National and provincial government spending and revenue related to alcohol abuse

Prepared for Soul City

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Introduction

Background

This paper was commissioned by Soul City as part of its preparation for a multi-year campaign on violence prevention and reduction through a focus on alcohol. The paper reports on research aimed to arrive at an estimate of the direct costs incurred through provincial and national government budgets in South Africa on account of alcohol abuse. The estimate is based on allocations that aim to deal with the consequences of alcohol abuse, as well as allocations that aim to reduce the extent to alcohol abuse and its negative consequences. The paper provides background information for use by Soul City in its proposed campaign.

General approach

The paper does not attempt to calculate the full cost to society of alcohol abuse. It focuses instead only on the costs reflected in government budget allocations. The exercise is different from costing exercises that government is increasingly requiring in respect of new legislation or policies. For example, in 2007 the Child, Youth, Family and Social Development Programme of the Human Sciences Research Council developed a costing for the Prevention and Treatment of Substance Abuse Bill (Arvin Bhana: personal communication). That exercise focused on what government would need to spend to implement the bill. This paper provides, instead, an estimate of what government is actually spending on account of alcohol abuse. The difference is thus between needed and actual expenditure, and between expenditure focusing primarily on prevention and treatment (in the case of the master plan) as against expenditure that deals with a fuller range of (largely negative) consequences of alcohol abuse as well as prevention and treatment initiatives.

The estimates presented in this paper also represent a different exercise to estimates of the social or economic costs of alcohol abuse.

Thus the international guidelines for estimating the costs of substance abuse (Single et al, 2001) describe economic costs as including the social costs of treatment, prevention, research, law enforcement, lost productivity and quality of life compared to a situation in which there was no abuse. Social costs in the recommended approach are restricted to what economists refer to as “externalities”, namely costs incurred by actors other than the person who does the activity. This is somewhat confusing as

social costs are usually defined to include both external costs and private costs, with the latter bieng the costs incurred by the person who does the activity. However, with both definitions of social costs, social includes both public sector (government) costs and private costs. The difference between the two definitions is whether the costs incurred by the actor, in this case the person abusing alcohol, are included.

The public sector costs focused on in this paper are thus a sub-set of both definitions of social cost. Indeed, Single et al (2001) note that the money that government spends on policy-related costs such as treatment, enforcement, prevention and research in relation to drug abuse has been calculated to amount to only about 5% of even the narrower definition of social costs in countries where estimates have been made. The estimates derived in this paper thus represent only a fraction of the true cost that alcohol abuse imposes on society.

Single et al (2001) include a discussion of the challenges involved in estimating government costs. The exercise is relatively simple for allocations in respect of activities that focus on alcohol abuse such as anti-alcohol awareness-raising initiatives or research. However, even here there are challenges as publicly available budget documents may not give detailed breakdowns that allow the projects or initiatives directly related to alcohol to be separated out.

Beyond the focused allocations, government also incurs expenses within general allocations such as those for enforcing the law, punishing offenders, providing treatment for health problems and welfare and other services for those negatively affected by alcohol abuse. The challenge here is that the government agencies responsible for these functions do not allocate a separate amount for police, magistrates, nurses, prison warders and other officials who deal with alcohol abuse. Instead, “general” police, magistrates, nurses and prison warders deal with problems resulting from alcohol abuse alongside problems arising from a host of other reasons. For these areas we therefore have to estimate the proportion of time and other resources that is attributable to alcohol abuse. The paper details the research or other information on which each such estimate is based. As will be seen, in many cases the estimate is easy to challenge. However, by providing full details of the source and assumptions, this paper provides the basis for future refinement of the overall estimate.

The inclusion of both targeted allocations and expenditure that is part of general allocations results in our focusing on the following departments:

- Health (national and provincial)
- Social development (national and provincial)
- Safety and security (national and provincial)
- Justice and constitutional development (national)
- Correctional services (national)
- Transport (provincial)

Education is not included because direct allocations are likely to constitute a tiny proportion of allocated budgets. One area in which one could argue that money is allocated is life skills, insofar as teaching of this subject focuses on alcohol abuse. However, life skills would itself constitute a very small proportion of the overall cost of education provision at primary or secondary level, and alcohol would be only one of many issues covered. One could also attribute a proportion of the amount spent on safe schools initiative to alcohol prevention.

The exclusion of education illustrates the extent to which the approach in this paper under-estimates the costs imposed by alcohol abuse, even if we restrict our attention to government costs. Firstly, we do not include an estimate of the costs of absenteeism of teachers and other government officials who are absent as a result of alcohol abuse. Secondly, we do not include an estimate of the extra cost imposed on the system by children having to repeat years, or receive special education, on account of foetal alcohol syndrome. We exclude these two costs on the grounds that they are indirect rather than direct costs. We also exclude what could be considered a direct cost in terms of the money that is spent within employee assistance programmes in dealing with the consequences of alcohol abuse or preventing it. These costs are excluded because of the difficulty of deriving the numbers, and because they are likely to be relatively small.

Our choice of departments will exclude some alcohol-related expenditures. For example, the department of agriculture in the Western Cape has developed a mini drug plan for farm workers within their farm worker development directorate. The plan places emphasis, among others, on foetal alcohol syndrome. The plan has been allocated R300 000 for 2009/10 (Danie Niemand: personal communication). While such expenditures are interesting, there is no simple way of finding all the relevant expenditures. Instead we hope that publicising of the estimates provided in this paper might encourage those who know about such expenditures to come forward with the information for future improvement of the estimates.

Our estimates also exclude expenditures related to alcohol-related research that might be done in other agencies. For example, some of the research undertaken by the Medical Research Council and cited in this paper will to have been funded through the core funding received by the Council from the Department of Health. However, the overall amount of expenditure excluded through not covering research is likely to be very small. Thus one of the lead researchers on alcohol abuse estimated that the total spent on alcohol-related research across all the research councils was likely to be in the region of about R6 million per year (Charles Parry: personal communication).

Most of the estimates provided in this paper relate to expenditure. There are, however, some revenues that accrue to government on account of alcohol abuse (or use). Firstly, there are the fees paid to provincial governments for liquor licences. Secondly, there are the excise duties paid in respect of alcohol. Thirdly, there is the value-added tax (VAT) generated through

sale of alcohol. The paper includes estimates for all these revenue sources. It does not include estimates in respect of income tax paid in respect of those employed in the liquor industry.

