DRAFT REPORT ON
INQUIRY INTO THE ISSUE OF KAVA REGULATION

Prepared for the Sessional Committee on the Use and Abuse of Alcohol by the Community,

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September 1997

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EXECUTIVE SUMMARY

Introduction

On 21 November 1996 the Northern Territory Attorney General and Minister for Health, Mr Burke, tabled in the Legislative Assembly a draft Kava Management Bill 1996, and at the same time moved that further consideration of the Bill, and of the broader issue of kava regulation, be referred to the Assembly's Sessional Committee on Use and Abuse of Alcohol by the Community (Northern Territory Legislative Assembly 1996).

The Terms of Reference of the referral, as originally proposed by the Government, set out five tasks. The Committee was asked to:

(a) investigate the association between kava drinking and alcohol;
(b) investigate the health, social and economic consequences of current patterns of kava consumption;
(c) inquire into the circumstances in which kava is brought into the Northern Territory and into Aboriginal communities and the distribution of kava to consumers;
(d) consult with all relevant stakeholders and make recommendations as to the desirability and extent of kava availability in the Northern Territory; and
(e) comment on the legislative framework proposed for kava control - The draft Kava Management Bill forms a basis for community consultation; and

In the ensuing debate, Opposition MLA Syd Stirling successfully moved an amendment, adding a sixth task to the Sessional Committee's brief.

(f) the Committee should assess the body of research into kava use and further study the educational requirements in that regard.

The report that follows is the outcome of these events.

Kava - some background information

Introduction

Kava is a beverage prepared from the plant, Piper methysticum of the pepper family. In Australia kava is prepared for consumption by infusing imported, commercially dried and powered roots of the plant in water. Kava has been used in the Pacific Islands for ceremonial and recreational purposes for at least 3,000 years, and is today used widely in Vanuatu, Fiji, Tonga, Western Samoa and Micronesia.

Although there is evidence of it having been used by Torres Strait Islanders in the early years of the 20th century, it is only since 1981 that it has become popular in several Aboriginal communities in Arnhem Land, where it was introduced in the belief that it offered a less harmful alternative to alcohol, excessive use of which was causing damage to health and family and community life.

Pharmacological and toxicological properties

Pharmacologically, kava is classified as a psychotropic agent, the effects of which have been described as giving rise to “a pleasant, warm, and cheerful, but lazy feeling”. Kava is a

complex mixture of substances, the main active compounds being a group of fat-soluble kava pyrones found in kava resin. However, the water soluble fraction may also contribute to the effects. Kava contains no alcohol. It may vary in composition and effects depending on the part of the plant used, whether it is powdered or fresh, the plant type used, the area in which the plant has been produced and the method used to prepare it for consumption.

Most of the pharmacological effects of kava described in the literature refer to acute effects of consumption, following within 20-30 minutes of drinking, as kava is absorbed from the stomach. The effects associated with chronic consumption are poorly documented.

The main effects reported are:

- local anaesthetic effects - rapid numbing of the mouth and tongue;
- muscle relaxant properties, commonly manifested as ataxia (incoordination), apparently a result of the action of kava compounds on the spinal cord rather than a direct effect on muscles;
- sedative and hypnotic (sleep-producing) effects, comparable to those of benzodiazepine drugs; however the mechanisms by which kava exerts these effects remains unknown;
- analgaesic (pain-reducing) effects;
- photophobia (a wish to avoid bright light).

Some human experimental work has been conducted on the acute effects of kava on perception, memory and learning. Experiments using a kava extract equivalent to 1.0-1.5 grams of kava suggest that the extract produced a positive effect on attention, memory processing and concentration. (However, consumption levels by kava drinkers in Arnhem Land are vastly higher than the levels here reported.). A study involving administration of 200grams of kava per person found no significant effect on cognition, although there was a trend to poorer performance.

Evidence concerning possible interaction effects between kava and alcohol is summarised separately below.

Evidence regarding the association between kava and tolerance (the need to increase the dose to achieve the same effect) is inconclusive. One study, using mice, found evidence of a development of tolerance to effects of an acqueous kava extract, but not to the lipid extract (kava resin) which contains most of the active ingredients of kava. It has been suggested that heavy kava users may become tolerant to *some* effects of the drug, while to other effects, tolerance may not occur.

Notwithstanding the findings reported above, the effects of chronic kava use on cognition remain unknown, particularly at the levels of consumption reported in Arnhem Land.

Kava in the Pacific

Kava is an integral part of the political, religious and economic systems in Pacific Island countries, and is widely used in Fiji, Vanuatu, Tonga, Western Samoa and Pohnpei (Federated States of Micronesia). In many contexts, drinking practices also serve to regulate consumption.

As an export earner for these countries, particularly Fiji, Tonga and Vanuatu, kava is increasingly important, with Fiji's kava crop estimated to be worth $100 million annually. The demand for kava exports is largely being driven by the European pharmacological industry, although kava-based products are also being marketed in the US for a range of purposes, including stress-relief and as an aphrodisiac. In 1994 Australia was the second largest importer of Fijian kava, after Germany. However, unlike Germany which imported mainly dried kava roots for pharmacological use, Australian imports were largely in the form of dried pounded kava for consumption.

In some parts of the Pacific, kava has also become a symbol of national identity. In 1990, for example (the same year that kava became officially designated in Australia as a 'Schedule 4' drug) Vanuatu issued a postage stamp denoting kava as 'the national plant'.

Kava in Arnhem Land

Kava was introduced to the Yirrkala community in 1981 following a visit to Fiji by members of the community. Over the next two years, use of kava spread to a number of other coastal and island communities in Arnhem Land. All of these communities had previously banned the supply and consumption of alcohol, and looked to kava as an alternative recreational substance which, in contrast to alcohol, did not lead to violence.

Since its introduction, views on of kava have been polarised, not only in the wider community but often within kava-using communities. and allegations of the negative social and health consequences of kava use have been common.

Initially, the Northern Territory Government, acting on advice from the Drug and Alcohol Bureau of the NT Department of Health, took the position that kava should not be defined or treated as a drug and that communities should be left to make their own decisions about the introduction of the substance. This policy was supported by the first major study of kava use in Arnhem Land, by Alexander *et al* in 1987, which reported that kava use had declined from the levels prevalent in the early 1980s. The report also stated that, contrary to claims that kava was being mixed more strongly in Arnhem Land than in the South Pacific, Aboriginal kava drinkers were consuming a *weaker* mixture. The report concluded that 'No major health problems or deaths have been shown to be kava-related'.

However, in the same year, the Menzies School of Health Research released results of a pilot study of kava users in Arnhem Land which suggested that heavy kava use was harmful to health and therefore should be discouraged. Kava drinkers were reported to be more likely than non-drinkers to suffer from general ill health, including shortness of breath and characteristic skin rash; malnutrition, with 20 per cent loss of body weight, 50 per cent loss of body fat and other biochemical changes; liver damage, with biochemical changes similar to those caused by large doses of alcohol; and other changes in red blood cells, white blood cells and platelets.

Critics of the Menzies study argued that not all of the reported effects on health could be attributed to kava.

The first legislature to restrict the sale and supply of kava in Australia was Western Australia, which in July 1988 invoked section 22 of the *W.A. Poisons Act*, which allowed for prohibition of the sale, supply and promotion of designated substances by proclamation. The Act did not

outlaw *possession* of kava, and in fact the proclamation made provision for Pacific Islanders and others who might wish to use kava for traditional purposes to seek ministerial permission to do so. But by prohibiting the sale and supply of kava, the measure effectively banned it use in Western Australia.

In 1990, the Northern Territory Government announced that, as from June, the sale and supply of kava in the NT would be prohibited under the *Consumer Protection Act*, except with the written approval of the Minister, and in accordance with any conditions stipulated by the Minister. All kava-using communities were asked to indicate if they wished kava to remain available in those communities. In those that did not wish to retain kava, its sale and supply henceforth became prohibited. In the others, kava was to be sold only through the local council or some other non-profit making, accountable body; sales were to be subject to an upper limit of 50 grams of kava powder per person per day; kava was to be sold only to residents of the community aged 18 and over; the council or authorised retailer was to obtain kava only from approved wholesalers, and records were to be kept of all transactions.

Five communities elected to retain kava, while another three voted to ban it, although in two of these the decision was vigorously opposed by substantial minorities.

In October 1992, a little over two years after introduction of these measures, the NT Department of Health and Community Services engaged the Menzies School of Health Research to conduct a review of the measures and to recommend any changes that might be needed.

The review concluded that the attempt to create an orderly, regulated retail system had failed, for three main reasons: firstly, community councils were ill-prepared and ill-suited to administering a system of controlled supply of kava; secondly, with a few exceptions, the Government had neither helped councils or other retailers to meet their requirements, nor monitored their activities to ensure compliance, and thirdly, entrepreneurs had seized opportunities created by this poorly policed system to use it to their own advantage.

Any effect that the measures might have had on consumption appeared to have been short-lived. The review found that kava sales had risen steadily throughout the latter half of the 1980s, from an estimated mean of 166 kilograms per month between January and June 1986 to 2,287 kg per month between January and June 1990 - more than a thirteen-fold increase. Following the introduction of controls, sales fell away for about six months, after which they climbed steadily back to their previous levels.

In the meantime, several Commonwealth Government agencies had become involved in attempts to regulate kava. In September 1990 kava was officially designated as a ‘Schedule 4’ drug by the National Health and Medical Research Council. In February 1991 a new Commonwealth Therapeutic Goods Act came into effect, under which kava, as a Schedule 4 drug, automatically became registerable, and thereby subject to a range of new requirements and restrictions relating to manufacturer, importation, sale and supply. In August 1993 the National Food Authority submitted a new draft standard to the National Food Standards Council, under which kava was included in a list of ‘prohibited botanicals’, the importation and commercial supply of which was thereby prohibited.

However, in the same year the National Health and Medical Research Council *rescinded* its decision to place kava on Schedule 4. Within a few months, the Therapeutic Goods Administration followed suit, declaring that kava under most circumstances would not be regulated as a therapeutic good.

The National Food Authority's declaration of kava as a 'prohibited botanical', however, which took effect in March 1994, was in conflict with the NT's regulatory system. The NT Government then took two steps: first, it suspended existing licences for the sale of kava; secondly, in February 1995 it formally sought exemption from the provisions of the new Standard.

In response, the Commonwealth agreed to take no action under the new regulations, while the NFA convened a major inquiry into the whole issue of kava regulation.

The immediate beneficiaries of this chain of events were black marketeers. Suspension of the NT's regulatory system meant that there were no longer any legally authorised suppliers of kava in the NT. The undertaking by the Commonwealth not to enforce the new prohibition on importing kava meant that *non-authorised* suppliers were immune from any danger of prosecution. Herein lie the origins of the thriving black market we see today.

The NFA's inquiry culminated in November 1995 in the release of a Draft National Kava Management Strategy, comprising four components:

- a national system for restricting and monitoring the importation of kava;
- a National Code of Kava Management by which all importers, wholesalers, retailers and distributors must abide;
- a new addition to the Food Standards Code, Standard O10, which would apply only to kava. This would prohibit kava's use as an ingredient in other food and require labelling on packages of kava; and
- an option for States and Territories to impose their own, more restrictive legislation to address public health concerns and follow up with education and monitoring (National Food Authority (Australia) 1995).

At the time of writing this report, the proposed National Kava Management Strategy had not come into effect, although indications point to it being implemented in the near future.

Current supply and use of kava in Arnhem Land

Since 1995, when regulations governing the sale and supply of kava in the Northern Territory were suspended following kava's classification by the National Food Authority as a 'prohibited botanical', there have been no legally authorised provisions for the sale and supply of kava in the NT. Despite this, an estimated 15,000 - 20,000 kilograms of kava currently enters Nhulunbuy each year, and sells at a retail level for a value conservatively estimated as $6 million to $8 million.

While it appears that the total amount of kava being sold in Arnhem Land has remained similar to the high levels reported in the early 1990s, the retail value of the market in Arnhem Land has grown in the last few years. For example in the early 1990s a 50 gram pack of kava retailed for between $5 and $10; today the *lowest* price appears to be $20.

The pervasiveness and sophistication of the illegal kava market in Arnhem Land have also grown in recent years. Most kava suppliers in Arnhem Land today are based in Nhulunbuy, and operate through strategic alliances with individuals in communities. Kava is now sold in at least five community that did not apply for permits under the 1990 Northern Territory legislation. In one of these communities the traditional landowners and the local community council combined to impose a ban on the sale of kava in the community in October 1996.

However, it is questionable to what extent any community can successfully maintain a ban in a situation where opinion regarding the desirability or otherwise of kava is divided within the community itself, local councils may have limited authority, and the police find themselves unable to take punitive action against those responsible for importing kava into the Northern Territory in the first place.

In one central Arnhem Land community, where kava consumption grew rapidly in the second half of 1996, weekly retail expenditure on kava appears to be between $50,000 and $75,000. A local football competition that, prior to the growth in kava sales, supported 10 teams, has had to be abandoned as there are longer any teams.

The potency of kava being sold currently also appears to be greater than in the past. Previously, most kava sold in Arnhem Land was the low grade 'lowena' variety from Fiji, but since the emergence of the Tongan-controlled black market in 1993, most kava sold is of the more powerful 'waka' grade. Consumption of this more potent kava may be associated with higher levels of intoxication and other health-related sequelae reportedly occurring in Arnhem Land.

