Estimating the impact of drug policy options

Moving from a criminal to a health-based approach

Final Report

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SENSE PARTNERS
DATA LOGIC ACTION

Executive summary

The criminalisation of drug use isn't working

Our current criminal-justice approach to drugs is not working. Drug use remains widespread and, crucially, the social costs and personal harms are still large. Prohibition and criminalisation may be counterproductive to reducing harm from drugs.

A World Health Organization study demonstrated that international rates of drug use were unrelated to how vigorously drug laws were enforced, concluding that "countries with stringent user-level illegal drug policies did not have lower levels of use than countries with liberal ones."[1]

There is a growing movement around the world to take a health-focused approach to reduce the harm from the problematic use of drugs. This focuses action on prevention, harm reduction and treatment, rather than stigma and prosecution.

The emerging evidence is encouraging: a health-focused approach seems to decrease, and at least does not increase, problematic use. Together with increased investment in education, prevention, harm reduction and treatment, such an approach can translate into a significant reduction in harm.

The international evidence does not suggest a miracle. Drug use, dependency and harm will not disappear. People use drugs (including alcohol) recreationally because it makes them feel good, and, very powerfully, because it can be a temporary reprieve from physical, psychological and emotional pain.

That's why wishing drug use away – by banning it, rather than accepting many people use drugs regardless – doesn't work. Worse, exposing people who use drugs to the criminal world and prisons because of drug use, or not providing sufficient help with complex health and social issues, can lead to further compounding problems. Drug use is widespread across society, but harm can often be concentrated among socially disadvantaged groups.

As Professor Sir Peter Gluckman noted:[2]

> *There has long been an argument that illicit drug use should be looked at as a public health issue, rather than just as a law-and order concern, because the 'war*

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[1] Degenhardt Louisa, Chiu Wai-Tat, Sampson Nancy, Kessler Ronald C, Anthony James C, Angermeyer Matthias, Bruffaerts Ronny, de Giovanni Girolamo, Gureje Oye, Huang Yueqin, Karam Aimee, Kostyuchenko Stanislav, Lepine Jean P, Mora Maria E M, Neumark Yehuda, Ormel J H, Pinto-Meza Alejandra, Posada-Villa José, Stein Dan J, Takeshima Tadashi, Wells J E., 2008. Toward a global view of alcohol, tobacco, cannabis, and cocaine use: findings from the WHO World Mental Health Surveys. PLoS Med. 2008 Jul 1;5(7):141.

[2] Office of the Prime Minister's Chief Science Advisor, 2018. *Using evidence to build a better justice system: The challenge of rising prison costs*, accessed 1 April 2018 at: http://www.pmcsa.org.nz/wp-content/uploads/Using-evidence-to-build-a-better-justice-system.pdf

on drugs' rhetoric has not tackled the social and political determinants that underpin the global and local trade in illicit substances.

A health-based approach to reducing drug harm

This report evaluates the New Zealand Drug Foundation's proposed reforms to how drugs are treated, supported by a boost in funding for education and health interventions. The Foundation's model policy reform is known as Whakawātea te Huarahi.[3] The Foundation regards these reforms as crucial steps to its 'Free from Drug Harm' vision. This report is commissioned by the New Zealand Drug Foundation, the New Zealand Needle Exchange Programme and Matua Raki.

This health-based approach follows in the footsteps of a growing number of countries.

The proposals by the Foundation are to:

- decriminalise the use and possession of all illicit drugs but to keep their supply illegal
- legalise the use *and* supply of cannabis
- boost harm reduction and treatment services and drug education.

Proposed drug policies would be net beneficial

In summary, the proposals reduce personal and social harm. Their benefits will outweigh the additional cost of increased drug harm education, prevention, harm reduction and treatment services that the Foundation argues should go hand in hand with a reform of drug legislation.

Decriminalisation of use and possession of all drugs

The use and possession of all illicit drugs would be decriminalised, under the Drug Foundation proposal. People found using drugs, or in possession of drugs for personal use, would be cautioned and offered information, or required to attend a brief health intervention. Supply (importing, manufacturing and selling the drugs) would remain illegal.

Decriminalisation would make society better off by $34m-$83m a year, primarily through reduced criminal justice costs ($27m-$46m a year).

There would be additional costs in the health sector as people are referred to health providers rather than the justice system. This is part of the proposal to boost investment in education, prevention, harm reduction and drug treatment, as an integral part of shifting to a health-based approach, and address current unmet need. As discussed later, this boost could deliver significant benefits.

[3] NZ Drug Foundation, 2017. *Whakawātea te Huarahi: A model drug law to 2020 and beyond*, accessed 30 March 2018 at https://www.drugfoundation.org.nz/policy-and-advocacy/drug-law-reform/

Decriminalisation should also result in broader social benefits, such as better labour market outcomes for people who avoid convictions, and better life outcomes for their children. These are harder to quantify and directly attribute, but no less important.

The Drug Foundation's proposal is similar to Portugal's approach, which decriminalised the use of all drugs in 2001 and boosted health funding. Thus far, studies indicate good success "with reductions in problematic use, drug related harms and criminal justice system overcrowding".[4]

Another effect in Portugal is that more people who use drugs are accessing health services and police are devoting greater resources to reducing supply. The legal change in Portugal was perhaps smaller than it appeared on paper, as it codified what was already happening in practice.[5] In New Zealand, too, convictions for drug possession and use are trending lower, as police have deprioritised these offences.

Legalisation of the use and supply of cannabis

The Drug Foundation proposes all three parts of their model be implemented. But legal regulation of cannabis could proceed instead of or as well as decriminalisation of other drugs, so we assess their impacts separately.

In the proposed model, all cannabis use and supply offences would be removed from the criminal justice system, and the growing and supply of cannabis would also be allowed, but under strict regulations.

Regulations would control the quality and safety of cannabis offered for sale, and who it is sold to. There is no reliable data on the effect of standardising cannabis quality on harm to users, so we have not separately estimated the benefits of quality regulation, relative to the costs of testing, monitoring and enforcement.

The regulatory costs of licensing and monitoring would be around $5m a year, paid for from license fees for approved retailers and manufacturers.

Criminal justice costs would fall by an estimated $6m-$13m per year, as fewer people go to court and prison for cannabis possession and supply offences. The change in setting implies additional referrals to community or residential treatment services, covered as part of the proposed boost in drug education, harm reduction and treatment services (see below).

Based on these effects, New Zealand would be better off by $10m-$53m a year as a result of legalisation.

The proposals would also bring supply (growing and selling) within the formal economy. The benefit of this is that it reduces a source of finance for organised crime. It also generates tax

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[4] Hughes C E, Stevens A., 2010. What can we learn from the Portuguese decriminalization of illicit drugs. British Journal of Criminology, 50(6):999–1022

[5] Laqueur H., 2014. "Uses and Abuses of Drug Decriminalization in Portugal", *Law & Society Inquiry*

revenues of $185m-$240m per year. If these taxes are put towards drug harm reduction policies and socially beneficial use, then New Zealand will be better off. [6]

Several states in the US (Colorado, Washington, Oregon, Alaska and Nevada) have adopted a similar approach, and Canada has also developed policy along the same lines.

The emerging evidence from the US suggests that, while recreational use rises after legalisation, the proportion of dependent use does not increase materially when accompanied by good education and prevention programmes.[7] However, there is disagreement on this – some scholars suggest that impacts of legalisation are uncertain and note mixed results in some jurisdictions.[8]

Data to date does not show any significant change in cannabis use by youth in Colorado, but an increase in Washington – reiterating the importance of education and prevention programmes.[9] There may also be benefits, such as reduced use of other drugs and connection with criminal activity though they are also tentative at this point.[10] Legalisation in the US is still too recent to fully assess the long-term impacts.

This mixed evidence means we must take a robust approach to measuring and monitoring drug use and likely harm, and respond with regulatory and other interventions as required.

More drug education, harm reduction, and treatment services

The proposals do not pretend drugs do not cause harm to individuals and communities. Instead the proposals argue that harm, or the risk of harm, is better addressed by prevention, education, harm reduction and treatment, not stigmatisation and criminalisation.

Drug education, harm reduction, and treatment services are available in New Zealand, but the amount is insufficient given current patterns of drug use, harm and need for services. There is already a shortfall of funding and staff, and funding has not kept pace with population growth driven demand. The Foundation has estimated funding for harm reduction and addiction treatment services needs to increase by $150m per year and drug education by $9m per year.

Such an increase in funding for prevention and treatment is a logical companion policy to decriminalisation and legalisation – not just to reduce existing harm, but also as a way to mitigate the risk that the prevalence of drug use increases more than what has been seen internationally following decriminalisation or legalisation.

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6 The conventional approach is to treat taxes as a transfer, rather than a benefit. In this case, we have identified the tax revenues as it is critical to have funds to implement policy, but do not include it as a social benefit.

7 Reinarman Craig, Cohen Peter D A, Kaal Hendrien L., 2004. The limited relevance of drug policy: cannabis in Amsterdam and in San Francisco. Am J Public Health, 94(5):836–842.