The paper focuses on national and provincial government budgets. It does not include local government budgets. This, again, means that the overall estimate provided by this paper is an under-estimate. The paper does point out various instances where further expenditures are likely to be found in local government budgets.

Sources

The primary source for the estimates provided in this paper is the government's publicly available budget-related documents. In particular, the paper draws on the budget numbers published in the annual national estimates of expenditure and provincial budget statements that are tabled in the legislatures on budget days. Each of the chapters of these documents details the budget allocated for a particular "vote", which is for the most part equivalent to a government department. Within each vote, the chapter disaggregates the budget estimates first into programmes, of which there are typically about five for each vote. Each programme budget is then further disaggrated into sub-programmes, which can number as few as one per programme, or – in a few instances – more than ten. Most programmes will consist of about four sub-programmes.

South African budget documents typically provide information in respect of seven financial years. They include the three years preceding the current year, the current year (which will be drawing to a close at the time the budget is tabled), the coming year (which is the one that must be voted on by the legislature), and the following two years (which are often referred to as the "outer years" of the medium-term expenditure framework (MTEF). This paper is based on the budget documents tabled in February and March 2009, and focuses on what was then the coming year, namely 2009/10. It also draws on the Provincial Budgets and Expenditure Review (PBER) which was published in the second half of 2009, and which consolidates the discusses the budget allocations across the nine provinces for some of the key sectors.

South Africa's budget documents include fairly extensive narrative alongside the budget numbers. The paper draws on this narrative for an understanding of what particular sub-programmes cover. The narrative also provides an indication of issues that the department concerned considers most important.

In addition to the budget documents, the paper draws on reports of diverse research initiatives. Some of the research initiatives focus specifically on alcohol. Many others make some reference to alcohol but do not have this as the main focus. The sources were found with the help of a range of researchers, government officials and others who offered their time, knowledge and

expertise in suggesting what might be useful for this exploratory paper. The paper thus, in addition to the published sources, draws on information offered through interviews, emails and short discussions with many people.

Deriving the sectoral estimates

Introduction

This section of the report discusses each government sector. For each sector there is a table showing the relevant budget allocations as listed in the budget documents. In the case of provincial departments the allocations are in thousands of rands. For national departments they are in millions of rands. The table is preceded by discussion that explains why particular sub-programmes were selected, suggests the proportion of each allocation that could be considered attributable to alcohol abuse, and provides evidence and sources to support the suggested proportion. We then apply the suggested proportion to the allocation/s to arrive at an estimate of the amount allocated for 2009/10 on account of alcohol abuse within this sector.

In selecting sub-programmes, for the most part we focus on service delivery rather than management and administration. It is, however, not always possible to separate services out neatly as some management and administration will be included in the service delivery allocations. Further, one could argue that these aspects should be included as service delivery is not possible without proper management and administration. However, one could also argue that the management and administration costs would be incurred even if there were not alcohol abuse. This argument makes sense, in particular, for services where there is much unmet demand, such as health, and where the services used on account of alcohol abuse could be seen as preventing people with other problems accessing services. Unfortunately, there is unmet demand across many sectors in South Africa and our exclusion of management and administration thus seems justifiable.

The exclusion of management and administration costs could help explain some instances where our estimates differ from those offered by others, e.g. the Western Cape government's estimate that 30% of the total provincial and health budgets is spent on the burden of disease attributable to alcohol (Winde presentation, 2009). However, 30% seems high even if one does include management and administration given that disability-adjusted life years (DALYs) estimates for South Africa, even with infectious diseases included, suggest that only about 9% is attributable to alcohol (Rehm et al, 2009a). It could be that the 30% relates to the percentage of service delivery that involves illnesses and conditions related to alcohol abuse, but correlation between alcohol abuse and a particular illness or condition does not imply causation. The 30% estimate could also have been influenced by the higher than average incidence of alcohol abuse in Western Cape when compared with other provinces of South Africa.

Social development

Analysis is facilitated for social development because programme and sub-programme names (and, to a large extent content) are standardised across provinces within this sector. There is also a relatively close match in the programme and sub-programme structure, at least for the functions in which we are interested, between provincial and national. One difference between national and provincial is that HIV and AIDS is categorised under social welfare services in the provinces, but under community development in the national budget. Youth development is under community development in national and development and research by provinces.

For the ***substance abuse, prevention and rehabilitation*** function we can assign the proportion of users of rehabilitation services, as reported by Plüuddemann et al (2009) to be receiving treatment for alcohol, for the different provinces and regions. The proportion is almost certainly higher than the proportion that alcohol abusers make up of overall substance abusers, but is a reflection of who uses services. The proportions are 28% for Western Cape, 48% for KwaZulu-Natal, 44% for Eastern Cape, 48% for Gauteng, 34% for Northern Region (Limpopo and Mpumalanga) and 67% for Central Region (Free State, Northern Cape and North West). Nationally, 54.9% of patients in treatment in the second half of 2008 had alcohol as a primary or secondary drug of abuse.

For ***crime prevention and support***, we use the same proportion as we later use for prisons on the basis that at least some of these services focus on past offenders. Unfortunately, there is no single authoritative source that tells us the proportion of prison inmates who are incarcerated as a result of alcohol abuse. Instead, there are several studies – sometimes quite small-scale – that give indications of substance usage among inmates. In a small qualitative study of released prisoners in Western Cape (Muntingh, 2008), only 7 of 38 informants said that they had never used drugs or alcohol. Thus over four in five had used these substances. However, this does not mean that the substance – or alcohol in particular – caused the crime. In a slightly larger survey study of inmates of Boksburg Youth Centre (Gear et al, 2006), 39% of respondents said that they had used alcohol or drugs while incarcerated in the Centre. In a larger study of 1 900 murder dockets (Centre for the Study of Violence & Reconciliation 2008), 74% of the victims of the largest identifiable category (argument-type murders) tested positive for blood alcohol, and 12% of the victims of the second largest category, namely murders committed (or alleged to be committed) in the course of another crime. Overall, 55% of victims tested positive for blood alcohol. This is similar to Freeman & Parry's (2006) quote of results of the Non-Natural Mortality Surveillance System (NNMSS) for 2002 which found that 51% of homicide victims had positive blood alcohol concentrations (BACs). Mathews et al (2009) find that victims of intimate homicide (such as by a partner) tended to have higher blood acohol levels than those of non-intimate homicide.