Two attempts have been made in the past to obtain broad estimates of kava consumption patterns in Arnhem Land. In 1987 Alexander *et al.* estimated average daily consumption by drinkers at from 14 to 53 grams of kava powder. The same study also concluded that kava consumption in Arnhem Land had peaked and was in decline.

In contrast, a second study by d'Abbs in 1993, found that kava sales had increased steadily through the second half of the 1980s, from a mean 166 kilograms per month in January-June 1986 to a mean 2,287 kilograms per month in the corresponding months of 1990. Using sales data from two communities, the 1993 study estimated mean per capita consumption by drinkers to be 88.3 grams of kava powder per day in one community and 66.5 grams per day in the other. These levels were considerably higher than the 1987 study reported and fell within the 'very heavy' consumption range identified in an epidemiological study as being linked to adverse health effects.

A survey of kava consumption in 1992 by a doctor employed by Miwatj Health Aboriginal Corporation found that 66% of males and 33% of females reported drinking kava. A third of male drinkers (32.4%) and a quarter of females drinker (23.4%) reported drinking kava 4 to 7 times a week – 28% of male drinkers and 13% of females drinkers reported consuming 8 or more cups per drinking session.

Health, social and economic consequences of kava use in Arnhem Land

Reports of adverse consequences of kava use have persisted since kava was introduced into Arnhem Land communities in the early 1980s, and have largely focused on the effects of

kava on health and, to a lesser extent, social and economic impacts. Some reports highlight positive effects of kava, especially as an alternative to alcohol.

Most attempts to assess the effects of kava are grounded in one of three approaches. The first is based on observed association between kava drinking and a number of adverse outcomes. A second approach, generally associated with a more favourable assessment of the effects of kava, accepts the evidence of adverse outcomes, but posits three additional qualifications: (1) *association* does not necessarily indicate *causation*; kava may be a causal agent, but equally, it may be one of several contributory factors, or both heavy kava drinking and the phenomenon in question might be effects of a deeper underlying cause; (2) even if kava is shown to be a cause of a particular effect, its removal may not lead to the disappearance of the effect, since another causal agent may take the place of kava; (3) however disturbing the effects of excessive kava misuse may be, the removal of kava would be likely to lead to more serious consequences, associated with alcohol abuse and/or petrol sniffing. The third approach is grounded, not in the interpretation of observed correlates of kava consumption, but on analyses of the chemical and toxicological properties of kava itself. Those who adopt this approach acknowledge that the properties of the active ingredients of kava are not fully understood, but usually insist that there is at present no evidence of sufficient toxicity to warrant restricting the availability of kava, other than by the regulatory mechanisms applied to food products in general.

Very little systematic research has been carried out on possible effects on health of long term kava consumption at the levels currently prevailing in Arnhem Land.

Heavy kava consumption has long been associated with effects on the skin, although the mechanism whereby these effects occur is still not understood. Skin effects appear to be reversible.

Studies in Arnhem Land have shown kava drinkers to have markedly elevated levels of the liver enzyme γ-glutamyl transferase (GGT) - even more so than those recorded among alcohol users - an indicator of liver damage This suggests that kava may be even more toxic to the liver than alcohol. However (a) again the mechanisms involved are not understood; (b) GGT levels have been found to decrease when drinkers stop consuming kava, but (c) beyond a certain (as yet unknown) point, liver damage may *not* be reversible.

The Mathews *et al* (1988) pilot study also found evidence linking heavy kava drinking with:

- pulmonary hypertension;
- decreased numbers of blood lymphocytes and decreased platelet volumes;
- adverse effects on blood biochemistry;
- haematuria, suggesting effects on the kidneys and renal system.

Recent anecdotal reports from experienced clinicians suggest that chronic excessive kava use may be associated with an increased susceptibility to serious infectious disease and the development of neurological abnormalities.

A possible link between excessive kava consumption, ischaemic heart disease and sudden cardiac deaths in relatively young people remains open to conjecture, but there is a strong perception and some crude data to suggest that excessive kava consumption may be a

contributing factor, along with tobacco smoking, poor nutrition and excessive alcohol consumption.

Much of the evidence presented to the Inquiry either verbally or in writing contributed to the available research evidence. This evidence included reports of kava's effects on skin; thrombotic effects; liver damage; lower resistance to chest and other infections; fitting, and effects on eyes and vision.

In addition, several submissions associated heavy kava use with malnutrition among drinkers and drinkers' dependents.

There is very little published literature on the social effects of kava drinking in Arnhem Land. Alexander *et al.* (1987) presented findings of kava use in Arnhem Land communities between July and December 1986 as part of a study of drug use in Aboriginal communities in the Northern Territory. Findings from this study have been summarised above.

Ethnographic aspects of kava use in two Arnhem Land communities were reported by Gerrard based on fieldwork conducted in 1987 and 1988. In this paper, Gerrard reported that kava was often used as an adjunct to alcohol rather than as an alternative and she attributed apparent high levels of consumption to a traditional hunter-gatherer mode of consumption. It was observed also that kava consumption usually took place with little or no ceremony and was not necessarily a group activity.

Anecdotal evidence presented to the Inquiry included both adverse and more beneficial reports of the social correlates of kava consumption. Several people alleged that all night kava drinking sessions were common and this impacted upon people's ability to pursue daily activities, including employment and cultural activities, thereby weakening the social fabric of the community as a whole.

According to some, kava contributed to family conflict and breakdown and violence usually associated with disputes over the amount of money being spent on kava as opposed to food and other items. In contrast a submission from a council of a community in which kava drinking has long been widespread stated that "Kava is calm and peaceful drinking. It makes no trouble for our community".

Submissions to the Inquiry in relation to the economic effects of kava use in Arnhem Land most commonly cited the considerable expenditure on kava and the detrimental impact this then has on the health and well-being of other family members, especially children.

Others were concerned with the profits from kava sales going to the non-Aboriginal black-marketeers and not flowing back into the local communities.

Kava and alcohol

The major reason advanced for the introduction of kava into Aboriginal communities in Arnhem Land has been that kava provides an alternative to alcohol. Kava is said to allow people to enjoy the pleasures of intoxication, but unlike alcohol does not lead to conflict, violence, injury or social disruption. This argument still persists in several Arnhem Land communities and has been advanced in many Pacific Island countries as well.

However, the extent to which kava has been used as an alternative to alcohol in Arnhem Land communities has been questioned by a number of observers. Several studies suggest that, in some communities at least, kava is often an adjunct to alcohol, rather than an alternative.

Chalmers concluded that while kava use was effective as an "anti alcohol" strategy in some communities, it has been less effective and contributed to multi drug use in other communities. She also found no evidence to suggest that kava use reduced alcohol-related offending in Arnhem Land.

Some experimental work has been carried out in relation to the interaction between kava and alcohol. A study involving mice found that the interaction was much greater than a purely additive effect for hypnotic and toxic effects. A placebo-controlled randomised double blind study involving humans found no evidence of interactive effects between alcohol and kava with respect to safety-related psychological tests, although the dosages of kava extract and alcohol were both moderate. Another study of acute effects of kava alone, or in combination with alcohol, on subjective measures of impairment and intoxication and on cognitive performance, found that kava alone had little effect on cognitive performance, but that it potentiated both perceived and measured impairment when combined with alcohol.

Future options for regulation of kava in Arnhem Land

Among Aboriginal communities in which kava is or has been widely used, there is a wide range of views about the desirability of kava being made available, and about the benefits and costs associated with kava. In some communities, traditional owners and/or the local council have attempted to impose bans on the sale and supply of kava in their communities, on the grounds that kava has been associated with illnesses, anti-social behaviour and a breakdown in community activities such as employment programs.

However, in the absence of effective controls on the regional kava trade - controls that can only be exercised by *governments* - these communities have found it virtually impossible to prevent kava being brought into the community.

At the other extreme, some community authorities have called for continuing availability of kava, with sale and supply being subjected to minimal regulation. The most common justification for this view is that, while excessive kava use is recognised as a cause of problems in the community, these problems are considerably less serious than those associated with alcohol misuse, and in the absence of kava, many people would turn to alcohol.

Notwithstanding the presence of diverse views about kava, verbal consultations conducted by the Sessional Committee, as well as other sources, including a workshop attended by Yolngu

(indigenous) representatives of five kava-using communities in north-east Arnhem Land, suggest that widespread support exists for a system of controlled supply.

Yolngu advocates of a controlled supply system have indicated that they want to see a wholesale system controlled by Yolngu people themselves. A model advocated by Yolngu participants in a workshop in 1996, chaired by Miwatj Health, involved a Yolngu-administered wholesale agency, controlled by a board on which each kava-using community would be represented, and through which profits from the sale of kava would be disbursed back to the constituent communities.

We believe that this model should receive serious consideration.

The diversity of views about kava between communities is further complicated by an absence of consensus *within* many kava-using communities. Those who call for communities to 'make up their own minds' need to accept that in many instances, the requisites for a consensual view simply do not exist.

The range of views about kava expressed by Aboriginal individuals and groups is matched by a similar diversity of views among non-Aboriginal people. One medical officer with extensive experience in the region has called for an outright ban on kava, on the grounds of apparent associations between heavy kava use and malnutrition, liver damage and possible thrombotic effects, combined with an absence of knowledge about other possible effects of heavy kava use. Another has been highly critical of the NT Government for its unwillingness or inability to enforce controls on kava, and called for a system of regulated supply.

A number of submissions to the Sessional Committee Inquiry addressed the draft Kava Management Bill. One community council - the same council that had earlier banned kava - bluntly rejected it, claiming that it did not provide an appropriate solution to kava-related problems.

One submission called for a deeming clause to be set at two kilograms, rather than five, as proposed in the draft bill. The same submission called for strong financial penalties - in the order of tens of thousands of dollars - against illegal trading.

While these submissions clearly reflected considered responses to the proposed Kava Management Bill, it also became clear to the Committee that many people were *not* familiar with either the contents or objectives of the bill. The Committee recommends that greater efforts be made in future to describe and explain the proposed bill to members of kava-using communities.

Future research

Any program for future research into kava in Arnhem Land needs to address three issues:
- What research should be done?
- How should the research be done, and
- How should it be funded?

At present, virtually all of the recorded observations about the chronic effects of heavy kava consumption are either anecdotal, or based on small samples or pilot studies. Therefore,

virtually all of the observed or imputed effects require further investigation. In particular, research is required on:

- central nervous system effects of heavy kava use;
- possible linkages between heavy kava use and susceptibility to melioidosis and other infectious diseases;
- effects of heavy kava use on vision;
- linkages between heavy kava use and malnutrition, both among drinkers and drinkers' dependents;
- a possible association between kava use, ischaemic heart disease and sudden deaths;
- interactive effects of kava and alcohol.

Other questions that arise from observations among both professional observers and members of kava-using communities include:

- the extent to which heavy kava use is associated with the development of neurocognitive deficits and whether this effect is further exacerbated by heavy alcohol use;
- the nature of the skin reaction associated with heavy kava use, and the extent to which this reaction is associated with increased susceptibility to skin infections;
- the extent to which changes to liver function, neurocognitive deficits and skin changes that may occur with heavy kava use are completely reversible after consumption ceases;
- the nature of tolerance, withdrawal and dependence associated with heavy kava use.

Virtually no research has been carried out into social and cultural aspects of kava use in Arnhem Land. Accordingly, some questions that might be addressed include:

- the meanings and purposes that the use of kava has in kava-using communities today (not necessarily the same meanings and purposes as those associated with the introduction of kava in the early 1980s);
- attempts, particularly successful attempts, to control kava use at the level of the community;
- people's reasons for drinking/not drinking kava, and for ceasing or reducing kava consumption;
- differences between and within communities in patterns of kava use.

To proceed further with itemising research topics in the absence of further consultation with members of kava-using communities would, in our view, be inappropriate. This brings us to the second aspect of this issue.

Research proposals must take account of indigenous perceptions about kava and problems associated with it, rather than be guided by outsiders' curiosity, and the processes through which any research is conducted must involve negotiation with communities and groups involved, joint participation in determining the research design, ethical clearances, and adequate feedback mechanisms.

At the time the present Inquiry was set up, it was anticipated that the NT Government might impose a levy, similar to the Living With Alcohol Trust Account, on all kava sales, with a purpose of funding research and education on kava. Since that time, the High Court has, in effect, removed the constitutional legitimacy which State and Territory governments require to raise any levies or excises of this nature. Given the nature and recency of this

development, the Committee considers it to be beyond its terms of reference to suggest mechanisms for funding further research on kava in Arnhem Land.

However, we do believe that the issue needs to be addressed at a Territory level, for the reason outlined at the beginning of this chapter: namely, in a context where demands on limited health research funds are intensive, it is not realistic to expect that adequate funds will be forthcoming nationally to provide for a research program on a subject that, from the point of view of other States and Territories, is hardly of pressing concern.

1. INTRODUCTION

On 21 November 1996 the Northern Territory Attorney General and Minister for Health, Mr Burke, tabled in the Legislative Assembly a draft Kava Management Bill 1996, and at the same time moved that further consideration of the Bill, and of the broader issue of kava regulation, be referred to the Assembly's Sessional Committee on Use and Abuse of Alcohol by the Community (Northern Territory Legislative Assembly 1996). The Committee was to report back to the Assembly by May 1997.