8 Dills AK, Goffard S, Miron J., 2017. *The Effects of Marijuana Liberalizations: Evidence from Monitoring the Future*. Cambridge, MA: National Bureau of Economic Research

9 Cerdá M., Wall M. Feng, T, et al, 2017. "Association of State Recreational Marijuana Laws With Adolescent Marijuana Use", *JAMA Pediatrics*, Accessed 27 February 2018 at https://jamanetwork.com/journals/jamapediatrics/article-abstract/2593707

10 Drug Policy Alliance, 2018. *From Prohibition to Progress: A Status Report on Marijuana Legalization,* Accessed 27 February 2018 at drugpolicy.org/legalization-status-report

The Drug Foundation argues that, given unmet need, such increase in health spending needs to happen now, regardless of other policy.

Conservatively, we estimate that $150m in increased health and harm reduction spending will deliver wider societal benefits (benefits to individuals, community and government) of $225m, and a $9m increase in education spending will deliver social benefits of $19m. This is based on various meta-studies of drug treatment and prevention programmes around the world. There is, however, a degree of uncertainty around these estimates, as explained later in this report.

Conclusions

Based on the international evidence, all proposals here, by themselves or in combination, will reduce harm from current levels. These benefits outweigh the costs.

These estimates exclude the important, but hard to quantify, benefits to individuals and their families (and the wider community), from avoiding convictions (such as better job prospects) and contact with the black market.

While social benefits are important, they are difficult to measure, they may be realised in different timeframes to investments, and are more open to estimation errors. Governments also make a considered decision on current fiscal settings. Political reality dictates that additional spending needs to be funded.

Our analysis suggests that decriminalisation has a marginal positive impact by reducing criminal justice costs, but not enough to fund current need for addiction services. Cannabis legalisation however has the potential to raise significant tax revenue, which can fund expanded addiction services as well as other spending priorities. Cannabis legalisation has the benefit of a tax base to increase drug education, harm reduction and treatment.

FIGURE 1: IMPACT OF PROPOSED POLICIES ON GOVERNMENT FINANCES & SOCIETY

($ MILLIONS, *CONSERVATIVE SCENARIO ONLY)*

Conservative case	Government spending change	Government revenue change	**Net government impact**	Wider economic & social impact	**Net societal impact**
Without health intervention policy					
Decriminalisation only	-15	0	**15**	19	**34**
Legalisation of cannabis only	9	191	**182**	19	**10**
Decriminalisation & legalisation of cannabis	-15	191	**206**	19	**34**
With health intervention policy ($150m increase in addiction services)					
Decriminalisation only	132	0	**-132**	244	**112**
Legalisation of cannabis only	158	191	**33**	244	**86**
Decriminalisation & legalisation of cannabis	158	191	**33**	244	**86**

SOURCE: SENSE PARTNERS

In our conservative base case:

- **Decriminalisation** of all drugs would result in a net societal gain of $34m, with a net $15m gain to the government mainly from reduced criminal justice costs.
- If accompanied by the proposed $150m a year health package, the government would need to raise $132m from other sources or reduce spending elsewhere. Societal benefit would be substantial at $112m a year.
- **Legalisation of cannabis** would result in a modest societal gain of around $10m a year.
- Not counted in this is the increase in tax and licensing revenue of $191m a year. If accompanied by the proposed health package, resulting government spending increases will be more than offset by tax revenue gains, with around $33m remaining for other use. Societal gains are significant at $86m a year.
- The **fiscal situation** looks best with cannabis legalisation. Without it, harm reduction policies cannot be expanded to fulfil unmet need without raising taxes or cutting spending elsewhere.

1. Introduction

The New Zealand Drug Foundation, along with the New Zealand Needle Exchange Programme and Matua Raki, has commissioned Sense Partners to quantify the effect of their model drug policy: Whakawātea te Huarahi.[3] We were asked to look into the individual effects of decriminalising the possession and use of all drugs and legalising the supply and use of cannabis.

Such a policy would go hand-in-hand with increased resources for education about the risks and safer use of drugs, and for other drug prevention, harm reduction and treatment services.

1.1. Prohibition has failed

The prohibition and criminalisation of drugs has failed as an approach to deter drug use and reduce drug harm.

As the Law Commission review of drug laws noted in 2011: "... as a matter of principle, we cannot see how the purposes and principles of sentencing could ever be met by the use of imprisonment for personal use offending ... Individuals who receive criminal convictions as a result of their possession or use often experience levels of harm quite disproportionate to their offending."

Countries around the world are moving towards a more health-based approach. Portugal is a clear example, and others have followed in smaller steps or are exploring ways to do this. A number of states in the US have legalised and regulated cannabis, plus increased response programmes, with encouraging early evidence of no increase in harmful use leading to emergency department visits[11], as well as increased fiscal revenue[12].

The intent of the policy changes is to reduce the harms associated with drug use. Drug use can lead to significant harm. The 2016 Drug Harm Index (DHI) published by the Ministry of Health estimated total harm and intervention costs of $1.8b in 2015.

These costs are present despite the criminal justice approach. That is, the current approach of prohibition and threat of conviction does not prevent widespread drug use and harm to users and society.

The DHI looks only at the personal and social costs of drug use. It puts aside any benefits individuals may enjoy from drug use. As our focus is on harm reduction, we use the Drug Harm Index as the basis for our analysis – which focuses on the marginal changes in use. We attempt to quantify the intervention costs and harm reductions as a result of the policy proposals.

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[11] Monte A. et al, 2016. Letter to the editor, New England Journal of Medicine 2016; 374:797-798

[12] Drug Policy Alliance, 2018. *From Prohibition to Progress: A Status Report on Marijuana Legalization What We Know About Marijuana Legalization in Eight States and Washington, D.C.* accessed on 30 March 2018 at http://www.drugpolicy.org/sites/default/files/dpa_marijuana_legalization_report_feb14_2018_0.pdf

TABLE 1: DRUG HARM AND INTERVENTION COSTS IN 2014/15

Drug group	*Personal harm $(m)*	*Community harm $(m)*	*Total harm $(m)*	*Intervention cost $(m)*	*Total social cost $(m)*
Amphetamine-type stimulants	256.4	91.4	347.8	16.4	364.2
Cannabinoids	256.4	720.3	976.7	305.9	1,282.6
Hallucinogenic and psychedelic drugs	8.0	9.0	17.0	5.3	22.3
Opioid and sedative drugs	80.1	72.0	152.1	23.8	175.9
Total	**601.0**	**892.7**	**1,493.7**	**351.4**	**1,845.0**

Source: Ministry of Health 2016 Drug Harm Index

The personal harms quantified in Table 1 largely relate to deaths and poorer health from problematic drug use. Community harm captures the impact on friends and family of people who use drugs costed at their willingness to pay for harm reduction services ($438m) and acquisitive crimes ($140m). It also includes estimates of investment in organised crime ($70m) and reduced tax revenue due to black market activity ($245m).[13]

The intervention costs are those borne by government for education (although currently there is no coordinated national approach to drug education), treatment and enforcement.

The widespread use of cannabis explains why it is the main contributor to the high social cost. The DHI estimated some 279,400 people use cannabis, with a (relatively small) social cost per person of $4,500, but nearly $50,000 per dependent person. Other drugs, such as amphetamines and opioids, have fewer casual or dependent users, but create much greater harms.

TABLE 2: NUMBER OF USERS (ADJUSTED FOR POLYDRUG USE) AND COST PER USER

Drug group	*Estimated number of users*			*Total social cost ($m)*	*Estimated cost per user ($)**	
	Dependent	*Casual*	*Total*		*Dependent users*	*All users*
Amphetamine-type stimulants	1,400	24,300	25,700	364	260,000	14,000
Cannabinoids	26,000	253,300	279,400	1,283	49,500	4,500
Hallucinogenic and psychedelic drugs	500	53,300	53,700	22	44,500	500
Opioid and sedative drugs	2,000	27,200	29,200	176	88,000	6,000
Total**	**29,900**	**358,100**	**388,000**	**1,845**	**61,500**	**5,000**

[13] The latter two amounts are not 'changes in resource use' or 'resource costs' in the way they are usually used in cost benefit analysis. In the DHI they are normatively treated as costs to society, on the stark assumption that all these resources end up being used to harmful ends, whereas if in the hands of government or other legitimate persons, they would be used in socially-approved, valuable ways.

Source: Ministry of Health 2016 Drug Harm Index (*rounded to the nearest $500. **does not sum to components, due to adjustment for polydrug use).

1.2. Our attitudes and practices have changed

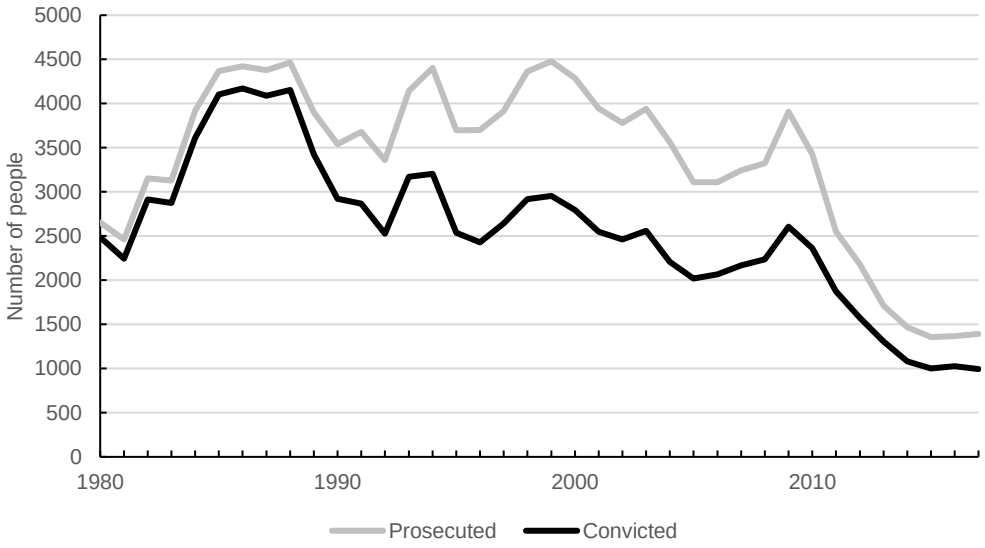
The time is right for New Zealand to look into our drug rules. Public opinion is shifting, as has the way that the criminal justice sector is dealing with drug offences. The government is also rethinking the appropriate use and cost-effectiveness of imprisonment.