Murder is obviously not the only crime for which people are imprisoned. And not all those who are charged with murder are convicted and imprisoned. However, the Centre for the Study of Violence (2007) estimates that approximately 73% of sentenced prisoners are serving sentences for sexual offences or other crimes of violence, while about 63% of awaiting-trial or unsentenced prisoners have charges relating to violent or sexual offences. They note that these statistics are fairly similar to statistics of the Department of Correctional Services for the first half of 2007 which record 70% of prisoners being already sentenced. The 30% not sentenced is made up of 5% charged with sexual offences, 14% with other violence, and 11% with other offences. The 70% already sentenced is made up of 11% sexual, 40% other violence and 19% other offences.

If we assume that those convicted of sexual and other violent crimes are likely to have similar patterns of alcohol abuse to murderers, and use the 55% of murder victims testing positive for blood alcohol, and apply this to the 61% of convicted inmates who are imprisoned for these crimes, we get a percentage of 34%. The fact that the high blood alcohol was not necessarily the cause of crime means that the 55% is an over-estimate. However, using 61% implies that we are not attributing any of the other offences to alcohol abuse. The 34% is higher than the 6% (in Johannesburg) to 23% (in Cape Town) of arrestees in three major cities who self-reported that they were under the influence of alcohol at the time the alleged offense was committed (Parry et al, 2004). On the one hand, we could argue that arrestees are different from those convicted in that some arrestees will be released or found not guilty, and it could be that those who will be found guilty are more likely than others to have been under the influence of alcohol. On the other hand, it could be that the crime prevention and support services sub-programme focuses primarily on those who have been convicted. Given the substantial difference between 34% and the findings in the three-city study, we use a percentage lower than 34%. We settle on 25% in the absence of further, better sources of information.

For ***services to persons with disabilities***, we might want to allocate a relatively small proportion reflecting those who might have become disabled as a result of alcohol abuse. Indeed, in at least some provinces the forms used to assess eligibility for disability pensions includes a question on alcohol abuse. Further, epilepsy – which is one of the more common forms of disability in South Africa – is known to have a significant link with alcohol abuse. Indeed Scheider et al (2007) estimate that epilepsy accounts for about 3.5% of alcohol-attributable years of life lived with disability (YLDs) in South Africa. The definition of disability used in these calculations is not necessarily the same as that used in targeting services for persons with disability or disability grants (see below. However, there are a range of factors that would tend to increase the levels of disability in the country, including the high prevalence of HIV and AIDS, high incidence of foetal alcohol syndrome, and high levels of violence. All of these factors are, in turn, related to the levels of alcohol abuse in the country. In the absence of any evidence as to the proportion of disability caused by alcohol abuse, we allocate a conservative 2% of the allocation to services to persons with disabilities. This small proportion is included as a reminder that this is an area meriting further research.

Victim empowerment generally places significant focus on victims of violence against women and children. Such abuse, in turn, is known to have a strong link with alcohol abuse. We therefore use research on this form of violence as the source of our

proportion. Freeman & Parry (2006) quote Peden's finding that 70% of domestic violence cases in the Western Cape were alcohol-related. If one expands beyond domestic violence, they report that a fifth of offenders arrested for rape reported that they were under the influence of alcohol at time of crime, while 44% of victims of interpersonal violence believed their attacker to be under the influence of alcohol or drugs. Parry et al (2009) quote docket analysis by the South African Police in 2001 which found that 3.8% of child sexual offences had offenders who were under the influence of alcohol. Parry et al (2004) report that 49% of those arrested on family violence charges said that they were under the influence of alcohol at the time of the alleged offense. The World Health Organistion (2000) notes that 16% of child abuse offences have been estimated to be linked to alcohol abuse in both Australia and Canada. Freeman & Parry (2006) report that parental alcohol use was reported in 34% of child welfare investigations in Canada. Given the very different percentages from the different sources, we settle for 25%, which is well under half of Peden's estimate. We take less than half of Peden's estimate as the Western Cape is likely to have higher levels of alcohol-attributable crime than other provinces.

HIV and AIDS is included because of the link between HIV and AIDS (and the associated tuberculosis) and alcohol abuse. Research suggests a range of reasons for the link with HIV and AIDS, including higher levels of engagement in unprotected sex among those who have imbibed alcohol, lesser adherence to medication, and faster progression of the disease (Parry, 2009). Social development services tend to focus on those affected as much as, or more than, the infected. However, it seems reasonable to use the same proportion as for HIV and AIDS services that directly target those infected and ill. Rehm et al (2009a) suggest that in 2004 55,8% of the burden of disease and injuries attributable to alcohol for women in South Africa took the form of HIV/AIDS and 25,8% for men. Unfortunately, this is not an estimate of the proportion of HIV/AIDS attributable to alcohol. [Charles Parry following up possible lead on this]

Care and support to families is included in that it is intended to prevent family breakup and promote health families. Violence against women constitutes one of the important reasons for family breakdup and this, in turn, has an alcohol abuse link. More generally, ongoing surveillance of cases seen by district social workers in the Western Cape suggests that 32% of those presenting for marital or relationship problems report that they consume alcohol daily (Charles Parry: personal communication). We attribute a lower 20% of this sub-programme's budget to alcohol abuse for this exercise in light of the fact that Western Cape has higher levels of alcohol abuse than other provinces, and in acknowledgment of the fact that daily drinking does not necessarily constitute abuse.

Youth development is included on the assumption that some attention is given to alcohol abuse in at least some of the interventions. The budget narratives make no mention of such a focus. This does not necessarily mean that the issue is not tackled in some way as the narratives are relatively short and what is covered is to some extent ad hoc. We include the allocation but assign a proportion of only 1%. As in some other cases, this small proportion is assigned more as a "place-marker" than because of what it will add to the overall estimate. In the case of youth development the place-marker serves as a

reminder that this sub-programme should include a focus on alcohol abuse. This is borne out by the finding in the first South African National Youth Risk Behaviour Survey of 2002 that 23% of learners in grades 8 through 11 had engaged in binge drinking in the previous month (Medical Research Council, 2003).