The Terms of Reference of the referral, as originally proposed by the Government, set out five tasks. The Committee was asked to:

(a) investigate the association between kava drinking and alcohol;
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(c) inquire into the circumstances in which kava is brought into the Northern Territory and into Aboriginal communities and the distribution of kava to consumers;
(d) consult with all relevant stakeholders and make recommendations as to the desirability and extent of kava availability in the Northern Territory; and
(e) comment on the legislative framework proposed for kava control - The draft Kava Management Bill forms a basis for community consultation; and

In the ensuing debate, Opposition MLA Syd Stirling successfully moved an amendment, adding a sixth task to the Sessional Committee's brief.

(f) the Committee should assess the body of research into kava use and further study the educational requirements in that regard.

On 29 April 1997, the Minister (Mr Burke) successfully sought an extension of time for the Sessional Committee to allow it to table a completed report at the August sittings of the Assembly (Northern Territory Legislative Assembly 1996/1997, p. 11615). In the meantime, the Sessional Committee had engaged the Menzies School of Health Research to prepare a report addressing the issues covered by the terms of reference.

The report that follows is the outcome of these events. It brings together information and views contained in three sources:

- published literature on kava;
- written submissions to the Sessional Committee's Inquiry on the Issue of Kava Regulation, and
- transcripts of consultative meetings conducted by the Sessional Committee in the course of its inquiry.

In order to enhance the logical flow and coherence of the report, the terms of reference have been re-ordered in the report. Thus, for example, the first term of reference -which concerns the association between kava and alcohol - forms the subject matter of Chapter 5 of the report. The placement of each term of reference in the report is summarised in Table 1.1.

The report proper begins with a background chapter (Chapter 2), which sets out a conceptual framework for examining the effects of kava and other psycho-active substances, a summary of what is known of the pharmacological and toxicological properties of kava, and brief

accounts of the place of kava in the Pacific and its introduction into Arnhem Land. Chapter 3 reports on current trends in the supply and consumption of kava in Arnhem Land. Chapter 4 examines evidence regarding the consequences of current usage patterns, as recorded both in published literature, submissions to the Inquiry, and in consultations conducted during the Inquiry.

Chapter 5 focuses on the relationship between kava and alcohol, and addresses three issues: the *perceived* relationship and differences between kava and alcohol; the relationship between kava use and alcohol use in Arnhem Land (i.e. to what extent does kava serve as an alternative to alcohol, and to what extent as an adjunct to it?), and the limited research data on inter-active effects of kava and alcohol.

Chapter 6 surveys future options for the regulation of kava in the Northern Territory. Chapter 7 examines the current status of kava-related research, and identifies significant gaps in our understanding. The final chapter - Chapter 8 - presents recommendations arising out of the report's findings.

Table 1.1 Relationship between Terms of Reference of the Inquiry and the structure of the report

Term of reference	**Chapter**	**Title of chapter**
(a) Investigate the association between kava drinking and alcohol	5	Kava and alcohol
(b) Investigate the health, social and economic consequences of current patterns of kava consumption	4	Health, social and economic consequences of kava use in Arnhem Land
(c) Inquire into the circumstances in which kava is brought into the Northern Territory and into Aboriginal communities and the distribution of kava to consumers	3	Current supply and use of kava in Arnhem Land
(d) Consult with relevant stakeholders and make recommendations as to the desirability and extent of kava availability in the Northern Territory	6	Future options for regulation of kava in Arnhem Land
(e) Comment on the legislative framework proposed for kava control. The draft Kava Management Bill forms a basis for community consultation.	6	Future options for regulation of kava in Arnhem Land
(f) Assess the body of research into kava use and further study the educational requirements in that regard.	2 & 7	Research into kava: current status and future needs

2. KAVA - SOME BACKGROUND INFORMATION

2.1. Introduction

Kava is a beverage prepared from the plant Piper methysticum, a tropical plant of the pepper family (Piperacea). The species name 'methysticum' - a Greek word meaning 'intoxicant' - provides a clue to its properties. In Australia, kava is prepared for drinking by infusing commercially prepared and imported dry powdered roots of the 'intoxicating pepper' in water, in much the same way in which a tea bag is infused (Alexander *et al*. 1987, p. 2; Duffield & Jamieson 1989).

Kava (or, as it is variously known, 'kava kava', 'awa', 'ava', 'cava' and 'yagona' (Hoyles 1982), has formed an integral part of Pacific Islands ceremonial and recreational life for at least 3,000 years (South Pacific Forum Secretariat 1995). Today, it is used on a daily basis in Vanuatu, Fiji, Tonga, Western Samoa and Pohnpei (Federated States of Micronesia) although, according to the South Pacific Commission, the use of kava in all of these places declined between 1960 and 1980 (South Pacific Commission 1994). It is drunk both in traditional village settings, and in contemporary urban kava bars or 'nakamals', and its use is generally associated with peace, sociability and camaraderie (Lebot *et al*. 1992, pp. 119-174). It is also used by many of the estimated 60,000 Pacific Islanders living in Australia.

Although there is evidence of it having been used by Torres Strait Islanders in the early years of the 20th century, (Brady 1991; Brunton 1989), it is only since 1981 that it has become popular in several Aboriginal communities in Arnhem Land, where it was introduced by members of those communities in the belief that it offered a less harmful alternative to alcohol, excessive use of which was causing damage to health and family and community life.

2.2. A conceptual framework

The effects of using any mind-altering substance in a given context are a product, not simply of the chemical properties of the substance itself, but rather an outcome of three sets of factors interacting with each other:

- pharmacological and toxicological properties of the substance itself;
- attributes of the *users* of the substance, such as their state of physical and mental health, and their usage patterns, and
- attributes of the *setting* in which consumption occurs, such as the availability of food, availability of other forms of recreation, and employment levels.

(Zinberg, who proposed this conceptual framework, referred to these factors as 'drug, set and setting' respectively (Zinberg 1979).

It is because of the interactive effects of these three sets of factors that a pattern of kava use in one setting - say, a village in Fiji - can have very different consequences to a similar pattern of usage in a remote Arnhem Land community. Much of the controversy about whether kava is a harmful or benign substance proceeds on the erroneous premise that its effects can be deduced solely from examination of its pharmacological properties.

In the remainder of this section, we describe briefly (1) the pharmacological and toxicological properties of kava, (2) the use of kava in Pacific Island countries and (3) the introduction of kava to Arnhem Land.

2.3. Pharmacological and toxicological properties

Pharmacologically, kava is classified as a psychotropic agent (Lebot *et al.* 1992; Meyer 1979; Jamieson *et al.* 1989; Jamieson and Duffield 1990b) - a drug that affects psychic function, behaviour or experience. According to Hocart (1929, p. 59):

> "It gives a pleasant, warm, and cheerful, but lazy feeling, sociable, though not hilarious or loquacious; the reason is not obscured."

The effects of kava have also been described as a gentle stimulation followed by depression. Kava also possesses other pharmacological actions including sedation (a calming effect), hypnosis (sleep producing effects) and analgaesia (reducing pain sensation) as well as local anaesthetic, muscle relaxant and anticonvulsant effects (Lebot *et al.* 1992; Meyer 1979; Jamieson *et al.* 1989; Jamieson and Duffield 1990a,b).

Like any crude vegetable drug, kava is a complex mixture of substances. The main group of active compounds of pharmacological interest has been a group of fat-soluble kava pyrones found in kava resin (Duffield and Jamieson 1988). However, the water soluble fraction may also contribute to the effects (Jamieson *et al.* 1989). Kava contains no alcohol (Shulgin 1973). It may vary in composition and effects depending on the part of the plant used, whether it is powdered or fresh, the plant type used, the area in which the plant has been produced and the method used to prepare it for consumption (Lebot *et al.* 1992).

The following pharmacological effects are described as underlying mechanisms for some of the scientifically proven, relevant effects of kava. While it is possible to standardise the dose of kava compounds in experiments, it is very difficult to do this in the field. The amount and subsequent effects of kava compounds actually absorbed by a drinker depend on the method of preparation, including the amount and strength of powder used, the amount of water used and the method of mixing. The effects also depend on the quantity consumed and whether food has also been consumed as well as the age, gender, nutritional status and general health of the drinker (Gajdusek 1979; Lebot *et al.* 1992; Singh 1992; Mathews *et al.* 1988).

Most of the pharmacological effects described below are acute effects of kava consumption and follow within 20-30 minutes of drinking, as the kava is absorbed from the stomach (Gajdusek 1979; Lebot *et al.* 1992).

2.3.1. Local anaesthetic effects

A commonly reported effect of kava consumption is a rapid numbing of the mouth and tongue. In guinea pigs, some kava pyrones have been shown to be equally as potent and long lasting as some local anaesthetics used in clinical practice (Meyer 1979).

2.3.2. Muscle relaxant properties

Early reports of kava consumption described its muscle relaxant properties. Titcomb (1948) quotes a report by a Hawaiian from the last century:

> "If you are drunk with (kava), you will find your muscles and cords limp, the head feels weighted and the whole body too."

Gajdusek (1979, p. 121) also reported the ataxia (incoordination) commonly observed in kava drinkers:

> "(Tongarikins) we have seen walking a few hours after the drinking are usually somewhat ataxic, photophobic, and slowed in their reactions. A few who have had a higher dose are extremely ataxic and could return to their homes only with the assistance of their children or myself. There is no belligerency or irritability - only a quiet and friendly somnolence associated with weakness of the lower limbs and the accompanying ataxia"

Animal experiments have demonstrated that the relaxation of skeletal (or voluntary) muscles is a result of the action of kava compounds on the spinal cord rather than a direct effect on muscle (Meyer 1979). In laboratory animals, this effect has also been shown to assist in protecting against convulsions induced by strychnine (Meyer 1979).

2.3.3. Sedative and hypnotic effects

The German pharmacologist Lewin carried out much of the early scientific work on kava in the latter part of last century and a translation of a 1927 publication describes the sedative and hypnotic effects of kava:

> "When the mixture is not too strong the subject attains a state of happy unconcern, well-being and contentment, free of physical or psychological excitement……..(When the consumption is excessive) the drinker is prey to exhaustion and feels the need to sleep more than any other sensation. He is overcome with somnolence and finally drifts off to sleep. His sleep is similar to that induced by alcoholic inebriation and the subject comes out of it grudgingly. The effect lasts for about two hours, sometimes longer and up to eight hours" (Lebot *et al.* 1992, p. 58).

Animal experiments using rats have suggested that kava constituents may exert their sedative and hypnotic effects in a similar fashion to the benzodiazepine group of drugs (Jussofie *et al.* 1994) which include diazepam *(Valium)* and oxazepam *(Serepax.)* Other research has questioned this finding (Davies *et al.* 1992) and the way in which kava exerts sedative and hypnotic effects remains unknown. However, the sedative and relaxant effects of kava are relatively mild when compared to diazepam and oxazepam (McKay 1995). Animal experiments have also demonstrated additive effects and interactions between kava and barbiturates for sleeping time (Keller and Klohs 1963) and between kava and alcohol for sleeping time (Jamieson and Duffield 1990b).

2.3.4. Analgaesic effects

> "Women drink fresh masticated kava root as an anaesthetic when they are being tattooed" (Lebot *et al.* 1992).

Kava has long been reported to have be used within traditional South Pacific culture for its potent pain reducing properties (Lewin 1931, pp. 215-225; Keller and Klohs 1963). Over eight constituents of kava have been shown to have analgaesic activity in mice and other experimental animals, but were shown to act in a different way to opiate analgaesics such as morphine (Meyer 1979; Jamieson and Duffield 1990a).

2.3.5. Effects on vision

One of the acute effects of kava consumption is photophobia (a wish to avoid bright light) (Gajdusek 1979). Frater (1952) observed that a group of students who had consumed kava had dilated pupils which reacted very slowly to light. Similarly Garner and Klinger (1985) observed that a 32 year old male who had ingested kava also had dilated pupils and a reduced near point of vision, reduced ability for the eyes to converge on an object and disturbance to the oculomotor balance (i.e. the balance between muscles controlling eye movement) (Garner and Klinger 1985). The authors concluded that these effects probably resulted from the effects of kava on the central nervous system. However, they could find no deterioration in perceptual aspects of visual "sharpness" in their subject.

2.3.6. Effects on perception, memory and learning

Some human experimental work has been carried out on the acute effects of standard kava extracts on perception, memory and learning in order to test assertions by manufacturers of kava-based products regarding the beneficial effects of these products (Munte *et al.* 1993; Heinze *et al.* 1994). Comparisons were made between the performance of volunteers in undertaking a number of psychological tests after receiving a placebo, a 75mg dose of oxazepam *(Serepax)* and 200mg of a kava extract *(WS 1490)* (Heinze *et al.* 1994). It was concluded that the kava extract produced a positive effect on attention and memory processing. Similar experiments have also suggested a beneficial effect of kava extract on word recognition tests (Munte *et al.* 1993).

Other kava extract studies with human subjects have suggested a marked improvement in concentration tasks in individuals receiving 300 mg of kava extract *(WS 1490)* per day (Herberg 1993). Assuming that the extract contains 70% kava lactones (Backhauβ and Krieglstein 1992), and that dried rootstrock has a kava lactone concentration of 15-20% (Lebot *et al.* 1992), these doses are equivalent to approximately 1.0-1.5 gram of kava. By comparison, heavy kava users in Arnhem Land are reported to consume between 300-400 grams per week (Mathews *et al.* 1988).