A 2018 survey commissioned by the New Zealand Drug Foundation found that two thirds of respondents thought cannabis should be legalised or decriminalised, while a third were opposed.[14] The support was even higher for medical use than recreational use.

This attitude seems to be reflected in how the police enforces the law around drug use. Over the last two decades the number of charges and convictions for drug use and possession offences have fallen by two thirds (Figure 2). Relative to the population, charges and convictions have fallen by around 70% over the last two decades.

FIGURE 2: DRUG USE, POSSESSION AND UTENSIL* PROSECUTIONS AND CONVICTIONS

Number of people



Source: Statistics New Zealand (*Proxied by 'other' category of illicit drug offences, which we understand to be largely related to utensils.)

There are other signs that the justice system is looking for better solutions than prosecution. It recognises there are better ways than imprisonment to address alcohol and drug problems and reduce associated offending. The Alcohol and Other Drug Treatment (AODT) Court – a

[14] NZ Drug Foundation, 2018. *New Survey results show legal cannabis a real possibility.* Media release accessed 24 July 2018 at: https://www.drugfoundation.org.nz/news-media-and-events/new-survey-results-show-legal-cannabis-a-real-possibility/

pilot that has been running since 2011 – offers a court-supervised therapeutic programme instead of prison, which has delivered promising results.[15]

Community and Iwi justice panels operating around the country are other ways to divert people from the criminal system for minor drug offences. These seek to address the factors that contribute to offending and make referrals to community alcohol and drug services.

Relatively recent and innovative New Zealand legislation to regulate the availability of psychoactive substances also suggest an attempt to introduce a more mature, and health-based approach to protect the health of, and minimise harm, to individuals who use such drugs.

The Psychoactive Substances Act 2013 had the stated purpose to allow specifically-licensed retailers to sell approved psychoactive substances, which are shown to pose low risk of harm. Last minute changes to the legislation meant that no products have yet been, nor are likely to be approved, but the risk-based approach to regulating supply was conceptually good.

1.3. The rest of the world is moving on

Decriminalisation is permissible within international conventions and international policy evolution is moving in this direction. The timeline of drug policy reform below illustrates the gathering momentum in decriminalisation.

At least 15 countries have now decriminalised the personal possession of all drugs and over 30 have some form of decriminalisation.[16] For example, Portugal decriminalised all drug use in 2001. In the USA, eight states have legalised cannabis. Canada began selling cannabis for non-medical personal use on October 17, 2018. We should learn from the experience of those who have pursued law reform and adapt those policies to fit the New Zealand context.

The following figure summarises the key events in global drug policy directions. Bans and criminal approaches began in the late 1800s. The trend continued to escalate with the US declaring a "war on drugs" in 1971 and peaked around 1998, when a special session on drug abuse committed the world to be drug free by 2008.

Since then the tide has turned with more countries moving towards decriminalisation and legalisation. By 2016, the UN had formally published views recommending decriminalisation of drug use and possession.

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[15] Preliminary results suggested a 15% reduction in reoffending rates, and a reduction of demand for prison beds of 60, equating to a net saving of $1.6m pa (including the marginal cost of building prisons) or a net cost of $1.3m pa if only accounting for the day to day running costs of prisons, after accounting for the significantly higher health related costs. https://www.justice.govt.nz/assets/Documents/Publications/Report-back-on-the-Alcohol-and-Other-Drug-Treatment-Court-Pilot-and-other-AOD-related-Initiatives-Paper.pdf

[16] Eastwood N., Fox E. & Rosmarin A., 2016. *A quiet revolution: drug decriminalisation across the globe*, Release, accessed 20 April 2018 at: https://www.release.org.uk/sites/default/files/pdf/publications/A%20Quiet%20Revolution%20-%20Decriminalisation%20Across%20the%20Globe.pdf

FIGURE 3: KEY MILESTONES IN APPROACHES TO DRUG POLICY AROUND THE WORLD

Key milestones in approaches to drug policy

Period	Criminalise drugs	Decriminalise/legalise	Countries/groups
1884	Ban cannabis		Egypt
1887	Many states begin banning cocaine		USA
1908	Prohibits opium imports. China commits to eliminate domestic use within a decade		China, UK, USA
1912	The Hague International Opium Convention: control international trade in opium, morphine, cocaine & heroin		China, France, Germany, Italy, Japan, the Netherlands, Persia, Portugal, Russia, Sian, UK & overseas territories
1925-1936	Geneva Opium Conventions: Cannabis trade put under international control		International
1948	Death penalty or drug related offences		China
1952	Death penalty or drug related offences		Malaysia
1959	Death penalty or drug related offences		Iran
1961	Drug prohibition in international law		UN
1971	War on drugs		USA
1971	Widen the scope of international prohibition to psychotropic drugs		UN
1975	Death penalty or drug related offences		Singapore
1976		De facto decriminalisation of cannabis possession and supply	Netherlands
1980's		Introduce harm reduction measures, prove beneficial to users & society	Switzerland, Germany, Denmark, Spain & Netherlands
1987	Death penalty or drug related offences		Saudi Arabia
1999	Death penalty or drug related offences		Vietnam
1988	Provision & punishment guidelines for states to adopt		UN
1990	Special session on drug abuse		UN
1991	UNODC (originally International Drug Control Programme) established		UN
1998	Special session on drug abuse: commit to drug free world by 2008		UN
2001		Decriminalises possession of drugs for personal use	Portugal
2009		Decriminalises possession of drugs for personal use	Czech republic, Argentina, Mexico
2011		World leaders demand end to war on drugs	Global commission on drug policy
2012		Withdraws from UN Single Convention	Bolivia
2012		Reintroduces decriminalisation of drug possession, withdrawn 3 years earlier	Colombia
2012, 2014		Colorado, Washington, Alaska, Oregon & Washington D.C. first jurisdictions to establish legally regulated cannabis.	USA
2013		Legalise cannabis from 2016	Uruguay
2015		Decriminalises possession of cannabis for personal & religious use	Jamaica
2015, 2016		Papers recommending decriminalisation of drug use and possession	UN
2016		Legally regulated cannabis	California
2018		Legally regulated cannabis	Canada

Source: Global Commission on Drug Policy, 2016. *Advancing Drug Policy Reform: A New Approach to Decriminalization* and updated with recent changes from media and other reports.

2. Policy choices

The key policy proposals being evaluated in this report are to move away from a criminal justice approach to protect the health of, and minimise harm from drug use to, individuals:

- Modernise legislation, to put the focus on preventing and reducing harm from drug use, rather than criminalisation, through:
    - Decriminalisation of possession and use of illicit drugs (with supply remaining a criminal offence), and
    - Legalisation of possession, use, and supply of cannabis.
- Boost funding for effective education and health programmes, to prevent and reduce harm from use of drugs. The New Zealand Drug Foundation proposes increasing funding for health services by $150m a year, and for education services by $9m a year.

2.1. Free from drug harm

The New Zealand Drug Foundation's vision statement is *Aotearoa New Zealand free from drug harm*.

Its proposals seek to promote this vision, and set out to achieve five goals:

- minimise the harm from drug use to individuals, whānau, and the community
- promote justice and human rights with penalties proportionate to harm caused
- support safer communities
- actively promote equity for Māori
- be evidence-based, effective and give value for money.

2.2. The current policy is counterproductive

The current law in New Zealand prohibits the use of drugs ranging from cannabis to methamphetamine and other powerful and potentially harmful substances, with a range of criminal justice sanctions (see table). The current classification does not accurately reflect harm as measured by a multicriteria approach used internationally.

A 2010 report found that alcohol was the drug associated with the most harm overall, yet this is legal.[17] Magic mushrooms and ecstasy had very low harm scores in the 2010 study but are scheduled as Class A and B respectively. The classifications in the Act do not consistently correspond to the harm associated with use of each substance.

[17] Nutt DJ, King LA, Phillips LD., 2010. "Drug harms in the UK: a multicriteria decision analysis", *The Lancet*, 376:1558–65.