Table 1. Relevant allocations in budgets of provincial departments of social development (R'000)

Sub-programme	EC	FS	GT	KZN	LM	MP	NC	NW	WC	Total
Substance abuse, prevention & rehabilitation	9903	8808	100517	44033	3728	17082	6213	28788	52613	271685
Crime prevention and support	81163	20084	150868	56715	10432	15097	65319	58796	110685	569159
Services to persons with disabilities	30260	19293	87257	56411	5266	26048	6220	21504	50858	303117
Victim empowerment	6912	11096	13488	5635	3000	9709	4921	40880	7664	103305
HIV and AIDS	68188	19212	190931	54486	102377	68905	24756	46473	23903	599231
Care & support services to families	4869	4116	90697	3225	3000	5651	5244	8045	36037	160884
Youth development	26828	18867	3663	4647	3000	64841	4334	25531	15942	167653

The total allocation attributable to alcohol in provincial social development budgets would then be R331,3 million.

The national department of social development is primarily responsible for policy development and monitoring of the different welfare services, rather than implementation or service delivery. It is therefore debatable whether or not the allocations in respect of the support for welfare services programme should be included or whether they should be regarded as part of management. We include the allocations because of the relatively large size of the one specifically targeted at substance abuse as it does not seem sensible to omit such a targeted allocation in a paper focusing on alcohol abuse.

The national department is also responsible for social security allocations and, in particular, funding the extensive social grant system. To the counterparts of the sub-programmes included at provincial level we include the allocation for the disability grant on the basis that some disabilities are caused by, or aggravated by, alcohol abuse. We use the same (conservative) proportion as for the services to persons with disabilities, namely 1%.

Table 2. Relevant allocations by national department of social development (Rm)

Sub-programme	
Prog 2: Comprehensive Social Security	
Disability grant	17218
Prog 3: Support for welfare services	
Substance abuse, prevention & rehabilitation	13.3
Crime prevention and support	7.6
Services to persons with disabilities	4.9
Victim empowerment	6
Care and support services to families	6.5
Prog 4: Community development	
HIV and AIDS	61.5
Youth development	5.4

The total attributable to alcohol abuse in the national social development budget would then be R184,2 million.

Health

As for social development, the budget categories for health are standardised across provinces. The match between provincial and national health budgets is, however, much less neat than for social development. The Gauteng budget statement for health notes that some municipalities deliver health services but that for the most part these are funded by the province. This situation is not however, necessarily typical in that Cape Town City's health directorate has a total budget of R618 623 billion for 2009/10 of which only R189 663 billion is funded by the Western Cape province. Further, the City has a budget of about R4,5 billion for substance abuse which it uses to employ a coordinator and operate four treatment centres (Linda Bosman: personal communication). A future study could thus usefully examine alcohol-abuse related expenditures of local government, and perhaps especially the major cities.

Given the strength of the alcohol-health link, the table below shows all programmes of the provincial health departments, but the estimate calcation includes the allocations only for those sub-programmes which we assume to have a clear enough link to alcohol to merit inclusion. The programmes and sub-programmes that are not included are italicised.

Health is one of the areas most obviously affected by alcohol abuse. It is also an area in which there has been quite a lot of research both internationally and in South Africa. Thus Rehm et al (2009b) note that more than 30 three-digit or four-digit codes of the International Classification of Disease (ICD) include alcohol in their name or definition, indicating that alcohol

consumption is a necessary cause. More than 200 ICD-10 three-digit disease codes relate to diseases for which alcohol is recognised as a component cause. Similarly, Doran et al (no date) note that there are causal relationships between the volume of alcohol consumed and more than 60 types of disease and injury, and that most of these relationships are detrimental. Exercises that calculate burden of disease (or disease and injury) and disability-adjusted life years derive estimates for the proportion of different diseases and conditions attributable to alcohol abuse.

There is also a fair amount of research that investigates the link between injuries and alcohol. This includes the ongoing analysis undertaken under the auspices of NIMMS (see, for example, Matzopoulos, 2005).

For this exercise we do not attempt to use these detailed estimates, as that would require that we know the number of patients and associated resources allocated to patients with each and every condition and disease attended to in the public health system. Instead, across all the selected sub-programmes we allocate a general proportion reflecting the overall burden of disease and injury attributable to alcohol, namely 9,2%. We choose this statistic from Rehm et al (2009) who give this estimate for the percentage of all net DALYs attributable to alcohol. (The word "net" indicates that the estimate is adjusted to reflect the positive effect of low to moderate levels of alcohol consumption on conditions such as coronary heart disease, stroke and diabetes mellitus.) Evidence also points to a modest beneficial relationships with coronary heart disease, stroke and diabetes mellitus when a low to moderate average volume of alcohol is consumed and binge drinking is avoided.

Rehm et al's estimate is acknowledged by experts to be an under-estimate of the true burden but, unlike those from many other sources, includes infectious disease attributable to alcohol. Thus Freeman & Parry (2006) report an estimated burden of death and disability due to alcohol of 7,0% overall, 10,5% for males and 3,1% for females. This estimate excludes infectious disease. Rehm et al (2009b) give an estimate of 7,8% for men and 1,4% for women in South Africa if infectious diseases are excluded.

Some readers might argue for a higher proportion to be allocated for particular health sub-programmes. For example, Rehm et al (2009a) argue that alcohol makes a high contribution to HIV and AIDS. We could also argue for higher percentages for the following:

- Coroner services, because of alcohol link to unnatural deaths through accidents and crime
- Emergency transport, because of traffic accidents
- TB hospitals, because of the findings of Rehm et al (2009) in this respect
- Forensic services, because of violent crime link to alcohol.

However, the 9.2% is an overall average. If we allocated a higher percentage for HIV and AIDS, we would need to allocate a smaller percentage than 9.2% for some other services, and we do not have the necessary data to do this.

We allocate the standard percentage across 9.2%. In practice, provinces (such as Western Cape, in particular) with higher levels of alcohol consumption will bear a higher burden of disease and injury from alcohol abuse. Further, in comes cases, there might be specific allocations that reflect the higher burden in a particular province. For example, in respect of ***nutrition,*** we assume that the allocations focus on expectant and new mothers and children and would expect a higher allocation for the Western Cape, in acknowledgement of the exceptionally high rate of foetal alcohol syndrome in this province and how it affects both mothers and children in nutritional terms.