An Australian study carried out by Prescott *et al.* (1993) found that the acute administration of kava (200g/person) did not significantly affect cognition, although there was a trend to poorer performance. However, subjects reported marked feelings of intoxication with this relatively high dose.

Evidence concerning possible interactive effects of kava and alcohol is considered separately below, in chapter five.

Notwithstanding the findings reported above, the effects of chronic kava use on cognition remain unknown, particularly at the levels of consumption reported in Arnhem Land.

2.3.7. The development of tolerance to kava

Drug tolerance is defined as the need to increase the dose to achieve the same effect. Tolerance is commonly associated with the development of dependence (Jaffe 1990).

Duffield and Jamieson (1991), using mice, found that there was a rapid development of tolerance to the effects of an intraperitoneal injection of aqueous kava extract in producing a loss of muscle control and reducing spontaneous activity (Duffield and Jamieson 1991). A lipid extract (i.e. kava resin) did not produce the same effect.

The results of these experiments were paradoxical because the active ingredients of kava are mainly found in the resin rather than the water-soluble extract and it was concluded that the tolerance was probably due to an unknown, water-soluble active ingredient (Duffield and Jamieson 1991). Furthermore, the water soluble extract was found to be pharmacologically inactive when given orally to mice (Duffield and Jamieson 1991). Nevertheless, it was suggested that while heavy kava users may become tolerant to *some* effects of the drug, to other effects, tolerance may not occur.

2.4. Kava in the Pacific

Lebot *et al.* (1992) describe kava in those Pacific Island countries where it has long been used as part of political, religious and economic systems. In the political domain, drinking practices provide a means of expressing social relationships, defining social statuses and symbolising resolutions of conflict. At the same time, these practices also serve to regulate consumption. In the religious domain, kava is a vehicle for communicating with gods and ancient spirits, and for obtaining inspiration. It is also an important component of island economies, especially for Fiji, Tonga and Vanuatu (Lebot *et al.* 1992, pp. 119-174). Fiji's kava crop, for example, is said to be worth in the order of $100 million annually (South Pacific Forum Secretariat 1995). According to the South Pacific Forum Secretariat, kava exports are an increasingly important foreign exchange earner for several Forum Island Countries, with demand being driven largely by the European pharmaceutical industry. In 1995, for example, one German pharmaceutical company placed an order for 100 tonnes of dried kava with the intention of manufacturing an anti-stress pill to be marketed in Southeast Asia (South Pacific Forum Secretariat 1995).

A recent report on the activities of the Port Vila-based Kava Kompany refers to ten new products said to have been introduced onto the US market, including *Mellow Out*, a blend of kava and a Chinese herb selling for $US90 per litre bottle; *Kavatrol*, a 30-capsule packet sold for less than $US9 and directed to the 'jet-lag' market; *Liquid Kalm*, an after dinner syrup for stress relief, and *Erotikava*, a 200 ml bottle of syrup recommended for use after dinner, with candlelight and soft music! (Seneviratne 1997).

In 1994, Australia imported $606,500 worth of kava from Fiji, making it the second largest importer of Fijian kava, after Germany (with a significant difference: whereas German demand, being mainly pharmaceutical, was for dried kava roots, Australian imports were largely in the form of dried pounded kava - for consumption) (South Pacific Forum Secretariat 1995).

In some places, kava has also become a symbol of emerging national identity. For example, in 1990 (the same year, coincidentally, that the National Health and Medical Research Council in Australia officially designated kava as a Schedule 4 drug) Vanuatu issued a postage stamp that denoted kava as 'the national plant'. Kava cups also appear on the Pohnpei state flag and the official State Seal (Lebot *et al*. 1992, p. 208).

2.5. Kava in Arnhem Land

The events associated with the introduction of kava into Arnhem Land have been well documented although, it should be noted, all written accounts are by non-Aboriginal

observers (Hoyles 1982; Downing 1985; Alexander *et al.* 1987; d'Abbs 1995). Only a brief summary will be given here.

Kava entered Arnhem Land via Yirrkala community, following a visit to Fiji late in 1981 by a group of Yolngu men in the company of a Fijian community worker employed at the time by the Uniting Church Aboriginal Advisory and Development Services (AADS) (Alexander *et al.*. 1987). The purpose of the visit was to study village development, but while in Fiji the visitors were offered kava, and became attracted to its potential use in their own community as a recreational beverage that had mind-altering properties but that did not lead to violence - in contrast to excessive alcohol use which, at the time, had attained what one contemporary observer described as 'epidemic proportions' (Hoyles 1982). Following the men's return to Yirrkala, they arranged for continuing supplies of kava through an importer based in Sydney.

In 1982, another AADS-employed Fijian community worker was instrumental in introducing men from the island community of Warruwi (Goulburn Is.) to kava at Yirrkala, and over the next two years its use spread to a number of other coastal and island communities (Alexander *et al*. 1987, p. 14).

Two points should be kept in mind regarding the introduction of kava to these communities. Firstly, all of them had previously banned the supply and consumption of alcohol from the communities. Secondly, although a number of non-Aboriginal individuals played a key role at this time in facilitating the supply of kava, the decision in these communities to import kava was taken by Aboriginal people themselves. (This is not to say that support for kava has ever been unanimous in these communities. As is pointed out below, one of the most intractable aspects of kava-use as a regulatory issue remains the diversity of views within many communities about the desirability or otherwise of having access to kava.)

According to Hoyles (1982), who provides an early account based on one community, early usage patterns were modelled, not on ceremonial traditions of kava-drinking, but on a style of social drinking prevalent in many Pacific Island towns. A particular attraction was the kava bowl, which became a focal point for drinking 'parties', providing the fellowship of alcohol without the attendant violence. 'Kava parties' in this community commenced around 3 pm with two or three people, growing to about twenty by midnight, and including alcohol drinkers and non-drinkers alike.

Russell (1985), in another early account, states that in most communities, homeland resource centres or other community groups ordered kava from importers in Sydney and Canberra, who in turn imported kava powder direct from Fiji and Tonga. In these cases, Russell claimed, at least some of profits from the sale of kava were retained in the community. However, Russell also referred to European entrepreneurs who sailed boats around the coastal communities, selling petrol, cigarettes, other supplies - and kava. According to Russell, retail expenditure on kava in 1985 amounted to $773,000.

Kava at this time was classified by Australian Customs as a 'food substance' (Gregory and Cawte 1989). Powdered kava was imported into Australia under a tariff item as 'preparation for making non-alcoholic beverages' which would normally attract a duty of 5%. However, as Fiji and Western Samoa were classified as developing countries, it was admitted duty free, and was also tax exempt.

Almost from the moment of its introduction, kava generated controversy. Anecdotal reports claimed that drinkers were engaging in all night 'binges', to the detriment of their own and their families' health, and that the ensuing absenteeism was causing a virtual breakdown in the maintenance of essential community services. It was also alleged that children as young as eight years were drinking kava[1].

Other allegations focused on suppliers. Some non-Aboriginal officers stationed in communities were said to be using their official communication facilities to bring kava in from wholesalers in Sydney and Canberra in order to sell it in the communities at considerable profit. Even more serious were suggestions that the Uniting Church (which had mission-based links with most kava-using communities) was implicated in the promotion and sale of kava. Kava, according to one observer at the time, was known as 'the church drink' (Nance 1984). In a report prepared for the church's Northern Synod in 1984, a committee of the church acknowledged that individual church employees had been involved in the introduction and distribution of kava, but argued that they had done so as private individuals, not as representatives of the Uniting Church or its policy (Russell 1985).

Within this context of controversy and allegation, the NT Government turned to the Drug and Alcohol Bureau (DAB) of its own Department of Health for advice on an appropriate policy response. In a series of statements between 1983 and 1985 a departmental position, endorsed by the NT Government, took shape. The main elements of the position were:

- in the absence of clear evidence of its having addictive properties, kava should not be defined or treated as a drug;
- the only adverse health consequence that had been shown to be definitely caused by kava was a dermatitis-like skin condition which only occurred after regular heavy consumption, and which disappeared when consumption stopped or was reduced;
- a number of social and economic problems appeared to be associated with consumption patterns in Arnhem Land, such as absenteeism and disruption to eating routines; these, however, were problems arising out of the manner in which kava was being used, and could not be attributed to kava per se;
- kava also appeared to have beneficial consequences, especially with respect to alcohol-related problems;
- while further monitoring and research into the impact of kava on the health of Arnhem Landers was needed, there was insufficient evidence of adverse consequences to warrant banning or restricting kava. Communities should be left to make their own decisions (d'Abbs 1995).

This position was further endorsed following publication of the first major study of kava use in Arnhem Land in 1987. The study, by Alexander *et al.* (all of whom worked for the DAB), was based on a sample survey of drug use in non-urban Aboriginal communities conducted in 1986 (Alexander *et al*. 1987). The authors reported that kava use had in fact *declined* from the levels prevalent in the early 1980s. Of 11 communities said to have been using kava in 1983, five were reported as having subsequently imposed bans on consumption, and even in those communities where kava was still available, consumption had declined. Expenditure

[1] Throughout the remainder of this section, allegations and reports such as this, unless otherwise sourced, are taken from files of the Drug and Alcohol Bureau, NT Department of Health and Community Services.

on kava was considerable - estimated at $2,000 per week in one community; $2,800 in another - but similar to expenditure on cigarettes and tobacco.

In kava-using communities, it was estimated that 71% of men aged 15 and over, and 20% of women drank kava. An average kava drinker would consume 1.6 litres of kava beverage per sitting. Most drinkers reported consuming kava at least once a week, and 21% reported drinking every day. The report stated that, contrary to claims that kava was being mixed more strongly in Arnhem Land than in the South Pacific, Aboriginal kava drinkers were consuming a *weaker* mixture.

The authors asserted that nobody in the kava-using communities wanted kava banned, although some acknowledged a need for controls on availability. On the positive side, kava was said to function as a 'partial' substitute for alcohol; to have helped reduce alcohol-related morbidity and violence, and to have helped with urinary-genital problems. Turning to negative aspects, the authors acknowledged the occurrence of skin dryness, scaliness and discolouration, but added that 'No major health problems or deaths have been shown to be kava-related' (Alexander *et al.* 1987, p32). Referring to allegations about the time and money absorbed by kava-drinking, and associated neglect of children, the authors argued that '..these problems are not associated with kava as such, but with the social impacts of its use' (Alexander *et al.* 1987, p.32).

The authors also argued against imposing statutory controls on kava: kava-using communities, it was claimed, had demonstrated a capacity to regulate their own kava consumption.

Kava's favourable status received further endorsement around this time from the US Food and Drug Authority, which announced that it would not take action regarding kava in the absence of evidence of toxic effects on consumers.

Alexander *et al.'s* portrayal of the kava market as small and declining, however, was called into question by evidence of increases both in the size and sophistication of the kava market. By the end of 1986, a number of commercial enterprises had been established, or were in the process of being set up, in order to exploit a still legal market.

In June 1987, Aboriginal groups in Broome demonstrated against plans by two Darwin-based entrepreneurs to market kava in the Kimberley. Aboriginal Affairs Minister Ernie Bridge, himself an Aboriginal resident of the area, responded to these moves by imposing a three-month moratorium on the sale of kava in WA.

Later in the same year, a delegation of 10 Aboriginal adults from the Kimberley and Pilbara regions of WA, together with one non-Aboriginal person, visited the NT in order to investigate the effects of kava use. Following the visit, several members of the delegation published scathing attacks on the NT Drug and Alcohol Bureau. One member claimed that DAB officers “gave us first class sales promotion talks on kava and told us there were no side effects, but rather it is a mild sedative for a good night's sleep after a 24 hour session of kava drinking' (Assan 1987, p. 22).

The delegation also reported concerns from Aboriginal people who felt that they were being used as 'guinea-pigs' in experimental research on the effects of kava being conducted by the Menzies School of Health Research (Drury *et al.* 1987).

These concerns arose out of a pilot study being conducted by the Menzies School in a kava-using coastal community. In November 1987, the School released a preliminary statement of results from the study. The findings were very different to those reported by Alexander *et al.* earlier in the same year. Kava drinkers, the Menzies researchers reported, were more likely than non-drinkers to suffer from general ill health, including shortness of breath and characteristic skin rash; malnutrition, with 20 per cent loss of body weight, 50 per cent loss of body fat and other biochemical changes; liver damage, with biochemical changes similar to those caused by large doses of alcohol; and other changes in red blood cells, white blood cells and platelets.

The statement concluded that, while further research was needed, it appeared that heavy kava consumption was very harmful to health and should be discouraged, and that steps should be taken to prevent the introduction of kava into Aboriginal communities where it was not already available.

A more detailed account of the Menzies School findings was subsequently published in The Medical Journal of Australia in June 1988 (Mathews *et al.* 1988), and the following month The Lancet editorialised on the kava issue (The Lancet 1988).

Critics of the Menzies School study subsequently argued that not all of the health effects observed could confidently be attributed to kava. Douglas (1988) suggested that concomitant alcohol consumption might also have been implicated, while Lebot *et al.* (1992) claimed that previous alcohol use, current heavy tobacco use and generally poor levels of health might also have contributed to the findings.