TABLE 3: EXAMPLES OF SANCTIONS UNDER THE MISUSE OF DRUGS ACT 1975

			Maximum sentence for some offences	
	Risk	Examples	Use/possession	Supply/manufacture
Class A	Very high	Meth, cocaine, heroin, LSD	6 months prison $1,000 fine	Life imprisonment
Class B	High	Opium, ecstasy, cannabis oil	3 months prison $500 fine	14 years prison
Class C	Moderate	Cannabis, codeine	3 months prison $500 fine	8 years prison $1,000 fine

Source: Misuse of Drugs Act 1975

Despite these prohibitions and sanctions, we have some of the highest drug use rates in the world reported by the UNODC.[18]

In 2013, one in nine people 15 years or over (11%) were estimated to use cannabis, and a third of those reported using cannabis at least weekly. Of cannabis users, 6 percent reported harmful effects on work, study or employment, and 8 percent reported harmful effects on mental health.

A smaller group use other illicit drugs. For example, in 2015/16 one in 100 (1%) of adults reported using amphetamines in the past year[19], and in 2012/13, 1 in 500 adults (0.2%) reported using amphetamines at least once a month.[20]

Criminalising drug use is not effective in deterring people from using drugs, or from the harms use may contribute to for individuals and society. Criminalisation may also be counterproductive, by making it a moral rather than a health issue. We risk not paying enough attention to other, more productive ways to prevent, reduce, or treat the harms caused by using drugs:

- around 50,000 people want help every year to reduce their alcohol and drug use, but don't get it[21]
- 16.5 percent of people who want help but don't receive it say the reason is fear of the law or police[22]
- New Zealand has no dedicated large-scale drug education programme

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18 United Nations Office on Drugs and Crime, 2014. *World Drug Report 2014*. UNODC: Vienna

19 Ministry of Health, 2016. *Amphetamine use 2015/16: New Zealand Health Survey*, https://www.health.govt.nz/publication/amphetamine-use-2015-16-new-zealand-health-survey

20 Ministry of Health, 2013. *Amphetamine use 2012/13: New Zealand Health Survey*, https://www.health.govt.nz/publication/amphetamine-use-2012-13-key-findings-new-zealand-health-survey

21 National Committee for Addition Treatment, 2011. *Addiction treatment is everybody's business: where to from here?* http://ncat.org.nz/wp-content/uploads/addiction-treatment-is-everybodys-business.pdf

22 Ministry of Health, 2010. Drug use in New Zealand: key results of the 2007/08 New Zealand Alcohol and Drug Use Survey, pg. 35, https://www.health.govt.nz/system/files/documents/publications/drug-use-in-nz-v2-jan2010.pdf

- manufacture and trade estimated to be worth $630m is driven underground, controlled by and financing criminal activity.

Instead, police, courts, and corrections resources are tied up with enforcing the law, and people end up with criminal records and fines or worse. Criminal convictions can harm people's chances for work, expose them to criminals, and do little to address the harm from using drugs. We also miss an early opportunity to help.

2.3. Proposal 1: Decriminalise drug use

One of the proposals for change we evaluate is the decriminalisation of use and possession for personal use of Class A-C drugs covered by the Misuse of Drugs Act 1975.

How it would work

- If police come across a person in possession, they would issue a caution notice, and give the person information on how to get help, education and access to harm reduction material.
- After a specified number of cautions depending on the class of drug, the person would be required to attend a brief intervention session or else face prosecution:
    - Class A drugs possession – must attend brief intervention at first caution
    - Class B – must attend brief intervention at second caution
    - Class C – must attend brief intervention on third caution
    - Class B and C – option to attend brief intervention on the first caution.
- A brief intervention is a preliminary screening and discussion with the person, run by a community alcohol and drug provider, about the risks around the drug use and whether they would benefit from assessment and treatment. They may then be referred for non-compulsory treatment.
- In the rare case that goes to prosecution, penalties would be restricted to a low fine or a further offer of non-compulsory treatment, but not imprisonment.
- Possession of drug utensils would no longer be a crime. (Some utensils, like sterile needles, syringes and vaporisers can reduce harm to health, and safe products should be more freely available.)

When people are found using, or possessing for personal use, drugs they would not face criminal prosecution, but instead would be cautioned, given information, provided a quick

health assessment, and offered a referral to appropriate type of care, if needed. This is the mandatory cautioning scheme that was recommended by the Law Commission in 2011.[23]

This proposal would:

- remove minor drug offences from the criminal justice system
- improve access to treatment and other ways to reduce harm.

This approach is very similar to the model used in Portugal since 2001. Under that model, use of all drugs was decriminalised, and people apprehended are referred to a 'dissuasion commission', a group of lay professionals who assess needs and recommend treatment. Health funding was also increased. This has resulted in a reduction in drug-related harm and increased treatment. Drug use continues to be low compared to other European countries.

2.4. Proposal 2: legalise use and supply of cannabis

The second proposal we evaluate in this report is the New Zealand Drug Foundation's proposal to create a legal, but regulated, market for the use and supply of cannabis.

This proposal recognises that cannabis poses a low risk of harm for most individuals that use it casually (as estimated in the DHI), and that the approach to managing risk should be proportionate.

But this proposal also recognises that using cannabis may cause harm:

- people who use cannabis on a chronic daily basis report high levels of anxiety, depression, fatigue, and low motivation (though questions remain about causality)
- young people have an elevated risk of developing psychosis and early cannabis use may also affect IQ
- risk of people unknowingly consuming much stronger or adulterated product.

Therefore, this option would:

- remove cannabis use and supply offences from the criminal justice system
- regulate access to and the safety of cannabis offered for sale
- provide greater focus on harm reduction initiatives, including for young people
- bring black-market revenues into the formal economy, reducing a source of finance for organised crime
- provide tax revenues, which can help fund additional prevention and treatment.

With this proposal, the New Zealand Dug Foundation seeks to position the management of cannabis use in a way that best reflects its general risk and minimises the social and health

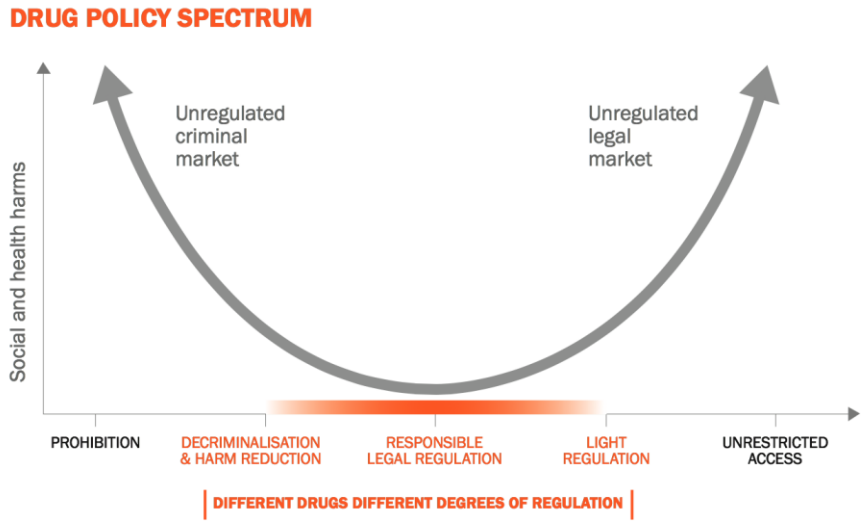
[23] Law Commission, 2011. Controlling and regulating drugs – a review of the Misuse of Drugs Act, R122, http://www.lawcom.govt.nz/our-projects/misuse-drugs-act-1975

harms. The following figure (Figure 4) from the Global Commission on Drug Policy illustrates well how regulation can reduce harm, compared to an unregulated legal market and supply through a criminal market, which by definition is not regulated (other than being prohibited).

How it would work

- Use, possession, and growing of cannabis for personal use would be legal, as would be the growing and selling of cannabis in a strictly regulated environment.
- Regulations could be established under a stand-alone Cannabis Act, like in Canada, or be folded into the Psychoactive Substances Act 2013, which regulates "the availability of psychoactive substances to protect the health of, and minimise harm to, individuals who use psychoactive substances."
- A government regulatory body would approve and license all commercial growers/suppliers according to strict rules, including around product safety, security, and wholesale to retailers.
- Cannabis would be sold by licensed premises for consumption at home. As currently under the Psychoactive Substances Act, there would be restrictions, aimed at protecting the health of, and minimising harm to, individuals.
- Sale of cannabis would be subject to a levy, linked to potency (unit of intoxication), to reflect the higher risk associated with higher potency product, and the associated prevention and treatment costs.
- Restrictions for retailers include age (not to under 18s), what other products may be sold (e.g. no tobacco or alcohol), where the premises may be located (e.g. not near schools), and secure storage requirements.
- Other health-related requirements would include retail workers being trained in detecting signs of potential dependency issues, and the display of public health information and advice on moderating use and how to access help for drug-use issues.
- There would also be controls on advertising, as already set out in the Psychoactive Substances Act, and clear requirements for packaging, labelling, and health warnings.
- Licenses for suppliers and retailers (and related services such as testing and inspections) would be subject to fees. These would be set to recover the cost of administration, monitoring and enforcement.

FIGURE 4: TRADE-OFF BETWEEN REGULATION AND HARM



Source: Global Commission on Drug Policy (2014), Taking Control: Pathways to Drug Policies That Work.

2.5. Proposal 3: boost drug education and health interventions

The New Zealand Drug Foundation proposes increasing efforts on drug education and health interventions, to prevent and reduce harm from drug use. This proposal involves boosting:

- drug education and other prevention spending by $9m per year
- treatment and harm reduction spending by $150m per year.