Table 3. Relevant allocations in budgets of provincial departments of health (R'000)

Health	EC	FS	GT	KZN	LM	MP	NC	NW	WC	Total
1 Administration										
2.1 District Management										
2.2 Community Health Clinics	1099023	377088	902365	1668171	1774938	466066	192064	510385	750561	7740661
2.3 Community Health Centres	400741	80552	632866	565740	219349	309871	121997	484238	800149	3615503
2.4 Community-based Services	329638	260079	478777	105259	122807	0	0	7477	117802	1421839
2.5 Other Community Services	82861	0	0	493536	200594	0	41888	55872	73621	948372
2.6 HIV/Aids	480157	274921	932649	1462886	301474	271693	145268	374638	309913	4553599
2.7 Nutrition	66024	13142	37049	108819	23000	24423	5800	13346	18452	310055
2.8 Coroner Services	61214	32855	81584	0	60427	0	20187	23333	1	279601
2.9 District Hospitals	1998553	755204	898987	3722860	1912421	1509163	418195	840798	1245566	13301747
3.1 Emergency Transport	468303	250716	516950	719550	343155	190097	126581	160495	459713	3235560
3.2 Planned Patient Transport										
4.1 General (Regional) Hospitals	2141794	1109385	2780819	3251151	907698	567116	506924	939043	1845237	14049167
4.2 Tuberculosis Hospitals	282325	0	245168	648024	0	98854	9587	0	155621	1439579
4.3 Psychiatric/Mental Hospitals	407608	187125	604381	503087	157849	23596	16210	236385	430171	2566412
4.4 Sub-acute, Step down, Chronic Hospitals	0	0	0	109046	0	0	0	0	111600	220646
4.5 Dental Training Hospitals										
4.5 Other Specialised Services	0	0	29311	0	0	0	0	0	0	29311
5.1 Central Hospital Services	0	971282	4414571	546371	0	0	0	134416	1911422	7978062
5.2 Provincial Tertiary Hospital Services	509429	4800	0	1127255	800210	586374	0	0	0	3028068
6. Health Sciences and Training										
7.1 Laundries	0	67954	115079	0	0	23132	3687	38041	48998	296891
7.2 Engineering										
7.3 Forensic Services	0	0	0	104538	35233	44233	0	0	69176	253180
7.4 Orthotic and Prosthetic Services	29383	11740	0	0	9041	7472	6862	6810	1	71309
7.5 Medicine Trading Account	59776	2000	23001	27528	622634	8288	0	54942	1715	799884

7.6 Internal Charges										
8 Health Facilities Management										

The total attributable to alcohol abuse in the provincial health budgets would then be R6 084,8 million.

The national health department bears minimal responsibility for service delivery, but instead is responsible for overall policy development. However, this sector has conditional grants in which the allocation is made at national level and money then transferred to provinces for spending on service delivery. In particular, large amounts of money are transferred in this way in respect of HIV and AIDS. The national department also allocates relatively substantial money to several non-governmental organisations (NGOs), one of which is Soul City, for implementation of programmes.

Unlike for social development, there is not a neat match between sub-programmes in the national and provincial health budgets. The sub-programmes shown in the table below are those with the closest link to service delivery. Given the predominance of HIV and AIDS in the selected allocations, and the link between HIV and AIDS highlighted above, we use an overall proportion of 11% for these allocations rather than the 9,2% used for health in general in respect of the provinces.

Table 4. Relevant allocations by national department of health (Rm)

Sub-programmes	
Prog 2: Strategic health programmes	
Maternal, child and women's health & nutrition	26.5
HIV and Aids and STIs	3962.2
Communicable diseases	60.9
Non-communicable diseases	620.7
TB Control and management	21.9

The total attributable to alcohol abuse in the national health budget would then be R516,1 million.

Safety and Security

For safety and security we include sub-programmes that involve active policing and investigation. We include the forensic science laboratory despite its being a support service because of the role it might play in linking particular criminal acts with alcohol. As the basis for the percentage attribution, we draw on crime statistics patterns. These are different from patterns in respect of prisoners as some crimes are more likely than others to result in imprisonment.

Official police crime statistics for the period April 2008 to March 2009 shows 36% of reported crime falling in the category of contact crimes (crimes against the person), 7% in the category contact-related (arson and malicious damage to property), 25% property-related, 9% crime "heavily dependent on police action for detection", 22% "other serious crime" and 2% "other crime categories". Within the category of crimes heavily dependent on police action for detection are driving under the influence of alcohol or drugs (4% of the overall total), and drug-related crime (4% of the total). The category "other crime categories" includes culpable homicide and neglect and ill-treatment of children, while "other serious crime" includes theft, commercial crime and shoplifting. (downloaded from http://www.issafrica.org/dynamic/administration/file_manager/file_links/0909CRIMETOTALS.PDF?link_id=24&slink_id=8302&link_type=12&slink_type=13&tmpl_id=3 on 2 November 2009)

Anecdotally, it seems that police attribute exceptionally high proportions of crime to alcohol abuse. Thus in a workshop with 20 priority precinct station commanders in the Western Cape during early 2009, participants agreed that at least 90% of violent crimes were linked to alcohol (Barbara Holtmann, personal communication).

For this exercise, we assume that contact crimes, crimes heavily dependent on police action for detection, and "other crime categories" are most likely to have a link to acohol abuse. For contact crimes, which include murder and sexual offences, we assume 22.5% are related to alcohol abuse. We base this proportion on the 55% of cases in which murder accused are found test positive for alcohol in the blood, but halve this percentage to acknowledge that alcohol will not be the cause of the crime in all these instances. For crimes heavily dependent on police action for detection we assume 50% are related to alcohol abuse. For "other crime categories" we assume the same percentage as for contact crimes. Assuming further that each reported crime takes up the same amount of police resources, we then allocate 24% of the police allocations for alcohol. This final assumption is unrealistic as one assumes that more resources will be used on a murder case than on one of shoplifting. However, we do not have any information on which to base a differential weighting of the different types of cases.