In the meantime, however, release of the Menzies School's preliminary findings strengthened official concerns about the effects of kava. The National Health and Medical Research Council (NHMRC) immediately issued a statement asserting that the effects of long term kava use had not been adequately studied, and that further use should be discouraged (McKay 1995, p. 16). The NHMRC resolution was noted at the November 1987 meeting of the Ministerial Council on Drug Strategy (MCDS), a joint Commonwealth, State and Territory body that presided over the National Campaign Against Drug Abuse, which immediately convened a working party to consider the findings and make recommendations for future research and policy. In March 1988, the working party reported back to MCDS with a series of recommendations that were formally adopted by the Ministerial Council. Under these recommendations, kava use was to be 'actively discouraged', advertising of kava was to be restricted, and importation monitored. The working party did not advocate a ban on kava, arguing that any decision to restrict or ban its use should be a matter for State and Territory governments.

The first legislature to restrict the sale and supply of kava in Australia was Western Australia, which in July 1988 invoked section 22 of the *W.A. Poisons Act*, which allowed for prohibition of the sale, supply and promotion of designated substances by proclamation. The Act did not outlaw *possession* of kava, and in fact the proclamation made provision for Pacific Islanders and others who might wish to use kava for traditional purposes to seek

ministerial permission to do so. But by prohibiting the sale and supply of kava, the measure effectively banned it use in Western Australia.

In May 1990 the Northern Territory Government announced that, as from 15 June, the sale or supply of kava within the NT would be prohibited under the *Consumer Protection Act*, except with the written approval of the Minister, and in accordance with any conditions stipulated by the Minister (Northern Territory of Australia 1990, p.2). The objective of the NT legislation was not to ban kava, but rather to regulate its sale and supply. All kava-using communities were asked to indicate whether or not they wished kava to continue to be available in those communities. In the case of those answering in the negative, the sale and supply of kava henceforth became prohibited. In the others, kava was to be sold only through the local council or some other non-profit making, accountable body; sales were to be subject to an upper limit of 50 grams of kava powder per person per day; kava was to be sold only to residents of the community aged 18 and over; the council or authorised retailer was to obtain kava only from approved wholesalers, and records were to be kept of all transactions (d'Abbs 1993, p. 11).

It quickly became apparent during the consultations that followed the introduction of the new legislation that in most communities kava was an issue about which opinions tended to be polarised. Five communities voted to retain kava, while the remaining three elected to ban it, although in two of these the decision was vigorously opposed by substantial minorities.

Over the next few months, retail kava licences were issued in each of the five communities that had opted to continue using kava. A sixth retail licence was also issued to a homeland centre affiliated to one of the communities that had voted to ban kava. One of the retail licences also authorised the council concerned to import kava directly, rather than having to purchase from another wholesaler. The remaining licence issued was a wholesale licence to Bungardi Trading Pty Ltd, a Darwin-based company that, over the years of unregulated kava sales, had established itself as the dominant importer and supplier of kava throughout the region.

In October 1992, a little over two years after introduction of control measures in the Northern Territory, the NT Department of Health and Community Services engaged the Menzies School of Health Research to conduct a review of the measures and to recommend any changes that might be needed (d'Abbs 1993).

The review concluded that the attempt to create an orderly, regulated retail system had failed, for three main reasons: firstly, community councils were ill-prepared and ill-suited to administering a system of controlled supply of kava, a task which in many cases fell upon organizations already struggling to fulfill other functions for which they had statutory responsibilities. Secondly, with a few exceptions, the Government had neither helped councils or other retailers to meet their requirements, nor monitored their activities to ensure compliance. Thirdly, and not surprisingly, entrepreneurs both Aboriginal and non-Aboriginal had wasted little time in seizing opportunities created by this poorly policed system to use it to their own advantage. The result was that the kava trade had become a lucrative resource for a few individuals, and a source of considerable unaccounted transfers of funds.

Any effect that the measures might have had, moreover, appeared to have been short-lived. d'Abbs found that kava sales had risen steadily throughout the latter half of the 1980s, from

an estimated mean of 166 kilograms per month between January and June 1986 to 2,287 kg per month between January and June 1990 - more than a thirteen-fold increase. Following the introduction of controls, sales fell away for about six months, after which they climbed steadily back to their previous levels (d'Abbs 1993, pp. 14-17).

The report recommended a number of amendments to the existing system, in particular, the introduction of a 'deeming provision', under which any person found in possession of kava in excess of a stipulated quantity would be deemed to be in possession for purposes of sale or supply unless he or she could prove otherwise (an attempt to give police powers to act against illegal traders), simplification of the 'red tape' requirements placed on licensed retailers, more regular monitoring to ensure licensees' compliance, and greater assistance to councils and other bodies in meeting their requirements under the measures (d'Abbs 1993, pp. 6-8).

In August 1993 the Northern Territory Cabinet approved the drafting of a Kava Control Bill. However, work on preparing the bill subsequently came to a virtual standstill as a result of events that had begun to unfold in Canberra, where the Commonwealth Government had begun to become involved in the regulation of kava in May 1990. At that time, the Drugs and Poisons Scheduling Committee of the National Health and Medical Research Council (NHMRC) met to consider a request from the NT Department of Health and Community Services that kava be placed on the Standard for the Uniform Scheduling of Drugs and Poisons. No other States or Territories opposed the idea, and in September of that year the NHMRC formally placed kava on the S4 Schedule, which covered

> Poisons that should, in the public interest, be restricted to medical, dental or veterinary prescription or supply, together with substances or preparations intended for therapeutic use, the safety or efficacy of which requires further evaluation (National Health and Medical Research Council 1989, pp. vii-viii).

For the first time, kava was officially designated in Australia as a drug. In the event, the designation was to prove to be something of an empty gesture. It did, however, lead to two additional regulatory agencies becoming drawn into what was rapidly becoming a tangled bureaucratic net. In February 1991 a new Commonwealth *Therapeutic Goods Act* came into effect, under which all drugs listed under any Schedule of SUSDP automatically became 'registerable' under the new Act, and thereby subject to a range of new requirements and restrictions relating to manufacture, importation and sale or supply across State and Territory borders (Commonwealth of Australia 1990). In particular, any person or organisation wishing to import kava into Australia would have to register their product, which in turn entailed a range of clinical and toxicological tests, the costs of which were to be borne by the importer. A transitionary 'grandfathering' provision in the new legislation allowed a period of several months within which already established importers of registerable goods could obtain registration without having to meet all of the new requirements. Bungardi Trading Pty Ltd, the Darwin-based kava importer referred to above, successfully sought registration under the 'grandfathering' provisions, as did a Sydney-based importer - Fiji Market (Whiteaker 1995).

At around the same time, a third Commonwealth Government instrumentality - the National Food Authority - also became involved in kava regulation. In August 1991, the NFA received a proposal from the NHMRC Food Science and Technology Subcommittee under which the NFA was to develop a list of 'prohibited botanicals' to be incorporated into the Food

Standards Code under Standard A12 - 'Metals and contaminants in Food'. As a Schedule 4 drug, kava was automatically on the list of 'prohibited botanicals'. Over the next two years, the NFA developed a draft standard for the National Foods Standards Council, submitting it in August 1993. On 9 March 1994 the new standard was gazetted (McKay 1995).

Clause 8(a) of the new Standard A12 stated that 'a plant or a part or a derivative of a plant listed in the Table to this clause, or any substance derived therefrom, must not be added to food or offered for sale as food' (McKay 1995).

This meant that, from March 1994 the importation and commercial supply of kava or kava products was legally prohibited in Australia, and any consignment arriving in Australia was liable to be impounded by the Australian Quarantine Inspection Service (McKay 1995; Whiteaker 1995).

One immediate consequence was that the Northern Territory's own legislation controlling the sale and supply of kava was undermined, as it was considered to be in conflict with the National Food Standards Code (Northern Territory Legislative Assembly 1996). As a consequence, licences issued by the Northern Territory Government were suspended, while the NT sought to clarify its position *vis a vis* the Commonwealth. For its part, the Commonwealth agreed to take no action pending a clarification of the whole kava situation.

The main beneficiaries of this turn of events were kava black-marketeers. Suspension of the NT's regulatory system meant that there were no longer any legally authorised suppliers of kava in the NT. The undertaking by the Commonwealth not to enforce the new prohibition on importing kava meant that *non-authorised* suppliers were immune from any danger of prosecution, as they exploited the market opportunities created by the suspension of legal licences. It was in these extraordinary circumstances that the thriving black market trade in kava, described elsewhere in this report, evolved.

At the Commonwealth level, the rush to regulate kava which characterised the early 1990s quickly gave way to a legislative retreat. In August 1991, faced with the criticism that the decision to place kava on the S4 Schedule represented an over-reaction, the Drugs and Poisons Scheduling Committee of NHMRC moved to reconsider its decision. Twelve months later the Committee recommended that kava be *removed* from the S4 Schedule, a decision that took official effect on 14 July 1993 (McKay 1995, p. 30).

Within a few months, the Therapeutic Goods Administration had followed suit, ruling on 23 November 1993 that kava was not to be regulated as a therapeutic good unless it was distinctly presented *as* a therapeutic good - that is to say, "in a pharmaceutical dosage form with a stated dose and specific therapeutic use" (Commonwealth Department of Human Services and Health 1995).

Thus, by the time that kava became a 'prohibited botanical' under the new Food Standards Code, it was no longer a scheduled substance under the NHMRC schedule; nonetheless, as the law stood, kava could not be sold in Australia as a food, and the Northern Territory's own regulatory system was in limbo.

In February 1995 the Northern Territory Government formally applied to the National Food Authority for a variation to the Food Standards Code under which the prohibition on offering

kava for sale as a food would not apply in the Northern Territory. The application also asked that the request be fast tracked by the NFA out of session (Northern Territory Department of Health and Community Services 1995).

In response, the NFA declined the 'fast track' request on the grounds that the issue had significant implications for several groups, and advised that a full inquiry, taking up to 12 months, was required. However, it set about that inquiry expeditiously, appointing a consultant - Dr Ian McKay - who engaged in discussions with a range of stakeholders before publishing a paper - Kava: An Information Paper - in July 1995. This paper in turn provided a basis for further consultations, culminating in a two day workshop in Darwin in August 1995, attended by 46 participants representing 30 organizations (National Food Authority 1995). Among the participants were representatives of Pacific Island countries, Commonwealth Government departments, research organizations, representatives of Aboriginal communities and other Aboriginal organizations, NT Government representatives and kava traders.

While workshop participants failed to achieve consensus on how kava should be regulated, they were united in rejecting both of the two alternatives: an outright ban, or unregulated supply. They were also unanimous in the view that the inclusion of kava in Standard A12(8)(a) was unwarranted, and that some form of controlled availability was needed.

To this end, the NFA in November 1995 released for public comment a Draft National Kava Management Strategy, designed to 'provide a uniform, national restriction and monitoring of the importation of kava whilst targetting areas in Australia where kava abuse is a problem' (National Food Authority (Australia) 1995, p. 3). The strategy comprises four components. The first is a national system for restricting and monitoring the importation of kava by:

- defining kava as a 'conditionally restricted import';
- monitoring imports of kava by the Australian Customs Service through a tariff code specific to kava (it also becoming an offence to import kava under another tariff code);
- national surveillance of kava imports by the Australian Quarantine Inspection Service (AQIS) in conjunction with the Australian Customs Service on a consignment by consignment basis;
- inspection of consignments by AQIS for pests and diseases as well as for compliance with the Imported Foods Inspection Program;
- an Australia-wide requirement that all importers of kava must have a licence issued by the Commonwealth Department of Human Services and Health (as it was then called), and
- an Australia-wide requirement that kava can only be cleared from bond by importers licensed by DHSH.

The second component is a National Code of Kava Management, which all importers, wholesalers, retailers and distributors of kava must sign and abide by, with an additional requirement that kava for resale can only be supplied to a person or persons who are signatories to the National Code of Kava Management. Amongst other provisions the code prohibits the sale or supply of kava to any person under the age of 18 years, requires suppliers to refrain from contributing to the abuse of kava, and prohibits the advertising or promotion of kava. The third component is a new addition to the Food Standards Code, Standard O10, which applies only to kava, prohibiting its use as an ingredient in another food, and imposing the following labelling requirements:

- USE IN MODERATION
- MAY CAUSE DROWSINESS
- THE SALE AND DISTRIBUTION OF KAVA IN AUSTRALIA IS SUBJECT TO THE NATIONAL CODE OF KAVA MANAGEMENT.

The fourth component is an option for States and Territories to impose their own, more restrictive legislation to address public health concerns, and to follow up with additional education and monitoring (National Food Authority (Australia) 1995).

At the time of writing, the proposed National Kava Management Strategy had not come into effect, although indications point to it being implemented in the near future.

This, then, was the context in which the present inquiry by the Sessional Committee into the Use and Abuse of Alcohol by the Community was undertaken.

2.6. Summary

Kava is a beverage prepared from the plant, Piper methysticum of the pepper family. In Australia kava is prepared for consumption by infusing imported, commercially dried and powered roots of the plant in water. Kava has been used in the Pacific Islands for ceremonial and recreational purposes for at least 3,000 years, and is today used widely in Vanuatu, Fiji, Tonga, Western Samoa and Micronesia.

Although there is evidence of it having been used by Torres Strait Islanders in the early years of the 20th century, it is only since 1981 that it has become popular in several Aboriginal communities in Arnhem Land, where it was introduced in the belief that it offered a less harmful alternative to alcohol, excessive use of which was causing damage to health and family and community life.