This proposal is an integral part of shifting to a health-based approach to addressing the risk of harm from drug use. However, given widespread drug use regardless of the law, the large harm, and the scale of unmet demand for treatment in the community, the New Zealand Drug Foundation sees an urgent need to boost spending regardless of changes in the law.

Drug education

The New Zealand Drug Foundation's plan for drug education builds on local work and international experience and evidence. Education initiatives would develop critical thinking skills relating to wellbeing, decision making, and substance use, and help young people to develop the emotional skills to better deal with drug and related issues.

Currently there is no large scale and co-ordinated drug education programme. Our experience with alcohol and tobacco education shows that education plays an important part in the wider approach to reducing harm.

The projects identified by the New Zealand Drug Foundation will cost around $9m a year. By way of context Colorado – which is similar in land area and population size to New Zealand –

increased drug education funding by US$9m per year when it legalised cannabis. Adjusted for population and purchasing power parity, that equates to NZ$11.3m per year.

Drug prevention, harm reduction and treatment services

The New Zealand Drug Foundation proposes health spending on drug prevention, harm reduction and treatment to increase by $150m a year. This is a doubling of the current spending on such services outside of the prison system.

Currently, New Zealand spends $150m, providing access to around 51,000 people who use drugs and alcohol according to Ministry of Health data. The majority is community-based, while a small proportion access residential services (taking up $19m of the spend).

Demand has increased rapidly over recent years – the number of people presenting to mental health and addiction services increased by 73% in the last three years, while funding has increased by 40%.[24] There are nearly 50,000 alcohol and drug users every year who want but do not receive treatment.[21] At a current average cost per person of $3,000, this suggests a budget to fulfil unmet need in the order of $150m per year.

The proposal assumes that the $150m boost would cover the cost of the brief interventions, treatment in the community rather than in prison, and an increased investment in health interventions – including the provision of more low-threshold community treatment options, and a significant investment in workforce development. In other words, it includes services for the 3,750 people per year who are currently charged with drug or utensil possession related issues (5,000 proceedings[25]), who would now enter the health system if needed following police contact, rather than courts.

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[24] Mental Health Commissioner, 2018. *New Zealand's mental health and addiction services: The monitoring and advocacy repot of the Mental Health Commissioner, accessed 20 March 2018 at:* http://www.hdc.org.nz/media/4688/mental-health-commissioners-monitoring-and-advocacy-report-2018.pdf

[25] New Zealand Police, Database of *Proceedings (offender demographics)*, accessed 30 March 2018 at: http://www.police.govt.nz/about-us/publications-statistics/data-and-statistics/policedatanz/proceedings-offender-demographics

3. Methods and results

To evaluate the three New Zealand Drug Foundation proposals, we start with the Drug Harm Index estimates of sales, users, harm, and intervention costs, and consider the impact of proposals on:

- demand for drugs – for example, because of changes in price, buyer convenience, and 'social license' and elimination of risk of prosecution
- personal and community harm, as a result of, for example:
    - a change in the volume of harmful use
    - the impact of education and treatment services
    - changes in the safety of product
- supply
- use and costs of services and the cost of regulation/implementation.

These impacts are, where possible, based on findings from credible evaluations of comparable policy changes internationally. We take a conservative approach, erring on the side of higher costs and lower benefits, to reflect considerable uncertainty.

Estimates here are based on how the current state would change under the policy proposals if they happened instantly, rather than also dealing with the complexities of timing and other issues. While our analysis would allow for projections into the future, these would simply compound the uncertainties, and 'blow up' figures without adding insight.

3.1. Results: decriminalisation of drug use

This proposal is estimated to have the following impacts:

- **Demand:** The international evidence does not suggest an increase in dependent use, or regular use, as a result of decriminalisation (especially the evidence from Portugal).
- **Police:** No change to costs. Even though police would spend less time prosecuting drug use and possession, they will be providing mandatory cautions and enforcing these. We therefore assume the police will not change its resourcing of this segment.
- **Courts:** This will affect up to 3,750 people who are charged for possession and use of drugs (includes 'other' category, which are largely utensil offences). They will not use additional court resources (court, legal aid, etc) which we estimate is around $2,000 per person.
- **Corrections:** we estimate an impact of $20m-$39m overall:
    - Around 2,900 people are currently convicted of possession or use of a drug or drug utensil each year. They receive various sentences from fines to imprisonment. The most common convictions were community work, monetary fine and imprisonment. According to the Department of

Corrections, imprisonment is very expensive (around $310 per day, which includes capital costs such as building prisons to accommodate additional prisoners), compared to community work ($10 per day). We estimate savings from the change of policy would be around $20m-$39m a year.

- The evaluation of the alcohol and drug court being piloted found that a therapeutic approach could reduce reoffending by 15%. If we assume these findings translate to a system of mandatory cautioning and treatment, reduced reoffending could provide additional savings to corrections and courts of around $4m to $6m per year in year 3. A court-based system may not be a good proxy for the proposed policy, but we use the evidenced reduction in reoffending rate in the absence of better data.
- Conservatively, we assume no other changes in acquisitive crime, although if the different interventions reduce dependency, then some impact can be expected.

FIGURE 5: PEOPLE CHARGED WITH DRUG OFFENCES (2016)

Most serious offence	Cannabis	Other drugs	All drugs
Import or export illicit drugs	4	93	97
Deal or traffic in illicit drugs	802	570	1,372
Manufacture or cultivate illicit drugs	1,034	59	1,093
Possess and/or use illicit drugs	1,466	245	1,711
Other illicit drug offences	829	1,208	2,037
Total	**4,135**	**2,175**	**6,310**

Source: Ministry of Justice

FIGURE 6: PEOPLE CONVICTED OF DRUG POSSESSION, USE & UTENSILS (ALL DRUGS, 2016)

	Possess and/or use illicit drugs	Other illicit drug offences	Total
Imprisonment	245	395	640
Home Detention	40	58	98
Community Detention	37	82	119
Intensive Supervision	56	96	152
Community work	308	405	713
Supervision	128	155	283
Monetary	258	171	429
Deferment	85	75	160
Other	1	3	4
No sentence recorded	182	137	319
Total	**1340**	**1577**	**2917**

Source: Ministry of Justice

- **Health:** The costs and benefits of referrals to mandatory brief interventions and other treatments now provided through the health, rather than the prison, system are captured in the wider health policy costs discussed in section 3.3. There is a small cost of brief health interventions, which may be comparable in cost to a consultation with a primary care nurse.
- **Employment:** Decriminalisation may result in better employment outcomes. In the US context, having a criminal record reduces the likelihood of getting a call-back from a job application by 60%.[26] There is insufficient evidence to credibly estimate the impact here. However, for each successful person who moves from unemployment to employment, without displacing another worker, the gain would be the equivalent of $30,000 a year (based on the minimum wage) and reduced fiscal costs of around $10,400 per year. The gains from employment may total more than $100m a year, but we have erred on the side of caution and not explicitly counted this potential benefit.
- **Net social benefit:** As summarised in Figure 7, decriminalising all drugs will mean modest savings of $34m to $83m a year. Most of the savings are in justice and correction costs, and modest increases in health (brief interventions) and education costs. The payoffs from brief interventions are not clear if the treatment and harm reduction services do not have capacity to provide additional help if required. In the absence of increased funding for these services, we err on the side of caution.
- **Net fiscal effect:** The cost of the low-level interventions and education to accompany decriminalisation would be small, compared to the savings in other areas. We estimate a net fiscal gain of $15m-$19m per year.
- When combined with the boost in health (discussed below), decriminalisation will generate a net social benefit of $112m, conservatively (and as high as one billion dollars in an optimistic estimate). But it would leave a fiscal hole of around $132m, which would have to be funded from new taxes (for example from legal sales of cannabis) or reduced spending elsewhere.
- The proposed investment in health is needed to meet current demand, regardless of drug law reform.

[26] Agan, Amanda & Starr S., 2017. "The Effect of Criminal Records on Access to Employment," *American Economic Review,* 107, no. 5: 560-64.

FIGURE 7: THE MARGINAL EFFECT OF DECRIMINALISING ALL DRUGS, INCREASING SPENDING ON EDUCATION

Marginal change in costs and benefits, $m

	Without health policy		With health policy	
	Low	High	Low	High
Changes in government spending from:				
Health	-3	-18	-150	-150
Education	-9	-9	-9	-9
Justice, corrections, police	27	46	27	46
Sub total: fiscal impact	15	19	-132	-113
Social benefits from:				
Health	n/a	n/a	225	1,050
Education	19	64	19	64
Justice, corrections, police	n/a	n/a	n/a	n/a
Sub-total: social benefits	19	64	244	1,114
Net social impact	**34**	**83**	**112**	**1,001**

(Note: negative means increase in cost; positive means a benefit or reduction in cost)

Source: Sense Partners

3.2. Results: legalisation of cannabis use and supply

This proposal is estimated to have the following impacts:

- **Demand:** We assume recreational demand would increase in the absence of price increases, but that the proportion of dependent use is unlikely to increase, based on the early experience of US States that have legalised to date.[27]
    - Based on the international evidence, legalisation of cannabis could increase recreational demand. For example, in Colorado teen use fell following legalisation, but young adult (18-25) use rose.[28] The evidence and interpretation are still mixed. This highlights the need for comprehensive monitoring of drug use and harm, and a responsive regulatory and intervention approach.
    - The proposal is to set the levy on cannabis sales such that market prices increase modestly, to minimise any lift in demand (but ensure incentives are such that supply comes into the formal economy). This will be a tricky balancing act.