Table 5. Relevant allocations by national department of safety and security (Rm)

Sub-programme	
Prog 2: Visible policing	
2.1 Crime prevention	17269.4
Prog 3: Detective services	
3.1 Crime investigation	6430.4
3.3 Forensic science laboratory	498

The total attributable to alcohol abuse in the national safety and security budget would then be R5 807.4 million.

Community safety and social crime prevention

At provincial level the departments responsible for safety and security have different names, and the programmes and sub-programmes are also diverse. The sub-programmes selected for the exercise are those that focus on social crimes, which we assume to have a particular focus on violence against women and children. Community liaison and related sub-programmes also cover community police forums (CPFs) and the bulk of the funds allocated for these sub-programmes might well go for this purpose. We include the sub-programmes because some of the CPF work will focus on social crime prevention, but the proportion should perhaps be relatively small.

Donson & Marais (2004), in their study of injuries reported to three rural hospitals in the Western Cape, find that 70% of injuries sustained through intimate partner violence were reported to be alcohol-related, and two-thirds of injuries from male-on-female violence more generally. We assume a proportion of 35% for these sub-programmes in acknowledgement of the fact that the focus is not solely on violence against women and children, but that other crimes which are the focus might well have some alcohol link.

For the community liaison sub-programmes we allocate a much smaller 2% to acknowledge that there is likely to be some focus within CPF work on alcohol abuse, but probably not significant focus. The fact that few of the narratives in the provincial budget statements explicitly mention alcohol supports the assumption that there will is not significant focus on this issue. However, the Gauteng budget statement does note that the Ikhaya Lethembu sub-programme provides services for survivors of violence against women and children, and that activities include prevention programme on violence against women and children and a men acting as safety protectors network. The Gauteng sub-programme also provides for schools-based initiatives on substance abuse prevention and promotion of substance abuse prevention through youth desks. The KwaZulu-Natal statement refers to awareness campaigns on substance abuse and violence against women.

Where a sub-programme is likely to deal with both social crime prevention and community liaison we allocate 18,5%, half the sum of 2% and 35%. However, the names of the sub-programmes and the accompanying narratives often do indicate at all cleary what is covered by a sub-programme. The proportions are thus “best guesses”. In the table below, a single asterisk indicates that 2% was used, a double asterisk 18.5%, and a triple asterisk 35%.

Table 6. Relevant allocations in budgets of provincial departments responsible for policing (R'000)

	EC	FS	GT	KZN	LM	MP	NC	NW	WC
Social crime prevention***	1199					2665			
Prog 3: Crime prevention & community liaison**		8860							
Prog 4: Corporate communication, public education & community liaison**		5266							
2.1 Ikhaya lethembu***			14310						
2.2 Public awareness and information*			14000						
2.3 Citizen safety***			10947						
Community liaison**				88460					9800
2.1 Crime prevention***					4548				
2.2 Community relations*					3318				
2.3 Community policing**						6118			
2.2 Crime prevention & community police relations**							4753		
6.2 Transformation & oversight*								7762	
6.3 Liaison & community safety**								7209	
2.2 Crime prevention centre**									40501

The total attributable to alcohol abuse in the provincial community safety budgtets would then be R43,9 million.

Justice and Constitutional Development

For justice and constitutional development we include the lower courts sub-programme as general crimes are tried in these courts.

Leggett (2002) reports that among arrestees in three metros of South Africa, nearly a quarter were arrested for property crimes, 20% for violent crimes, 16% for substance-related crimes, and 40% for 'other' crimes. Illegal immigrants accounted for a large proportion of the last-named category. Half of the arrestees who were surveyed reported that they used alcohol or tobacco. Close on 20% reported that they were under the influence of alcohol at the time of the alleged offence, but Leggett suggests that this might be an exaggeration as some might have claimed this to explain their behaviour. We use a proportion of 10% in acknowledgement of possible exaggeration as well as the fact that their being under the influence of alcohol was not necessarily the cause of their committing the crime.

The public prosecutions sub-programme under the National Prosecuting Authority is included because the focus is on sexual offences and community affairs alongside priority crimes and specialised commercial crime. This sub-programme is, however, also responsible for other issues. Thus the 2009/10 budget document states that in 2007/08 the service finalised 1 043 857 cases, including diversions, while the regional courts dedicated to sexual offences finalised "only" 4 365 cases, the specialised commercial crime unit finalised 3 031 cases, the directorate of special operations resolved 178 investigations and the asset forfeiture unit finalised 223 cases. We assume, somewhat arbitrarily, that 20% of the resources are spent on sexual offences and community affairs, and apply the 25% used previously for victim empowerment to this 20%, getting a resultant proportion of 5% for this sub-programme.

The witness protection programme is included because those covered will include witnesses for domestic violence-related cases. We use a lower percentage of 2% here on the assumption that only a small proportion of those in this programme are involved in domestic violernce-related cases.

Table 7. Relevant allocations by national department of justice and constitutional development (Rm)

Sub-programmes	
Prog 2: Court services	
2.5 Lower courts	2559.3
Prog 4: National Prosecuting Authority	
4.1 Public prosecutions	1532.8
4.2 Witness protection programme	130.1

The total attributable to alcohol abuse in the national justice and constitutional development budget would then be R335,2 million.

Correctional services

In the correctional services budget, unlike for other departments, most programmes consist of only one sub-programme. The corrections programme involves accommodation of inmates. Care provices for inmates' welfare including anti-retrovirals and moral regeneration programmes for staff and inmates. Development provides for education and training of inmates. Social integration aims to prepare inmates for reintegration into ordinary society through probation and parole. We also include the allocation for the public-private partnership whereby private companies provide and manage prisons for the department on the basis that the service provided is similar to that in a programme such as corrections.

All offenders at the two private prisons reportedly have risk assessment forms that indicate the role that alcohol abuse played in the crimes they committed. Unfortunately, however, these forms have not to date been analysed to give the overall profile (Louina le Roux: personal communication).

According to the Estimates of National Expenditure, virtually all sub-programme allocations are based on staff and inmate population. If we base the proportion attributed to alcohol on the proportion of inmates thought to be incarcerated on account of crimes related to alcohol abuse, then the same proportion could arguably be used for all the programmes listed below, as well as for the sub-programme related to prisons run by private companies through public-private partnerships. We use the same logic and approach described above in respect of crime prevention services under social development, but apply the calculations to all prisoners, whether already sentenced or not. The calculation yields an attributable proportion of 38,5%.