Pharmacologically, kava is classified as a psychotropic agent, the effects of which have been described as giving rise to "a pleasant, warm, and cheerful, but lazy feeling". Kava is a complex mixture of substances, the main active compounds being a group of fat-soluble kava pyrones found in kava resin. However, the water soluble fraction may also contribute to the effects. Kava contains no alcohol. It may vary in composition and effects depending on the part of the plant used, whether it is powdered or fresh, the plant type used, the area in which the plant has been produced and the method used to prepare it for consumption.

Most of the pharmacological effects of kava described in the literature refer to acute effects of consumption, following within 20-30 minutes of drinking, as kava is absorbed from the stomach. The effects associated with chronic consumption are poorly documented.

The main effects reported are:
- local anaesthetic effects - rapid numbing of the mouth and tongue;

- muscle relaxant properties, commonly manifested as ataxia (incoordination), apparently a result of the action of kava compounds on the spinal cord rather than a direct effect on muscles;
- sedative and hypnotic (sleep-producing) effects, comparable to those of benzodiazepine drugs; however the mechanisms by which kava exerts these effects remains unknown;
- analgaesic (pain-reducing) effects;
- photophobia (a wish to avoid bright light).

Some human experimental work has been conducted on the acute effects of kava on perception, memory and learning. Experiments using a kava extract equivalent to 1.0-1.5 grams of kava suggest that the extract produced a positive effect on attention, memory processing and concentration. (However, consumption levels by kava drinkers in Arnhem Land are vastly higher than the levels here reported.). A study involving administration of 200grams of kava per person found no significant effect on cognition, although there was a trend to poorer performance.

Evidence concerning possible interaction effects between kava and alcohol is summarised separately below.

Evidence regarding the association between kava and tolerance (the need to increase the dose to achieve the same effect) is inconclusive. One study, using mice, found evidence of a development of tolerance to effects of an acqueous kava extract, but not to the lipid extract (kava resin) which contains most of the active ingredients of kava. It has been suggested that heavy kava users may become tolerant to *some* effects of the drug, while to other effects, tolerance may not occur.

Notwithstanding the findings reported above, the effects of chronic kava use on cognition remain unknown, particularly at the levels of consumption reported in Arnhem Land.

Kava is an integral part of the political, religious and economic systems in Pacific Island countries, and is widely used in Fiji, Vanuatu, Tonga, Western Samoa and Pohnpei (Federated States of Micronesia). In many contexts, drinking practices also serve to regulate consumption.

As an export earner for these countries, particularly Fiji, Tonga and Vanuatu, kava is increasingly important, with Fiji's kava crop estimated to be worth $100 million annually. The demand for kava exports is largely being driven by the European pharmacological industry, although kava-based products are also being marketed in the US for a range of purposes, including stress-relief and as an aphrodisiac. In 1994 Australia was the second largest importer of Fijian kava, after Germany. However, unlike Germany which imported mainly dried kava roots for pharmacological use, Australian imports were largely in the form of dried pounded kava for consumption.

In some parts of the Pacific, kava has also become a symbol of national identity. In 1990, for example (the same year that kava became officially designated in Australia as a 'Schedule 4' drug) Vanuatu issued a postage stamp denoting kava as 'the national plant'.

Kava was introduced to the Yirrkala community in 1981 following a visit to Fiji by members of the community, who saw a potential for kava to be used as an alternative to alcohol, which

had been associated with violence and disruption in the community. Over the next two years, use of kava spread to a number of other coastal and island communities in Arnhem Land, all of which had previously banned the supply and consumption of alcohol.

Since its introduction, kava has been a matter of controversy, with claims concerning its perceived benefits as an alternative to alcohol countered by allegations of negative social and health consequences.

Initially, the Northern Territory Government, acting on advice from the Drug and Alcohol Bureau of the NT Department of Health, took the position that kava should not be defined or treated as a drug and that communities should be left to make their own decisions about the introduction of the substance. This policy was supported by the first major study of kava use in Arnhem Land, by Alexander *et al* in 1987, which reported that kava use had declined from the levels prevalent in the early 1980s. The report also stated that, contrary to claims that kava was being mixed more strongly in Arnhem Land than in the South Pacific, Aboriginal kava drinkers were consuming a *weaker* mixture. The report concluded that 'No major health problems or deaths have been shown to be kava-related'.

However, in the same year, the Menzies School of Health Research released results of a pilot study of kava users in Arnhem Land which suggested that heavy kava use was harmful to health and therefore should be discouraged. Kava drinkers were reported to be more likely than non-drinkers to suffer from general ill health, including shortness of breath and characteristic skin rash; malnutrition, with 20 per cent loss of body weight, 50 per cent loss of body fat and other biochemical changes; liver damage, with biochemical changes similar to those caused by large doses of alcohol; and other changes in red blood cells, white blood cells and platelets.

Critics of the Menzies study argued that not all of the reported effects on health could be attributed to kava.

The first legislature to restrict the sale and supply of kava in Australia was Western Australia, which in July 1988 invoked section 22 of the *W.A. Poisons Act*, which allowed for prohibition of the sale, supply and promotion of designated substances by proclamation. The Act did not outlaw *possession* of kava, and in fact the proclamation made provision for Pacific Islanders and others who might wish to use kava for traditional purposes to seek ministerial permission to do so. But by prohibiting the sale and supply of kava, the measure effectively banned it use in Western Australia.

In 1990, the Northern Territory Government announced that, as from June, the sale and supply of kava in the NT would be prohibited under the *Consumer Protection Act*, except with the written approval of the Minister, and in accordance with any conditions stipulated by the Minister. All kava-using communities were asked to indicate if they wished kava to remain available in those communities. In those that did not wish to retain kava, its sale and supply henceforth became prohibited. In the others, kava was to be sold only through the local council or some other non-profit making, accountable body; sales were to be subject to an upper limit of 50 grams of kava powder per person per day; kava was to be sold only to residents of the community aged 18 and over; the council or authorised retailer was to obtain kava only from approved wholesalers, and records were to be kept of all transactions.

Five communities elected to retain kava, while another three voted to ban it, although in two of these the decision was vigorously opposed by substantial minorities.

In October 1992, a little over two years after introduction of these measures, the NT Department of Health and Community Services engaged the Menzies School of Health Research to conduct a review of the measures and to recommend any changes that might be needed.

The review concluded that the attempt to create an orderly, regulated retail system had failed, for three main reasons: firstly, community councils were ill-prepared and ill-suited to administering a system of controlled supply of kava; secondly, with a few exceptions, the Government had neither helped councils or other retailers to meet their requirements, nor monitored their activities to ensure compliance, and thirdly, entrepreneurs had seized opportunities created by this poorly policed system to use it to their own advantage.

Any effect that the measures might have had on consumption appeared to have been short-lived. The review found that kava sales had risen steadily throughout the latter half of the 1980s, from an estimated mean of 166 kilograms per month between January and June 1986 to 2,287 kg per month between January and June 1990 - more than a thirteen-fold increase. Following the introduction of controls, sales fell away for about six months, after which they climbed steadily back to their previous levels.

In the meantime, several Commonwealth Government agencies had become involved in attempts to regulate kava. In September 1990 kava was officially designated as a 'Schedule 4' drug by the National Health and Medical Research Council. In February 1991 a new Commonwealth Therapeutic Goods Act came into effect, under which kava, as a Schedule 4 drug, automatically became registerable, and thereby subject to a range of new requirements and restrictions relating to manufacturer, importation, sale and supply. In August 1993 the National Food Authority submitted a new draft standard to the National Food Standards Council, under which kava was included in a list of 'prohibited botanicals', the importation and commercial supply of which was thereby prohibited.

However, in the same year the National Health and Medical Research Council *rescinded* its decision to place kava on Schedule 4. Within a few months, the Therapeutic Goods Administration followed suit, declaring that kava under most circumstances would not be regulated as a therapeutic good.

The National Food Authority's declaration of kava as a 'prohibited botanical', however, which took effect in March 1994, was in conflict with the NT's regulatory system. The NT Government then took two steps: first, it suspended existing licences for the sale of kava; secondly, in February 1995 it formally sought exemption from the provisions of the new Standard.

In response, the Commonwealth agreed to take no action under the new regulations, while the NFA convened a major inquiry into the whole issue of kava regulation.

The immediate beneficiaries of this chain of events were black marketeers. Suspension of the NT's regulatory system meant that there were no longer any legally authorised suppliers of kava in the NT. The undertaking by the Commonwealth not to enforce the new prohibition

on importing kava meant that *non-authorised* suppliers were immune from any danger of prosecution. Herein lie the origins of the thriving black market we see today.

The NFA's inquiry culminated in November 1995 in the release of a Draft National Kava Management Strategy, comprising four components:

- a national system for restricting and monitoring the importation of kava;
- a National Code of Kava Management by which all importers, wholesalers, retailers and distributors must abide;
- a new addition to the Food Standards Code, Standard O10, which would apply only to kava. This would prohibit kava's use as an ingredient in other food and require labelling on packages of kava; and
- an option for States and Territories to impose their own, more restrictive legislation to address public health concerns and follow up with education and monitoring (National Food Authority (Australia) 1995).

At the time of writing this report, the proposed National Kava Management Strategy had not come into effect, although indications point to it being implemented in the near future.

3. CURRENT SUPPLY AND USE OF KAVA IN ARNHEM LAND

3.1. Current supply systems

Since 1995, when regulations governing the sale and supply of kava in the Northern Territory were suspended following the National Food Authority's gazettal of a new standard which designated kava as a 'prohibited botanical', there have been no legally authorised provisions in place for the sale and supply of kava throughout the NT. Despite this state of affairs, (or because of it?) an estimated 15,000 - 20,000 kilograms of kava enters Nhulunbuy each year at present, and sells at a retail level for a value conservatively estimated as $6 million to $8 million.

(This estimate is based on two sources of information. Firstly, most of the kava currently being imported into Nhulunbuy is transported by plane; inquiries conducted by one of the authors indicated that the two national air carriers in Nhulunbuy currently convey some 300 kg - 400 kg of kava per week - with some suggestions that in recent months the amount has increased even further. The normal minimum retail price for kava in communities, as reported by many people consulted in the course of the inquiry, is $20 for a 50 gm bag. A weekly rate of 300 kg is equivalent to 15,600 kg per year, with a retail value of $6.24 million. The higher figure corresponds to 20,800 kg per year, worth $8.3 million.)

This estimate is conservative in at least two respects. Firstly, it does not include smaller consignments of kava that are imported either into Nhulunbuy or directly to communities by small-scale suppliers. Secondly, it is based on a minimum retail price. Reports of kava retailing for $30 to $40 per 50 gram bag were voiced in several communities during the Sessional Committee's consultations.

Anecdotal reports suggest that the availability of kava in Arnhem Land has increased in recent years (Thorn 1997). It appears, however, that the total amount being sold has remained similar to the high levels reported for the early 1990's. In a review of Northern Territory kava legislation conducted in 1993, d'Abbs estimated legal sales at 17,700 kg in 1990-91 and 25,280 kg in 1991-92. True sales would have included additional black market kava, but the black market at that time was not conducted on anything like the scale of today's operations (d'Abbs 1993, p. 15).

In other respects, however, the scale of the kava market in Arnhem Land has certainly grown in the last few years. Whereas in the early 1990s the retail price for a 50 gram pack of kava was usually $5 to $10, today the *lowest* price appears to be $20. Total turnover in retail kava sales has, therefore, probably doubled since 1993. (This accords with estimates prepared by E.A. Whiteaker, managing director of Bungardi Trading Pty Ltd, the largest authorised kava wholesaler in the NT prior to kava becoming a 'prohibited botanical'. In a submission to a National Food Authority inquiry in 1995, Mr Whiteaker estimated the market value of sales of Fijian kava to Aboriginal communities, based on 1992 figures, as around $3.45 million (Bungardi Trading Pty Ltd 1997).

The pervasiveness and sophistication of the illegal kava market in Arnhem Land have also grown. Most of the kava suppliers in Arnhem Land today are Tongans based in Nhulunbuy. In a particularly brazen demonstration of the lucrative profits to be made from this illicit

trade, at least some of them are in the habit of regularly flying business class to and from Sydney, returning with up to 18 suitcases and/or 30 kg boxes of kava as *excess baggage* (Stirling 1997).

The Tongan suppliers do not, in general, distribute kava themselves in Aboriginal communities; in some cases they are in fact banned from communities. Instead, they supply networks of Aboriginal retailers - in some instances up to ten or 15 distributors in a single community (Russell 1997). According to one observer, kava is now sold in at least five communities that did not apply for permits under the 1990 Northern Territory legislation (Chalmers 1997). In one of these, the traditional landowners and local community council in October 1996 combined to impose a ban on the sale of kava in the community (see Figure 3.1).

However, it is questionable to what extent any community can successfully maintain a ban in a situation where (a) opinion regarding the desirability or otherwise of kava is divided within the community itself, (b) local councils may have limited authority, and (c) the police find themselves unable to take punitive action against those responsible for importing kava into the Northern Territory in the first place. In the case of the community that imposed a ban in October 1996, for instance, a well known Tongan supplier of kava was actually present during a public meeting called on the occasion of a visit by the Sessional Committee conducting the present kava inquiry. Although he responded to a public directive from the Council Chairman to leave the community immediately, his presence in the first place was clearly an act of open defiance against the expressed wishes of the Council and landowners.