[27] Cerdá M., Wall M., Keyes K., Galea S, Hasin D., 2012. "Medical marijuana laws in 50 states: Investigating the relationship between state legalization of medical marijuana and marijuana use, abuse and dependence", *Drug and Alcohol Dependence*, January 01, 2012, Volume 120, Issues 1-3, p22-27

[28] Center for Behavioral Health Statistics and Quality, 2014, 2015, 2016. *National Survey on Drug Use and Health*, accessed on 27 Feb 2018 at: https://www.samhsa.gov/data/sites/default/files/NSDUHsaeShortTermCHG2016/NSDUHsaeShortTermCHG2016.htm

  - If use of cannabis increases with legalisation, then harm may also increase. In the absence of harm reduction measures, a 10% increase in use represents nearly $100m of additional personal and community harm according to the DHI.
  - There is considerable uncertainty on how legalisation may affect the use of other drugs or prescription medicines for pain control. There are arguments that cannabis can reduce the use of other drugs, but the evidence is not clear.

- **Health:** based on this tentative evidence and effective use of price signals, we assume as a base case that there will be no increase or decrease in harm from drug use as a result of legalisation:
  - There is no strong evidence on cannabis being a gateway to other drugs. Legalisation of cannabis may lead to small reductions in other current or future drug use, but the evidence is still not conclusive.[29]
  - Deaths and injuries from driving while under the influence of cannabis do not appear to have increased in US states that have legalised cannabis.[30] .
  - Close monitoring of use and sensitivity to price can be used to ensure that cannabis supply does not increase materially, potency is managed, and demand does not increase materially. As noted above, if use cannot be managed with policy tools, then health harms will increase. This emphasises the need for close monitoring of drug use and impact to ensure policy settings are delivering desired results.
- **Police**: as above, we assume no impact on police resourcing overall.
- **Courts & Corrections**: There are 2,295 cannabis related cases in court each year, and 271 people were imprisoned for cannabis possession in 2016 (most serious offence; only 7 were imprisoned for cannabis possession only). We estimate $6m-$13m of court and corrections savings based on avoiding court use and reducing imprisonment and other punishments.
- **Government revenues:** States in the US that have legalised cannabis have raised significant revenues from an excise on cannabis sales (similar to tobacco and alcohol), sales taxes (GST), and income taxes (on profits and wages). Based on gross revenues of around $550m from the Drug Harm Index, bringing cannabis into the formal economy will increase tax revenue from these sources by $191m to $249m a year (from taxes on workers, sales, excise and profits in the now formalised cannabis

[29] Thompson, A. & Koichi, Y., 2017. "Does Previous Marijuana Use Increase the Use of Other Drugs: An Almost Ideal Demand System Approach". *The B.E. Journal of Economic Analysis & Policy*, 17(3), pp. -. Retrieved 30 Jul. 2018, from doi:10.1515/bejeap-2016-0069

[30] Drug Policy Alliance, 2018. From Prohibition to Progress: A Status Report on Marijuana Legalization, Accessed 27 February 2018 at drugpolicy.org/legalization-status-report

sector).[31] We assume the excise can be raised to around 10% – raising the retail price from around $10/g to around $12.70/g including excise and GST; tobacco excise for example is around 275% in 2018). Our estimates are consistent with The Treasury's estimates in 2016.[32] The main risk to tax revenue is how quickly cannabis sales move from the black market to the formal economy. In most US states, tax revenue from cannabis has been higher than initially forecast, although some were lower at inception. The increase in tax revenue is not a benefit per se, rather it gives fiscal capacity for the government to pursue desired policies and interventions.

- **Licensing, monitoring, and enforcement:** We estimate the likely cost of licensing of growers and retailers and associated monitoring to be $5m per year. This is based on the fee structure set out in Psychoactive Substances (Fees and Levies) Regulations and assumes around 500 retailers and 250 manufacturers, and the Colorado experience. As fees would be set on a cost recovery basis, the fiscal impact is neutral.
- **Proceeds of crime:** in the black market a share of the proceeds from illegal activity are reinvested in crime. The Drug Harm Index estimated the proceeds from cannabis-related crime to be $70m. While the black market for cannabis is expected to be significantly reduced by legalisation (in Colorado around 27% of spending on cannabis remains in the black market[33]), it is unclear whether legalisation of cannabis will impact on total profits of organised crime in the long run. The more likely scenario is that organised crime will find other sources of finance. We assume no change.
- **Employment:** As noted above, a criminal record has a negative impact on employment. Custodial remand or a prison sentence can lead to a loss of a job, or failure to get a job in the future (and other costs to family and society). Legalisation will eliminate that source of cost. However, data are too sketchy to accurately estimate the impact on employment.
- **Net social benefit:** Legalising cannabis will lead to net societal gains of $10m-$53m a year (the benefits to individuals, community and reduction in government costs). There is an additional windfall gain of tax revenue from the government from bringing cannabis into the formal economy, but taxes are not counted as a social benefit per se.

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31 It is usual to make a -20% adjustment on increased tax revenues to capture the efficiency loss caused by taxation (deadweight loss). This would amount to a cost of $38m-50m p.a. But it is not clear if a deadweight loss is created or eliminated by moving from black-market provision without tax (but a premium to reflect the risk of undertaking criminal activity) and formal market provision with tax. The Drug Foundation aims for excise levies such that, with tax, retail prices are similar to, but not lower than, current levels and consumption does not increase. We thus assume no change.

32 Treasury analysis prepared on Improving public sector spending, relating to Drug law reform, accessed 30 March 2018 at: https://assets.documentcloud.org/documents/2995244/Bill-English-Cannabis-OIA.pdf

33 Herbert Fuego, 2017. *Ask a Stoner: How Big Is Colorado's Black Market for Marijuana?* Westword, accessed on 30 March 2018 at: http://www.westword.com/marijuana/colorados-black-market-for-marijuana-how-big-is-it-9280870

- Legalising cannabis plus $150m a year health investment will lead to net social benefit of $86m, conservatively. Much of the gains are from expansion of harm reduction and treatment services.
- **Net fiscal effect:** Government revenue would increase by $191m or more a year under legalisation. In our base scenario, it would be enough to expand health policy by $150m a year and still have $33m leftover.

FIGURE 8: MARGINAL EFFECT OF CANNABIS LEGALISATION, INCREASED SPENDING IN LOW-THRESHOLD INTERVENTIONS AND EDUCATION[34]

	Without health policy		With health policy	
	Low	High	Low	High
Changes in government spending from:				
Health	-1	-10	-150	-150
Education	-9	-9	-9	-9
Regulatory agency	-5	-5	-5	-5
Justice, corrections, police	6	13	6	13
Sub-total: changes in govt. spending	-9	-11	-158	-151
Tax revenue from:				
Excise @ 10%, 15%	55	83	55	83
GST	91	95	91	95
Licenses	5	6	5	6
Wages	30	41	30	41
Profits	10	20	10	20
Sub-total: increase in tax revenue	191	245	191	245
Subtotal: impact on government finances	182	234	33	94
Social benefits from:				
Health	n/a	n/a	225	1,050
Education	19	64	19	64
Regulatory agency	n/a	n/a	n/a	n/a
Justice, corrections, police	n/a	n/a	n/a	n/a
Sub-total: social benefits	19	64	244	1,114
Net social impact	**10**	**53**	**86**	**963**

Source: Sense Partners

[34] It is usual to present the costs and benefits of policies like these over a ten- or twenty-year timeframe, and discount future values to present a net present value. This is easily done but not very informative as there are no substantial differences between the timing of costs and benefits, and any assumption about the timing of introduction would be arbitrary. Annual costs and benefits are more intuitive.

3.3. Results: drug education, harm reduction, and treatment services

Drug education

Table 4 lists the education and prevention projects identified by the New Zealand Drug Foundation, which will cost around $9m a year. Cost benefit analyses of drug policy are of mixed quality, age and scope. This makes them difficult to compare with each other. This means that the research often show wide variation in results, which leaves us with a wide range of estimates.[35] Nevertheless, a common theme emerges: the benefits outweigh the costs.

Based on benefit-cost-ratios found in the literature for use interventions, we estimate the social benefits will range between $19m to $64m a year. The range is very wide, reflecting differences between studies in the types of benefits taken into account and methods. A conservative interpretation would be that benefits will exceed programme costs.

TABLE 4: EDUCATION AND PREVENTION POLICY IDEAS

Intervention policy	Operation cost at full implementation ($m)	BCR from literature		Estimated social benefit ($m)	
		Low	High	Low	High
Destigmatisation of drug use	1.0	1*	13.8	1.0	13.8
Health curriculum	1.0	1*	18.0	1.0	18.0
School wide approaches to keep students in education	1.0	5.0	8.0	5.0	8.0
Innovation fund, to keep up to date with drug research	1.0	1*	1*	1.0	1.0
Promote help seeking & self help	2.2	1*	1*	2.2	2.2
Identifying & communicating changing trends in drug use & effects, & develop an early warning system to identify & communicate changing trends in drug use	0.9	1*	1*	0.9	0.9
Early intervention: screenings in primary care settings	1.7	1*	1*	1.7	1.7
Education programme total	8.8	1.5	5.2	12.8	45.6

Source: Sense Partners (BCR is benefit to cost ratio)

Harm reduction

Harm reduction includes policies, programmes and practices which aim to reduce the adverse health, social and economic consequences of drug use without necessarily reducing consumption. For example, needle exchange reduces the spread of blood-borne viruses such as HIV, Hepatitis B and C amongst people who inject drugs by distributing sterile injecting equipment and providing advice about safer injecting practices.