One might want to include some amount reflecting expenditure incurred in initiatives to help inmates overcome their addiction. Knowledgeable informants felt that such initiatives were rare. When respondents in Muntingh's small qualitative study of ex-prisoners of Western Cape prisons were asked if they participated in any programmes while they were imprisoned, the pre-release programme run by the department of correctional services was the most frequently identified programme. Eight ex-prisoners said that they attended drug abuse programmes and three reported attending Alcoholics Anonymous. It is not clear if this all happened while they were incarcerated. According to the department, all substance abuse programmes for imprisoned offenders form part of other programmes and do not have a separate budget allocation (Hennie Human: personal communication). The Judicial Inspectorate plans to conduct a full audit of all programmes on offer in correction centres over the next five months, and this audit should provide better information for future estimates (Gideon Morris: personal communication).

Table 8. Relevant allocations by national department of correctional services (Rm)

Sub-programme	
Prog 2: Security	4425.3
Prog 3: Corrections	1112.1
Prog 4: Care	1591.8
Prog 5: Development	448.7
Prog 6: Social reintegration	425.9
Prog 7: Facilities	
7.1 Public private partnership prisons	710.4

The total attributable to alcohol abuse in the national correctional services budget would then be R 3 355,0 million.

Transport

The traffic management allocation under-reports expenditure on local policing to the extent that some municipalities – and particulary the larger ones – have their own metro police forces that are funded from local government budgets.

The traffic-related provincial sub-programmes again fall under differently-named departments across the provinces. Indeed, in some cases the sub-programmes fall within the same department as the community safety sub-programmes, but this is not always the case.

Despite these complications, there is far more standardisation in names of the relevant sub-programmes across provinces than for community safety. Most provinces have sub-programmes named traffic management and road safety education. However, Western Cape has an additional training and development sub-programme that includes training of community volunteers while Gauteng has a road safety project. We include only 25% of the traffic training and development sub-programme in line with non-inclusion of staff development allocations in other departments where it relates to government officials. We assume, from the description, that Western Cape's road safety management sub-programme is similar to the road safety education sub-programme in other provinces.

Several of the provincial budget statements explicitly mention alcohol in relation to traffic management. Eastern Cape notes that two teams have been established for drunken driving and stray animals. Gauteng, too, refers to operations targeting drunk driving. North West list drunken driving among the specific issues to be addressed by the "Operations Jaws of Life" initiative.

The traffic management proportion could perhaps be based on percentage of accidents that are alcohol-related. Freeman & Parry (2006) note that transport fatalities account for 30% of non-natural deaths in South Africa, and there is a strong link with alcohol. Schneider et al (2007) attribute 14,3% of South African DALYs to road traffic injuries. A Western Cape official responsible for traffic law enforcement said that if offences recorded during road blocks were analysed, alcohol-related might account for as little as 1% of the overall total, given large numbers fined for offences such as speeding. However, in road blocks done on Friday nights, the proportion for alcohol might be as high as 30%. She noted further that the three priorities of her department in respect of traffic management were public transport, overloading, and DIC, the acronym used for drunken driving. The narratives from other provinces suggest that others have similar priorities. (Elise Engelbrecht: personal communication). Matzopoulos (2005) reports that the NIMMS records 53% of victims of transport-related deaths as testing positive for blood alcohol. In a study of trauma patients at state hospitals in Cape Town, Port Elizabeth and Durban conducted in 2001, 40% of those injured in traffic accidents had blood alcohol levels above 0,05 (Plüddemann et al, 2005; Charles Parry: personal communication). The World Health Organisation (2000) reports that 37% of male and 18% of female road injury deaths in Australia have been attributed to alcohol, as have 42% of these deaths in the United States of America and 43% in Canada.

These percentages are very diverse, even for a single province. We assume a proportion of 20% for the traffic management sub-programme.

Narratives in the budget documents on road safety education suggest that much of it focuses on schools. This might imply a lower proportion than for traffic management as, although most children will be pedestrians, and pedestrians are more likely than others to have high alcohol content in their blood after accidents, this is less likely to be the case for children. We assign a proportion of only 5% for these budgets. We assign the same proportion for Gauteng's road safety sub-programme.

Table 9. Relevant allocations in budgets of provincial departments responsible for transport & traffic management (R'000)

	EC	FS	GT	KZN	LM	MP	NC	NW	WC
Traffic law enforcement	134963	107019	82051	313320	138056	157745	45724	157883	99249
Road safety education	34167	11864	18202	61688	12878	41148	2502	18795	
Road safety project			38000						
Road safety management									6641
Traffic training & development									10460

The total attributable to alcohol abuse in the provincial traffic management and road safety budgets would then be R262,1 million.

For national government, the department of transport's transport regulation and accident and incident investigation seems relevant. We attribute 5% of the road transport regulation sub-programme on the basis that alcohol will be one among many issues to be regulated, but allocate 20% for the accident and incident investigation sub-programme on the same reasoning as used in respect of traffic management above.

We also include a proportion of the transfer to the Road Traffic Management Corporation, which is funded through the public entity oversight sub-programme. The Corporation's website (http://www.rtmc.co.za/Core-Functions/) lists 10 functional areas, of which two – communication and education and road traffic law enforcement – could include elements related to alcohol abuse. We therefore attribute 5% of the overall transfer to alcohol abuse for the purposes of this exercise.

Table 10. Relevant allocations by national department of transport (Rm)

Sub-programmes	
Prog 3: Transport regulation and accident and incident investigation	
3.1 Road transport regulation	56.7
3.5 Accident & incident investigation	40.1
Prog 6: Public entity oversight & border operations & control	
6.1 Public entity oversight	
Transfer: Road Traffic Management Corporation	83.6

The total attributable to alcohol abuse in the national transport budget would then be R15,0 million.

Liquor regulation

This function always falls within the department responsible for economic development, but this department is variously named across provinces, and the function is paired with different other functions across provinces.

Both revenues and expenditures are involved in respect of liquor regulation as revenue is generated from liquor licences. This revenue is shown for most provinces, although for Eastern Cape it is (presumably incorrectly) recorded as motor vehicle licenses. Gauteng does not show an amount for liquor licences but states that this is captured on the trading account. For other provinces the liquor licence revenue is classified under tax revenue, and generally under the category 'other tax revenue'.