A particularly striking demonstration of the contemporary expansion of the trade in kava can be seen in one large central Arnhem Land community where, although kava has been available for many years, mainly through proximity with a neighbouring, kava-using community, it has never been popular or officially endorsed by either the landowners or the community council. Unlike the more established kava-using communities, this community has not banned alcohol, but rather has struggled to establish patterns of controlled consumption, by limiting the amount of alcohol that can legally be brought in to two cartons of beer per person per fortnight, via barge. From mid 1996 onwards, at a time when there was evidence of social and political disharmony among a number of key community organisations, the use of kava began to increase rapidly. The health and social implications of this change are discussed further below. But one example can be given here as indicative. Prior to the growth of kava sales, the local community sustained ten football teams in a vigorous wet season competition that culminated in a grand final played before more than 600 people.

By March 1997 the football competition had collapsed. The March/April edition of the local school newspaper Manayingarirra Djurrang reported tersely "No draw, no umpires, no games. Very sad". This change, like many others that have occurred, was attributed by local observers to the upsurge in kava drinking.

Our inquiries indicate that, in this community, five Aboriginal individuals each operate independently to retail kava. Of these, two obtain their supplies from other communities, while the remaining three are served by a supplier based in Nhulunbuy, who brings consignments of kava to the community by charter flight. It appears that, on average, the Nhulunbuy-based supplier delivers four to six 25 kg boxes of kava to the community each

week - that is 100-150 kg of kava. In this instance, the 50 gram bags reportedly retail for $25, giving each kilogram of kava a 'street value' of $500, and the weekly total of 100-150 kg a total retail value of $50,000-$75,000.

Figure 3.1: Notification of decision by one community to ban kava

Use of Kava

Traditional Landowners

Alfred Wunbaya, Henry Nupurra, Geoffrey Gurnwanawuy, Wilson Landydjura, David Djangi, Dick Galnadiwuy, Richard Gandhuwuy, D. Bepuka, J. Djakiya, W Danydjati, D. Jingal, J Danatana, J Djilila,

wrote to the council asking for support for their meeting of Monday 23rd September to discuss the problems that Kava drinking is causing in the community.

*Families starving
*Sleeping all day
*Skin disorder and other health problems
*Traditional values (Gurrutu Rom)
*Money is wasted on unhealthy food
*marriage system is being ignored
*husbands give hard times for their wives
*Children are not being cared for
*AII manygay being sung most of the time during Kava drinking
*Preventable deaths are being caused by kava and alcohol.
*We have decided that once the kava is finished, there will be no more kava ever sold in this community.

No kava will be available for selling or consuming from Monday 14th October 1996.

By Order of the Council
2nd October, 1996

Nhulunbuy MLA Syd Stirling has described in the NT Legislative Assembly the classic procedures used by one Tongan kava seller to engage an Aboriginal distributor in one community.

> I have a copy of a letter in my office that a man wrote recently. A teacher in a homeland school in a small community was given $1200 by an Aboriginal person to deposit in a Tongan-named account in Sydney when he returned to Nhulunbuy. It was said to be $1200 to buy clothing. The person who was given the $1200 did not reach Nhulunbuy that day to deposit the money and received an intimidating phone call that night from a Tongan in Sydney demanding to know where the $1200 was and why it was not in his account. All manner of threats were then made in relation to that $1200. The person explained that they had the $1200 in their possession, that they had not been able to get to town that day, but that they would be at Nhulunbuy the following day to deposit the money in the account.
>
> Once that was understood and the conversation relaxed a little, the Tongan went on to make the following offer. He said: "I will send you a supply of kava, free at this stage. It is $10 a bag. You can sell it at $20 a bag and keep the $10 difference. That will fund your next shipment. You will pay me for that first shipment and you will have profit enough to pay for the next shipment" (Northern Territory Legislative Assembly 1996/1997, 29 April 1997).

Finally, there is considerable evidence to suggest that the potency of kava being sold currently is greater than in the past. Prior to the emergence of the Tongan-controlled black market from 1993, most of the kava sold in Arnhem Land originated in Fiji and was largely of the low grade 'lowena' variety. Most of the kava currently finding its way onto the market, however, comes from Tonga and is of the more powerful 'waka' grade. This in turn appears to be associated, as is discussed below, with higher levels of intoxication and other health-related sequelae, such as a form of 'fitting' which frequently occurs following cessation of drinking (Thorn 1997; Chalmers 1997; Stirling 1997).

According to the Miwatj Health Aboriginal Corporation, an Aboriginal-controlled health service based in Nhulunbuy, kava as sold in communities is also sometimes 'cut' with other substances, such as cornflour (Miwatj Health Aboriginal Corporation 1997).

It is apparent that, irrespective of Aboriginal individuals' views about the desirability or otherwise of kava, there is widespread resentment regarding the Tongans' dominance of the illegal kava trade. This was expressed most recently by the council of one community in East Arnhem when, in April 1997, it officially banned Tongans from selling kava in the community. However, it is equally clear that part of the success of the Tongans in controlling and developing the market lies in their having cultivated strategic alliances with individual Aboriginal people who are able to develop markets at the local level.

3.2. Current consumption patterns

Two attempts have been made in the past to obtain broad estimates of kava consumption patterns in Arnhem Land. In 1987 Alexander *et al.* reported on six Arnhem Land communities in which kava was regularly consumed. Using a combination of sample survey data and sales figures, they reported that 71% of males aged 15 and over and 20% of females in these communities drank kava, and that the average daily consumption per drinker of kava in three communities for which data were available ranged from 14 to 53 grams of kava powder (Alexander *et al*. 1987, pp. 17-24).

As mentioned earlier, in chapter two, the authors also reported that kava sales had declined since 1985, and that five communities which had been known to be consuming kava around 1983 had since banned it. Kava use in Arnhem Land, they concluded, had already peaked and was in decline. In 1988 Riley *et al.* reached similar conclusions on the basis of their observations of changing consumption patterns in one Arnhem Land community (Riley *et al*. 1988).

A later study by one of the present authors (d'Abbs 1993, pp. 21-24) found that, contrary to these observations, kava sales *increased* steadily through the second half of the 1980s, from a mean of 166 kilograms per month in January-June 1986 to a mean of 2,287 kg per month in the corresponding months of 1990 (i.e. an increase of more than 13 times). Thereafter, sales over the next eighteen months fell below the 1990 level, apparently in response to control measures introduced in mid-1990 by the Northern Territory Government. However, by 1992 they had risen once more to the 1990 levels.

Using sales data from two communities, d'Abbs (1993) estimated mean per capita consumption by drinkers in one community to be 88.3 grams of kava powder per day, and in another, 66.5 grams per day. Both estimates, he pointed out, were considerably higher than the highest consumption levels reported by Alexander *et al.* in 1987, and were also in the 'very heavy' consumption range identified in Mathews *et al.'s* epidemiological study as being linked to adverse health effects (Mathews *et al*. 1988).

A third source of consumption data from this time is a survey conducted in 1992 by a doctor attached to an Aboriginal organisation serving a group of outstations. The survey found that 66% of males and 33% of females reported drinking kava. A third of male drinkers (32.4%) and a quarter of female drinkers (23.4%) reported drinking kava 4 to 7 times per week. While most drinkers reported consuming 2 to 4 cups of kava beverage per drinking occasion, 28% of male drinkers and 13% of female drinkers reported consuming 8 or more cups per drinking session (d'Abbs 1993; Miwatj Health Aboriginal Corporation 1994).

As pointed out above, the fragmentary evidence regarding current black market sales suggests that overall sales of kava have remained at the level of the early 1990s rather than increased. However, several anecdotal reports suggest that, under the black market regime that has prevailed since around 1993, the strength of kava sold has increased, with a consequent increase in intoxication levels (Chalmers 1997) - a result that might also be linked to a tendency among drinkers in some communities to mix a particularly strong concentrate of kava known as 'kava mud'.

3.3. Summary

Since 1995, when regulations governing the sale and supply of kava in the Northern Territory were suspended following kava's classification by the National Food Authority as a 'prohibited botanical', there have been no legally authorised provisions for the sale and supply of kava in the NT. Despite this, an estimated 15,000 - 20,000 kilograms of kava currently enters Nhulunbuy each year, and sells at a retail level for a value conservatively estimated as $6 million to $8 million.

While it appears that the total amount of kava being sold in Arnhem Land has remained similar to the high levels reported in the early 1990s, the retail value of the market in Arnhem Land has grown in the last few years. For example in the early 1990s a 50 gram pack of kava retailed for between $5 and $10; today the *lowest* price appears to be $20.

The pervasiveness and sophistication of the illegal kava market in Arnhem Land have also grown in recent years. Most kava suppliers in Arnhem Land today are based in Nhulunbuy, and operate through strategic alliances with individuals in communities. Kava is now sold in at least five community that did not apply for permits under the 1990 Northern Territory legislation. In one of these communities the traditional landowners and the local community council combined to impose a ban on the sale of kava in the community in October 1996.

However, it is questionable to what extent any community can successfully maintain a ban in a situation where opinion regarding the desirability or otherwise of kava is divided within the community itself, local councils may have limited authority, and the police find themselves unable to take punitive action against those responsible for importing kava into the Northern Territory in the first place.

In one central Arnhem Land community, where kava consumption grew rapidly in the second half of 1996, weekly retail expenditure on kava appears to be between $50,000 and $75,000. A local football competition that, prior to the growth in kava sales, supported 10 teams, has had to be abandoned as there are longer any teams.

The potency of kava being sold currently also appears to be greater than in the past. Previously, most kava sold in Arnhem Land was the low grade 'lowena' variety from Fiji, but since the emergence of the Tongan-controlled black market in 1993, most kava sold is of the more powerful 'waka' grade. Consumption of this more potent kava may be associated with higher levels of intoxication and other health-related sequelae reportedly occurring in Arnhem Land.

Two attempts have been made in the past to obtain broad estimates of kava consumption patterns in Arnhem Land. In 1987 Alexander *et al.* estimated average daily consumption by drinkers at from 14 to 53 grams of kava powder. The same study also concluded that kava consumption in Arnhem Land had peaked and was in decline.

In contrast, a second study by d'Abbs in 1993, found that kava sales had increased steadily through the second half of the 1980s, from a mean 166 kilograms per month in January-June 1986 to a mean 2,287 kilograms per month in the corresponding months of 1990. Using sales data from two communities, the 1993 study estimated mean per capita consumption by drinkers to be 88.3 grams of kava powder per day in one community and 66.5 grams per day in the other. These levels were considerably higher than the 1987 study reported and fell within the 'very heavy' consumption range identified in an epidemiological study as being linked to adverse health effects.

A survey of kava consumption in 1992 by a doctor employed by Miwatj Health Aboriginal Corporation found that 66% of males and 33% of females reported drinking kava. A third of male drinkers (32.4%) and a quarter of females drinker (23.4%) reported drinking kava 4 to 7 times a week – 28% of male drinkers and 13% of females drinkers reported consuming 8 or more cups per drinking session.

4. HEALTH, SOCIAL AND ECONOMIC CONSEQUENCES OF KAVA USE IN ARNHEM LAND

4.1. Overview: controversies, and the approaches underpinning them

The use of kava in Arnhem Land has, almost since it began in the early 1980s, been associated with reports of adverse consequences. These mainly have to do with the health of kava drinkers - with regular reports, for example, of 'scaly skin', chest pains, liver damage and weight loss. But they also encompass social consequences - with claims that heavy kava use leads to a decline in participation in social activities, including employment - and economic effects, mainly attendant upon the proportion of household incomes diverted to purchasing kava.

Just as persistently, proponents of kava point to perceived beneficial consequences. Kava, in pointed contrast to alcohol, is said to promote social harmony and discourage violence. It is also claimed that the presence of kava helps to reduce the migration of young men into towns, where they are prone to engage in destructive binges of alcohol consumption. Moreover, argue some people, the extent to which the harmful sequelae of kava drinking are in fact properly attributable to kava is open to question. For example, the authors of an influential research monograph published in 1987, while acknowledging widespread concerns at apparent effects of kava drinking, stated categorically:

> No major health problems or deaths have been shown to be kava-related (Alexander *et al*. 1987, p. 32).

Amid the plethora of claims and counter-claims about the damage or benefits wrought by kava, it is possible to discern three main lines of argument, each proceeding from different premises, and interpreting a common body of evidence - most of which is inconclusive enough to lend itself to competing interpretations - in quite different ways.

The first approach is based on observed associations between kava drinking in Arnhem Land and a number of adverse consequences, such as those summarised in Dr Paul Spillane's written submission to the Inquiry. Kava, he reported, was associated with

> a skin reaction seen in people who consume large amounts of kava (kava dermopathy); an associated higher level of malnutrition; sedative and muscular relaxant effects; and abnormal liver function tests (the significance of which is unknown). However, there is an enormous amount not known about kava. There appears to be an unusually high association with infectious diseases, including the potentially fatal melioidosis, ischaemic cardiac events including myocardial infarction and sudden death, malnutrition in the dependents of kava drinkers, significant apathy and seizures attributed to acute intoxication and withdrawal from kava (Spillane 1997).

