3
Zimbabwe <sup>e</sup>	2003	4.0	10.1	0.9

<sup>a</sup> Consumption of seven or more standard drinks for males (five or more for females) on any one drinking occasion at least monthly.

<sup>b</sup> At least once a month six or more drinks on the same day.

<sup>c</sup> Among drinkers only

<sup>d</sup> Consumption of five or more drinks on one occasion at least once a month in the last year.

<sup>e</sup> At least once a week consumption of five or more standard drinks in one sitting.

<sup>f</sup> Consumption of five or more drinks on one occasion, 12 or more times in the last year.

<sup>g</sup> Consumption of six or more drinks on one occasion weekly or more.

<sup>h</sup> Consumption of six or more drinks on one occasion at least once a month in the last year.

**Note:** Countries in bold indicate that surveys were not national but regional. Please refer to individual country profiles for details of references/sources used.

Source: WHO Global Status Report on Alcohol 2004, p.28 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]

## Annex 38:

### Table 9: Alcohol dependence among adult population

Country	Year	Total (%)	Male (%)	Female (%)	Measure
Argentina <sup>a</sup>	1999	4.31	6.67	1.74	ICD-10
Australia <sup>a</sup>	1997	3.5	5.2	1.8	ICD-10
Austria <sup>b</sup>	1996	2.2			CAGE
Belgium <sup>b</sup>	2001	7.0	9.5	3.6	N.A.
Brazil <sup>b</sup>	2001	11.2	17.1	5.7	N.A.
Canada <sup>c</sup>	2002	9.3	14.0	4.5	mixed
Chile <sup>d</sup>		6.4	11.0	2.1	DSM-III-R
<b>China</b> <sup>b</sup>	2001	3.8	6.6	0.2	DSM-III-R
Colombia <sup>a</sup>	2000-2001	4.8	9.8	2.2	ICD-10
Costa Rica <sup>b,e</sup>	2000-2001	7.0	10.8	2.4	mixed
Egypt <sup>a</sup>	2000-2001	0.2	0.4	0.0	ICD-10
<b>Ethiopia</b> <sup>d</sup>	1994	1.0	1.9	0.1	CAGE/CIDI
Finland <sup>b</sup>	2000	4.0	6.5	1.5	DSM-IV
France <sup>b</sup>	2000		13.3	4.1	DETAf
Georgia <sup>a</sup>	2000-2001	3.2	7.3	0.2	ICD-10
<b>Germany</b> <sup>b</sup>	2000	3.8	6.0	1.5	DSM-IV
India <sup>a</sup>	2000-2001	3.6	6.8	0.7	ICD-10
Indonesia <sup>a</sup>	2000-2001	1.0	1.7	0.3	ICD-10
<b>Iran</b> <sup>e</sup>		7.3	11.9	2.7	DSM-IV
Japan <sup>d</sup>	1997-1999	4.1	8.4	0.7	DSM-III-R
Mexico <sup>a</sup>	2000-2001	1.8	4.2	0.2	ICD-10
Netherlands (the) <sup>b</sup>	1996	5.5	9.0	1.9	DSM-III-R
<b>Nigeria</b> <sup>a</sup>	2001-2002	0.7	1.9	0.0	ICD-10
Peru <sup>h</sup>	2002	10.6	17.8	4.3	ICD-10
Poland <sup>b</sup>	1999	12.2	23.3	4.1	CAGE
Republic of Korea (the) <sup>a</sup>	2003	4.3	6.9	1.7	CIDI
Singapore <sup>a</sup>	2001-2002	0.6	1.1	0.2	ICD-10
Slovakia <sup>A</sup>	2001-2002	4.8	9.4	1.1	ICD-10
South Africa <sup>d</sup>	1998		27.6	9.9	CAGE
Syrian Arab Republic (the) <sup>a</sup>	2001-2002	0.2	0.5	0.0	ICD-10
Turkey <sup>a</sup>	2001-2002	1.3	1.7	0.7	ICD-10
The United Kingdom <sup>b</sup>		4.7	7.5	2.1	ICD-10
United States of America (the) <sup>g</sup>	2002	7.7	10.8	4.8	DSM-IV
Uruguay <sup>b</sup>	2001	5.0	8.5	1.3	DSM-IV

<sup>a</sup> Last year alcohol dependence

<sup>b</sup> No definition of alcohol dependence given.

<sup>c</sup> Alcohol dependence classification was based on a set of questions which examined aspects of alcohol tolerance (for e.g. needing more to have an effect), withdrawal, loss of control, and social or physical problems related to alcohol use in daily life.

<sup>d</sup> Lifetime alcohol dependence

<sup>e</sup> Alcohol dependency/alcoholic was defined as an individual that presents/displays the inability to abstain from the consumption of spirits or is unable to stop when consuming spirits as well as symptoms of greater deprivation (e.g. tremors).

<sup>f</sup> Diminuer entourage trop alcool (Reduce alcohol-based surroundings) test

<sup>g</sup> Alcohol dependence or abuse

**Note:** Countries in bold indicate that surveys were not national. Please refer to individual country profiles for details of references/sources used.

Source: WHO Global Status Report on Alcohol 2004, p.30 [see [http://www.who.int/substance\\_abuse/publications/global\\_status\\_report\\_2004\\_overview.pdf](http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf)]