Cost-benefit studies over time have persistently found benefits to exceed costs for harm reduction programmes.[36]

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35 Reuter Peter, 2001. "Why does research have so little impact on American drug policy?" *Addiction*;96(3):373–376. doi: 10.1080/0965214002005437

36 The Vienna Declaration. Accessed 20 March 2018 at http://drugpolicy.ca/about/publication/the-vienna-declaration/

Harm reduction approaches make drug use less risky and create the potential to provide additional support if needed. The biggest benefits tend to be in personal health, from reducing death from overdose (with supervised injecting sites), reducing infection rates (with needle exchange) and reducing the risk from contaminated drugs (with drug checking).

The international evidence on harm reduction approaches is strongly positive. Needle exchange in New Zealand has a proven track record, with very low rate of HIV among people who inject. There is pent up demand and expanding distribution by scaling up the programme will deliver further benefits.

International experience suggests supervised injecting sites are cost effective to provide a safe environment for drug use and a good opportunity for education and harm reduction.

Table 5 shows some examples of relevant harm reduction policies being proposed and their benefit cost ratios (BCRs). The table highlights programmes that can be expanded and their potential benefits. For example, Needle Exchange needs additional funding of around $3.5m a year ($4.8m currently) to keep up with demand. Like the education cost benefit analyses, past studies have differed in their aim, approach and coverage, which leads to wide variations in estimates. But studies have consistently found harm reduction programmes to provide greater benefits than costs.

TABLE 5: SOME EXAMPLES OF HARM REDUCTION POLICIES AND THEIR BENEFITS

Intervention policy	Operation cost at full implementation ($m)	BCR from literature		Estimated social benefit ($m)	
		Low	High	Low	High
Expand needle exchange	3.5	1.3	5.5	4.6	19.3
New safe injecting sites	1.5	1.4	32.0	2.0	48.0
Drug checking	0.2	3.8	7.7	0.8	1.5
Opoid substitution therapy	1.0	3.9	5.1	3.9	5.1
Total	6.2	10.3	50.3	11.2	73.9

Source: Sense Partners (BCR is benefit to cost ratio)

Treatment programmes

Treatment programmes aim to reduce drug use, reduce criminal offending and increase individual's functioning. These reduce criminal justice costs, future health costs, and other financial and emotional costs on family and friends.

Both *Rising to the challenge*[37] and *Towards the next wave of mental health and addiction services capability*[38] signal a need to support more people with services than the three per

[37] Ministry of Health, 2012. *Rising to the challenge: the Mental health and addiction service development plan 2012-2017,* at https://www.health.govt.nz/publication/rising-challenge-mental-health-and-addiction-service-development-plan-2012-2017

[38] Mental Health and Addiction Service Workforce Review Working Group, 2011. *Towards the next wave of mental health and addiction services capability*, at https://www.health.govt.nz/system/files/documents/pages/mental-health-workforce-service-review.pdf

cent of people experiencing severe mental health and addiction issues. The model of care proposed by the sector is person-centred and integrated across the continuum; from self-care through to primary and secondary care settings.[39,40]

Research shows that, although there are multiple treatments that are effective for alcohol and drug problems, not all programs work for all individuals; that is, different treatments, and different combinations of treatments, are likely to work for different people.[41,42,43] This makes evaluation of different services difficult from a cost benefit point of view.

Information on cost-effectiveness of various interventions is sparse in New Zealand. Cartwright assessed eighteen cost-benefit studies and found benefits outweighed costs by a factor of between 1.6 to 26 (though differences in methods make comparisons difficult).[44] A Minnesota study of prevention and health interventions for addiction found benefits outweighed costs by a factor of between 1.9 to 20.4.[45] Our review of selected health interventions, to cross-check the New Zealand and Australian experience and literature, found a similar pattern of benefits exceeding costs.

The Regulatory Impact Statement on the Substance Addiction (Compulsory Assessment and Treatment) Bill (now Act) also indicates treatment gives value for money:

> *A number of studies have demonstrated that treatment for alcohol and drug dependence is effective across various treatment modalities, with reductions in substance use and improvements in health and wellbeing. Addiction treatment is also cost effective. Reviews are consistently finding that most addiction treatment yields net economic benefits to society.*
>
> *It is estimated that for every dollar spent on addiction treatment programmes, there is a $4 to $7 reduction in the cost associated with drug-related crimes. With some non-residential programmes, total savings can exceed costs by a ratio of 12:1.*[46]

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39 Te Pou & Matua Raki, 2015. *Adult mental health and addiction workforce – 2014 survey of Vote Health funded services*, p76, at https://www.tepou.co.nz/uploads/files/resource-assets/full-report-of-the-adult-mental-health-and-addiction-workforce-2014-survey-of-Vote-Health-funded-services-v2.pdf

40 Sindelar J and Fielling D, 2001. "Innovations in treatment for drug abuse: Solutions to a public health problem", *Annual Review of Public Health*, accessed on 30 March 2018 at: https://www.annualreviews.org/doi/pdf/10.1146/annurev.publhealth.22.1.249

41 Gossop, M., 2006. *Treating drug misuse problems: evidence of effectiveness*. London, UK: National Treatment Agency for Substance Misuse, National Addictions Centre, National Health Service.

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43 Literature review in Testing the Bridge, page 6

44 Cartwright, W. S., 2000. "Cost–benefit analysis of drug treatment services: review of the literature". *J. Mental Health Policy Econ.*, 3: 11-26.

45 W Merrick, T Elder, and P Bernardy, 2017. *Adult and youth substance use: benefit-cost analysis*, report for Minnesota Management & Budget https://mn.gov/mmb-stat/results-first/substance-use-report.pdf

46 Ministry of Health, 2015. *Regulatory Impact Statement, Substance Addiction (Compulsory Assessment and Treatment) Bill*, accessed 30 March 2018 at: https://www.health.govt.nz/system/files/documents/pages/ris-sacat-bill-with-references.pdf

As programmes become larger, diminishing returns tend to set in. That can reflect that it is harder to reach or treat people who are less motivated, or that these programmes start to draw in people who use drugs with only modest risk of harm. So, programmes need to actively consider more treatment options which may be more effective for currently under-served groups.

Based on this, a conservative conclusion would be that an increase in spending of $150m a year on drug treatment will return social benefits of at least $150m. To take account of diminishing marginal returns we constrain the Benefit Cost Ratios found in the literature to between 1.5[47]-7[48]. There is a large body of cost benefit analyses to quantify the effect of drug policy. However, they differ in their approach and hence results.

That would mean that a $150m increase in health spending could return a social benefit of $225m to $1,050m.

[47] By building up identified policies at their best estimate of BCR from literature, with successive increases in spending assumed to trend to 1 due to diminishing returns.

[48] Ettner, S. L., et al., 2006. "Benefit-cost in the California treatment outcome project: Does substance abuse treatment 'pay for itself'?" *Health Services Research*, 41 (1). 192-213 accessed 27 February 2018 at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1681530/

4. Conclusions

The criminal justice approach to preventing and reducing harm from drug use has failed, as evidenced by continued and widespread use of drugs.

This is increasingly recognised around the world, where momentum is shifting to a health-based approach.

In New Zealand too, there is strong public support for change. And the Law Commission in 2011 concluded criminalisation of use was not fit-for-purpose.

An economic assessment for the New Zealand Drug Foundation of three policy proposals found that each proposal has merit, compared to persisting with a criminal justice approach.

In our conservative base case:

- **Decriminalisation** of all drugs would result in a net societal gain of $34m, with a net $15m gain to the government mainly from reduced criminal justice costs.
- If accompanied by our proposed $150m a year health package, the government would need to raise $132m from other sources or reduce spending elsewhere. Societal benefit would be substantial at $112m a year. The boost in education, harm reduction and treatment services would be a natural complement to one or both of these proposed reforms. However, there is a strong case to proceed with this regardless, given strong benefit cost ratios in the literature, and known unmet demand for services. An investment of $159m is expected to lead to $244m, and potentially up to $1.1b social benefits per year.
- **Legalisation of cannabis** would deliver a modest societal gain of around $10m a year but accompanied by a big increase in tax revenue ($191m; $186m excluding fees for regulatory body) which is not included in societal gain. This would give ample fiscal space for the government to increase health and education spending on addiction services by $150m and $9 respectively in proposed policies.
- We have deliberately taken a cautious approach in these assessments. This paper has not considered some of the broader potential benefits of drug policy reform, because the evidence is mixed, and the potential ranges are wide. This makes the calculations complex, as they often are with challenging public health issues.

The current approach has not been effective at reducing drug use or its harm. We should look at better ways of doing it. Our analysis suggests that a decriminalised or legalised approach will deliver better social outcomes.

Appendix. Tables and workings

This section provides the supporting detail and key data sources that underpin assumptions and estimates in the main body of the report.