All provinces have a programme for business regulation and governance, in which there is at least one allocation that would include regulation of liquor. In some cases there is a sub-programme specific to liquor regulation. In Eastern Cape (R24,6 million), Free State (R6,5 million), KwaZulu-Natal (R33,1 million) and Western Cape (R20,0 million) allocations include – or consist of – transfers to liquor authorities. In some cases where this is not the case it is because an authority has not yet been established. Mpumalanga does not record any allocation for liquor regulation, but there is a target performance indicator for this function.

Several of the provinces give relatively detailed statistics on liquor licensing, noting, for example, the number of licences applied for, inspections conducted, licenses issued and refused. The Western Cape has extensive discussion of its plans in respect of the new Liquor Act and board, with frequent references to the social costs of alcohol abuse. The province notes plans to establish a fund that will promote "continuing public debate about the scourge of liquor abuse, which costs the Province billions annually in terms of deaths, injury, disability, loss of productivity, poor academic performance, and the cost of treatment of alcoholism, injuries and foetal alcohol syndrome, of which the highest incidence in the world is registered in the Western Cape."

All liquor license revenue is assumed to be attributable to alcohol and the licenses necessitated by the possibility of alcohol abuse because alcohol cannot be regarded as an ordinary commodity such as bread. Where there is a specific sub-programme for regulation of liquor, the full amount is attributed to alcohol. Where this function is undertaken by a sub-programme that also provides for regulation of other activities, 75% is assumed to be attributable to problematic use of alcohol.

Table 11. Relevant allocations and revenues in budgets of provincial departments responsible for liquor regulations (R'000)

Sub-programmes	EC	FS	GT	KZN	LM	MP	NC	NW	WC
Liquor licences	5272	3636		38095	2525	1711	928	2201	17400
Prog 2: Economic development									
2.3 Business regulation and governance	49856								
Prog 4: Economic development									
4.4 Business regulation and governance		12041							
Prog 5: Transversal functions									
Free State Liquor Authority		6500							
Prog 4: Business regulation and governance									
4.4 Liquor regulation			10051						
Prog 4: Business regulation and governance									
4.2 Liquor regulation				40925					
Prog 2: Economic development									
2.6 Business regulation and governance					55406				
Prog 4: Business regulation and governance									
4.3 Regulation services						39579			
4.4 Liquor regulation						0			
Prog 4: Business regulation and governance									
4.3 Liquor regulation							3931		
Prog 4: Business regulation and governance									
4.3 Liquor regulation								4488	
Prog 4: Business regulation and governance									
4.4 Liquor regulation									20000

The total expenditure attributable to alcohol abuse in the provincial liquor regulation budgets would then be R242,8 million. This would be offset against at least R71,8 million gained in revenue through liquor licenses. (The "at least" reminds us that the Gauteng revenue for liquor licences is not included.

Tax revenue

The second column of the table below lists excise duties collected in respect of different types of alcohol at national level. The estimated total incidence, combining both excise duties and VAT, are 23% for wine, 33% for beer and 43% for spirits of the average retail selling price (Cecil Morden: personal communication). Sorghum and traditional beer, and beer powder, has a very low tax incidence with the cents per litre or kilogram remaining unchanged for many years. We therefore include the amount listed under excise duties, but do not bother to calculate a further amount in respect of VAT.

For the others, if we adjust for the fact that VAT represents 14/114, or 12,28%, of the VAT inclusive price, excise duties represent 10,72%, 20,72% and 30,72% for wine, beer and spirits respectively. Applying these percentages to the excise revenue, we can estimate total sales and VAT. This gives us a total of R9 863.7 million in excise duties and R6 121.6 million in VAT.

Table 12. Excise and value-added tax revenues (R'000)

	Excise revenue	Total sales	VAT
Beer	5907600	28511583	3501422
Sorghum beer & flour	40500		
Wine & other fermented beverages	1414300	13193097	1620205
Spirits	2501300	8142253	999925.8
Total	9863700		6121553

Putting it all together

Finally, Table 13 combines all the estimates derived above to present the overall picture of the impact of alcohol abuse on provincial and national government budgets. The table suggests that provincial governments allocate a total of close on R7 billion on account of alcohol abuse, while national government allocates more than R10 billion. Against these amounts, we can offset the revenue gained through value-addted tax on alcohol sales and liquor licenses to arrive at a net expenditure of more than R1 billion. To this must be added the much larger sums that would be included if we did a full economic or social costing that counted the burden imposed on actors beyond government.

Table 13. Summary of alcohol-abuse attributable expenditure and revenue

Provincial expenditure (Rm)		
Total provincial DSD	331.3	
Total provincial DoH	6084.8	
Total provincial community safety	43.9	
Total provincial traffic	262.1	
Total expenditure provincial liquor regulation	242.8	
Total provincial expenditure		6964.9
National expenditure (Rm)		
Total national DSD	184.2	
Total national DoH	516.1	
Total national DCS	3355.0	
Total national DSS	5807.5	
Total national DJ&CS	335.2	
Total national DoT	15.0	
Total national expenditure		10213.0
Provincial revenue		-71.8
National revenue		
Excise	9863.7	
Value-added tax	6121.6	
		-15985.3
Net expenditure		1120.8

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Gauteng Vote 10 – Community Safety
Gauteng Vote 3 – Economic Development

Gauteng Vote 9 - Public Transport, Roads and Works
KwaZulu-Natal Vote 12 - Transport
KwaZulu-Natal Vote 4 – Economic Development
KwaZulu-Natal Vote 9 – Community Safety and Liaison
Limpopo Vote 10 – Safety, Security and Liaison
Limpopo Vote 6 – Economic Development, Environment and Tourism
Limpopo Vote 8 - Roads and Transport
Mpumalanga Vote 11 – Roads and Transport
Mpumalanga Vote 6 – Economic Development & Planning
Mpumalanga Vote 9 – Safety and Security
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North West Vote 6 – Economic Development & Tourism
Northern Cape Vote 3 – Safety and Liaison
Northern Cape Vote 6 – Economic Affairs
Western Cape Vote 10 – Transport & Public Works
Western Cape Vote 12 – Economic Development and Tourism
Western Cape Vote 4 – Community Safety

Informants

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