FIGURE 9 CANNABIS EXCISE REVENUE SCENARIOS ($M)

Based on current cannabis revenue of $550m

Excise rate	Excise revenue	GST revenue	Total
5%	28	87	114
10%	55	91	146
15%	83	95	177
20%	110	99	209
25%	138	103	241
30%	165	107	272
35%	193	111	304
40%	220	116	336
45%	248	120	367
50%	275	124	399
55%	303	128	430
60%	330	132	462

Source: Sense partners estimates

This table summarises the potential excise and GST revenue from cannabis sales, based on an annual revenue assumption of $550m from the Drug Harm Index. In our analysis we have assumed excise duty of 10% in our base case and 15% for the high case. For comparison, the excise on tobacco is around 275%. We assume that the excise increases gradually over time to strike the right balance to bring supply of cannabis into the formal economy and sufficient price increases to avert an increase in use.

FIGURE 10 LICENSING FEE SCHEDULE ($)

Licence fees		
Application for a licence to import psychoactive substances	$	2,500
Application for a licence to manufacture psychoactive substances	$	19,000
Application for a licence to research psychoactive substances	$	2,000
Application for a licence to sell psychoactive substances that are not approved products	$	2,000
Application for a licence to sell approved products by retail	$	12,000
Application for a licence to sell approved products by wholesale	$	7,000
Annual levies		
Licence to import psychoactive substances	$	7,500
Licence to manufacture psychoactive substances	$	42,000
Licence to research psychoactive substances	$	3,000
Licence to sell psychoactive substances that are not approved products	$	2,000
Licence to sell approved products by retail	$	7,000
Licence to sell approved products by wholesale	$	6,000

Source: Psychoactive substances regulatory authority

This tables summarises the licensing fee schedule for psychoactive substances. We use this schedule to estimate the potential revenue from cannabis legalisation.

FIGURE 11 COLORADO LICENSED MARIJUANA BUSINESSES (NUMBER)

	2018	2014
Centers	504	147
Cultivations	747	192
Infused Product Manufactures	257	33
Operators	5	
Testing Facilities	11	
Transporters	8	

Source: Colorado Departments of Revenue

We use Colorado as a base case to compare how many different types of businesses we may see in New Zealand as a result of legalisation. While regulatory settings differ, it has a similar population size to New Zealand.

FIGURE 12 CANNABIS LICENSING FEE REVENUE

Year:	1	2	3	4	5	6	7	8
Colorado based scenario of number of cannabis businesses (Number)								
Retailers	147	266	385	504	504	504	504	504
New	147	119	119	119	0	0	0	0
Manufacturers	33	108	183	257	257	257	257	257
New	33	75	75	74	0	0	0	0
Year:	1	2	3	4	5	6	7	8
Revenue from applying Psychoactive Substances schedule of fees ($m)								
Revenue from application fee								
Retailer	1.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0
Manufacturer	0.2	0.5	0.5	0.5	0.0	0.0	0.0	0.0
Revenue from annual fee								
Retailer	1.0	1.9	2.7	3.5	3.5	3.5	3.5	3.5
Manufacturer	0.2	0.6	1.1	1.5	1.5	1.5	1.5	1.5
Total revenue from levy								
$m	2.5	3.9	5.2	6.4	5.1	5.1	5.1	5.1

Source: Sense Partners estimates

we use the schedule of fees for psychoactive substances and likely number of cannabis businesses to estimate the potential revenue from cannabis licensing.

FIGURE 13 CANNABIS RELATED EMPLOYMENT POTENTIAL

Colorado based scenario

	Tonnes of Cannabis	Employees
Colorado	112	12,591
NZ	27	3,085
NZ @ 25% higher labour productivity		2,314

Source: Sense Partners estimates, Marijuana Policy Group (2016) The Economic Impact of Marijuana Legalization in Colorado

We use the Colorado example to estimate potential employment gains. We use the cannabis use estimate from the Drug Harm Index. We consider two scenarios, one where we assume the productivity of the New Zealand cannabis employees will be the same as Colorado. We also construct a conservative scenario, where later adoption of the cannabis economy means it is less labour intensive and thus fewer employees are required.

FIGURE 14 CANNABIS RELATED EMPLOYMENT AND CORPORATE PROFIT TAX ($M, UNLESS STATED OTHERWISE)

	Scenario	
	Low*	High
Number of employees	2,314	3,085
Salaries paid	122	162
Income tax paid	30	41
Sales revenue	550	550
Retail margin (@2.5%,5%)	14	28
Markup (@2.5%,5%)	14	28
Wholesale revenue	523	495
Profit margin (@4%,9%)	22	45
Corporate tax paid	10	20

Margin ranges based on Annual Enterprise Survey data
*High labour productivity, but low profit margin scenario

Source: Sense Partners estimates

We bring together employment estimates with average earnings (for all industries) to estimate wages generated by the sector, and income tax generated (at 20% effective rate, the convention in cost benefit analyses). We use Statistics New Zealand's Annual Enterprise survey data to establish plausible ranges of profit margins and corporate taxes collected. Cannabis yield on land is much higher than competing use. The average yield in the US is roughly US$1 million an acre, about 4,800 times the yield for wheat at around $230. But there are costs like security and fences.

FIGURE 15 CATEGORIES OF OFFENCES AND PUNISHMENTS IN THE MISUSE OF DRUGS ACT

Misuse of Drug Act:

Class A	Very high risk (meth, cocaine, heroin, lsd)
Class B	High risk (cannabis oil, hashish, morphine, opium, ecstacy, amp
Class C	Moderate risk (cannabis plant, cannabis seed, codeine)

	Imprisonment (months)	Fines $	Court case category	Note
Possession/Use				
Class A	6	1000	2	
Class B	3	500	2	
Class C	3	500	2	
Supply or manufacture				
Class A	240		3	(Life)
Class B	168		3	
Class C	96	1000	3	Indictment
	12	1000	3	Summarily
Use of premises				
Class A	120		3	
Class B	84		3	
Class C	36		3	
Possession of tools	12	500	2	
Cultivation of cannabis	84		3	Indictment
	24	2000	3	Summarily
Possession of seeds of prohibited plant	12	500	2	

Source: Sense Partners summary from MODA

This table summarises the categories of offences and punishments in the Misuse of Drugs Act. This allows us to analyse potential court costs by the category of court cost. Our aim is to estimate the cost of possession and use of drugs (among all drug offences) using the fines and category of court case.

FIGURE 16 ESTIMATED TOTAL COURT COSTS

Case category	Cat 1	Cat 2	Cat 3	
			Judge alone	Jury trial
Court costs	317	516	2,469	11,846
Legal Aid	817	647	1,986	10,336
Police prosecutions	647	647	1,986	10,336
Estimate cost per case	1,781	1,810	6,441	32,518
Rounded cost per case	2,000	2,000	6,400	32,500

Source: Sense Partners estimates from MOJ data, some obtained under OIA

This table gives us the estimates of the relevant costs for each category of court case, which we use with the previous table to estimate the court costs resulting from use and possession of drugs.

FIGURE 17 EFFECT OF POLICY CHANGES ON COURT CATEGORIES

	Court category		
	Now	Decriminalisation	Legalisation
Cannabis			
Deal or Traffic in Illicit Drugs not further defined	3	3	-
Import or Export Illicit Drugs not further defined	3	3	-
Cultivate Illicit Drugs	3	3	-
Manufacture Illicit Drugs	3	3	-
Other Illicit Drug Offences, N.E.C.	2	-	-
Possess Illicit Drug	2	-	-
Use Illicit Drug	2	-	-
Non-cannabis drugs			
Deal or Traffic in Illicit Drugs not further defined	3	3	3
Import or Export Illicit Drugs not further defined	3	3	3
Manufacture Illicit Drugs	3	3	3
Other Illicit Drug Offences, N.E.C.	3	3	3
Possess Illicit Drug	2	-	-
Use Illicit Drug	2	-	-

Source: Sense Partners estimates

We use this table and the one before to apply the cost by case category and where there are changes due to our drug policy reform scenarios.

FIGURE 18 COST OF PUNISHMENTS FOR THE DEPARTMENT OF CORRECTIONS

	Avg cost per offender per day ($)	Average duration of sentence	Total ($)
Sentenced prisoners	308	534	112,248
Remand prisoners	239	68	87,297
Extended supervision	81	2,013	29,529
Home detention	60	195	21,853
Parole / residential restrictions	36	441	13,246
Intensive supervision	21	437	7,712
Release on conditions	19	332	6,979
Supervision	16	277	5,749
Community detention	13	185	4,811
Post detention conditions	11	209	3,884
Community work	10	101	3,555

Source: Department of corrections 2016 Annual Report

We use this table of costs punishments for the Department of Corrections (which corresponds to the timing of the Drug Harm Index) and gives us the cost of offences. We use these to estimate the avoided cost of punishments currently handed out for possession and use of drugs.

FIGURE 19 ALCOHOL AND DRUG SPENDING BY PUBLICLY FUNDED HEALTH SYSTEM

2015/16	Number of people	$m	Cost per person ($)
Residential	2,216	19	8,574
Opioid substitution*	5,317	16	3,009
Non-residential	50,287	114	2,267
Total	**50,412**	**149**	**2,956**

*2016 calendar year

Source: Data supplied by MOH

We use the data from Ministry of Health to estimate the potential cost of expanding addiction programmes.