The second approach, associated with individuals and groups more favourably predisposed to kava, accepts the evidence of adverse consequences, such as that cited by Spillane, but advances three further arguments:

1. *Association* does not necessarily signify *causation*; kava may be a causal agent, but equally, it may be one of several contributory factors, or both heavy kava drinking and the phenomenon in question might be effects of a deeper underlying cause.
2 Even if kava is shown to be a cause of a particular effect, its removal may not lead to the disappearance of the effect, since another causal agent may take the place of kava. For instance, even if it could be shown that the children of kava-drinking mothers have higher rates of under-nutrition than other children, it does not follow that removal of kava would reduce under-nutrition, since those same mothers might find another recreational psychoactive substance.
3 However disturbing the effects of excessive kava misuse may be, the removal of kava would be likely to lead to more serious consequences, associated with alcohol abuse and/or petrol sniffing.

The third approach is grounded, not in the interpretation of observed correlates of kava consumption, but on analyses of the chemical and toxicological properties of kava itself. Those who adopt this approach acknowledge that the properties of the active ingredients of kava are not fully understood, but insist that there is at present no evidence of sufficient toxicity to warrant restricting the availability of kava, other than by the regulatory mechanisms applied to food products in general. For example, Lebot *et al.* argue that kava does not cause chemical addiction and that, used in moderation, it has no toxic consequences (Lebot *et al*. 1992, pp. 59-60). Proponents of this approach sometimes refer to a review conducted in 1986 by the Food and Drugs Administration of the US Department of Health and Human Services, which concluded that there was insufficient evidence of toxicity to warrant special restrictions. Similarly, in Australia in 1988 the Drugs and Poisons Scheduling Committee of the National Health and Medical Research Council stated that there were no toxicological concerns to warrant scheduling kava (McKay 1995, p. 16).

The three approaches lead to distinctive interpretations of the available evidence. For those who adopt the first approach, the clear evidence of an association between kava use and a range of adverse sequelae, combined with continuing lack of knowledge about some of the mechanisms by means of which kava acts upon the human body, constitutes a sufficient case for restricting if not prohibiting its use in Arnhem Land. For example, Dr Spillane argued, in the submission cited above:

> ...it is reprehensible that such large amounts of kava are allowed to be distributed throughout these communities and heavy patterns of consumption tolerated when there is such a limited body of knowledge regarding the health effects of heavy kava consumption (Spillane 1997).

Those who adopt the second approach tend to adopt the standpoint expressed by the Chairman of one Community Council in a written submission:

> I understand that kava is not good, but it is much better for our community than alcohol (Ramingining Community Council 1997).

If kava were stopped, he argued, "we will have trouble in our community because our people will start going to Darwin and buying cans and bottles of grog". This will lead to "much fighting and trouble" both among families and between clans.

One important practical consequence of this state of affairs is that the accumulation of more evidence about the effects of kava will not necessarily bring about consensus. Each approach provides a conceptual framework for interpreting evidence about kava in a certain way.

In the remainder of this chapter, we attempt to summarise existing evidence about the effects - or correlates - of kava consumption. The chapter begins with the domain in which most discussion has taken place - health - and then addresses social and economic correlates of kava-drinking in Arnhem Land. In each section, a summary of current research literature is followed by summaries of points made to this inquiry, either in written submissions or at consultative meetings.

4.2. Health correlates

So (the kava drinkers) come to us saying:

> "Have you got a cream in that health clinic to stop this scaly skin?"
> "Have you got eye-drops to take away these red-eyes?"
> "Have you got medicine to take away shortness of breath when we play football?"

And we say to them:

> "What is making your skin scaly and your eyes red? And if you are not fit enough for playing football? It's kava! We don't have any medicine for that. You can make those things go away if you stop drinking kava." Senior Aboriginal Health Worker in one kava using community, April 1997.

4.2.1. Clinical evidence

Pilot survey on the effects of kava usage on physical health in an east Arnhem Land community

The first, and still the most comprehensive, clinical study of the health effects of heavy kava use amongst Aboriginal people was carried out by Mathews *et al.* in 1987 from the Menzies School of Health Research in an isolated Aboriginal community in Arnhem Land (1988). Comparison with non-kava users found that

- *kava users were more likely to have a typical scaly rash of the skin;*
- *very heavy users of kava (440 grams of kava per week) were 20% underweight, suggesting poor nutrition status and widespread implications for general health;*
- *very heavy users of kava also had greatly increased levels of γ-glutamyl transferase, suggesting that kava may be more toxic to the liver than alcohol;*
- *ECG evidence and shortness of breath, both suggestive of pulmonary hypertension in kava users;*
- *apart from macrocytosis of red cells and decreased platelet volumes there were decreased numbers of blood lymphocytes in heavy kava users;*
- *effects on blood biochemistry were also noted with increased high density lipoprotein levels and decreased levels of plasma protein, albumin, urea and bilirubin in kava users;*
- *kava users were also found to be more likely to show haematuria, and excrete a urine of low specific gravity and high pH.*
- *neurological examination showed increased patellar reflexes in kava users, although crude measures of cognition showed no deterioration in performance with kava use.*

There were criticisms of this pilot study. Douglas (1988) suggested that concurrent alcohol consumption may also have been responsible for “the serious health changes” reported by Mathews *et al.* (1988). Likewise, Lebot *et al.* (1992) suggested that these effects may have been due to previous alcohol use and current heavy tobacco use and general poor health before taking up kava drinking, and should not therefore be attributed solely to kava consumption.

In reply to the criticism of Douglas, Mathews and Riley (1988) agreed that alcohol may sometimes be consumed with kava, but stated that there was no evidence of recent alcohol consumption within the study community. In relation to the criticisms of Lebot *et al.* (1992), Mathews *et al.* acknowledged in their original paper that the survey had been conducted in a setting marked by "a high level of morbidity from causes other than kava" (Mathews *et al.* 1988, p. 552). However, they argued that support for their hypothesis attributing observed morbidity to kava came from a consistent tendency for the effects to increase with increasing kava consumption.

In summary, the pilot survey suggested that there may be adverse health effects associated with excessive kava consumption. However, these effects were general in nature and did not relate to any specific disease or increased mortality associated with excessive kava use.

The effects of excessive kava consumption on the skin

The effects of excessive kava consumption on the skin have been recorded within the oral traditions of those South Pacific cultures which use it and the writings of early European explorers, including Lieutenant James King who accompanied Cook in his third voyage, 1776-1780 (Norton and Ruze 1994). An extensive review of the history, manifestations and likely causes of “kava dermopathy” was carried out by Norton and Ruze (1994), who translated the following passage from Tongan mythology:

> “And those that drink too much kava become scaly like a leper, just as the kava grew from the body of a leprous woman.” (Norton and Ruze 1994, p. 89).

Later research has confirmed the development of a characteristic white, scaly skin rash with excessive chronic kava use (Mathews *et al.* 1988; Ruze 1990). According to Frater (1958, p. 529) daily kava consumption over a period of “months to a year or more” will result in a skin rash. Excessive kava users also commonly report the development of red, irritated eyes, even in the short-term (Frater 1958; Mathews 1988; Ruze 1990).

Although Mathews *et al.* (1988) suggested that the effects of kava on the skin may be through inducing a vitamin B deficiency, later research (Ruze 1990) has found that the condition was probably unrelated to vitamin B deficiency and did not respond to a vitamin B supplement. Ruze (1990) hypothesised that the rash may be due to changes in cholesterol metabolism induced by kava. Nevertheless, the effects of chronic excessive kava consumption on skin are completely reversible with a reduction in, or abstinence from, kava consumption. (Frater 1958; Ruze 1990; Norton and Ruze 1994).

Neurological effects
Using crude measures of cognition and neurological function, Mathews *et al.* (1988) found little change with heavy kava use, apart from a tendency for mild intention tremor and incoordination in very heavy users of kava.

As mentioned in chapter two, some laboratory research has suggested that "therapeutic doses" of commercial kava extracts may improve cognition, memory (Munte *et al.* 1993 and coordination even in the presence of alcohol (blood alcohol ≤ 0.05%) (see also 3.7). However, Spillane *et al.* (1997) recently described some neurological observations relating to heavy kava use in Eastern Arnhem Land including one report of choreoathetosis (involuntary writhing movements of the body). Recently, three cases of involuntary dyskinesiae with similar manifestations, all associated with the use of commercial kava extracts have also been reported in Germany (Schelosky *et al.* 1995). These kava effects were suggested to result from a central dopaminergic antagonism (Schelosky *et al.* 1995).

Spillane *et al.* (1997) have also reported cases of grand mal seizures attributed to both acute toxicity and withdrawal of kava. These findings raise the need to further investigate the central nervous system effects of heavy kava use, either alone or in conjunction with alcohol (Jamieson and Duffield 1990b; Spillane *et al.* 1997; Duffield and Jamieson 1991).

Effects on vision
As mentioned previously, one of the acute effects of kava consumption is photophobia (a wish to avoid bright light) (Gajdusek 1979). Frater (1952) observed that a group of students who had consumed kava had dilated pupils which reacted very slowly to light. Similarly Garner and Klinger (1985) observed that a 32 year old male who had ingested kava also had dilated pupils and a reduced near point of vision, reduced ability for the eyes to converge on an object and disturbance to the oculomotor balance (i.e. the balance between muscles controlling eye movement) (Garner and Klinger 1985). The authors concluded that these effects probably resulted from the effects of kava on the central nervous system. However, they could find no deterioration in perceptual aspects of visual "sharpness" in their subject.

Heavy kava consumption as an independent risk factor for infectious disease
Mathews *et al.* (1988) demonstrated a significant decrease in white blood cells or lymphocytes in heavy kava users but did not investigate the prevalence of serious infectious disease amongst kava users. Spillane *et al.* (1997) have raised the possibility of increased general susceptibility to infectious disease in heavy kava users including melioidosis *(B. pseudomallei).* Likewise Currie (1996) has noted that the majority of Arnhem Land melioidosis patients referred to Gove and Royal Darwin Hospitals were heavy kava users. He has called for a critical evaluation to establish (i) whether kava drinking is an independent risk factor for melioidosis; and (ii) the nature of such a increased risk if it is shown to exist. Such increased risk may be associated with increased exposure to bacteria in soil/water through the sedentary nature of heavy kava drinking or an increased susceptibility to disease that might be due either to immunological, metabolic or nutritional factors associated with kava drinking.

Effects on the liver
One of the most striking changes found by Mathews *et al.* (1988) was markedly elevated levels of the liver enzyme γ-glutamyl transferase (GGT). Increased levels of this enzyme indicate disruption and damage to the liver by alcohol and other toxins. Through comparison

with other studies in Aborigines, Mathews *et al.* (1988) reported that GGT levels were elevated to a much greater extent in kava users than commonly encountered in alcohol users, leading them to conclude that kava may be more toxic to the liver than alcohol (Mathews *et al* 1988, p. 554).

A study carried out in a western Arnhem Land community in late 1995 and early 1996 found that liver function may return to normal with abstinence from kava (Markey 1996). In this study, kava was unavailable in the community for a period of 3 months, and elevated levels in kava users decreased on follow-up and were similar to GGT levels in non-users. Nevertheless, there was a considerable prevalence of abnormal liver function due to other causes in the community, even amongst non-users (Markey 1996, unpublished data). This factor, along with the possible confounding of alcohol consumption and possible biases in participant selection and follow-up, lead Markey to question whether it was possible to be conclusive about the reversibility of kava-induced liver enzyme changes.

Detailed research on the chronic effects of alcohol on the liver has suggested that initially changes are reversible, but damage becomes permanent (cirrhosis) with continued chronic consumption of alcohol (Rall 1990).

Heavy kava consumption and sudden cardiac death

Anecdotal reports dating back to 1987 continue to link kava with sudden cardiac death. The possible association first emerged when three young men in one island community died over a relatively short time from heart failure while playing football, apparently after heaving kava drinking sessions on the previous night. However, to date no formal research has been carried out to examine this question. Moreover, in the view of one doctor who made a written submission to the Inquiry, it may never be possible, or at best take several years, to conduct a study that would permit conclusive scientific evaluation of possible thrombogenic effects of contemporary levels of kava consumption.

Mathews *et al.* (1988) found no electrocardiographic evidence of ischaemic heart disease, or any epidemiological evidence from unpublished observations relating to sudden cardiac death amongst kava users. Nonetheless, they suggested that further research was needed to discover whether kava use is a contributory cause of sudden cardiac death.

At a kava research workshop held in Nhulunbuy in 1994, Weeramanthri *et al.* (1994) presented data which suggested that the rate of sudden cardiac deaths amongst the Top-End Aboriginal population was greatest in the East Arnhem region (which contains all the major kava using communities) (Table 4.1).

Table 4.1. Crude rates of sudden cardiac death per 100,000 (95% confidence intervals) within Top End health regions in 1990

Region	Aboriginal	non-Aboriginal
Darwin (includes remote rural areas)	120 (60-170)	30 (20-50)
East Arnhem	200 (90-320)	-
Katherine	150 (50-250)	20 (0-40)
All "Top End" regions above	**140 (100-190)**	**30 (20-40)**

Source: Weeramanthri et al. 1994.

Weeramanthri *et al.* suggested caution in interpreting this data since the total number of deaths was small (n=48). Data was also presented relating to a number of deaths linked to kava that came to autopsy 1987-1993 (Table 4.2).

Table 4.2. Seven sudden Aboriginal deaths linked to kava that have come to autopsy 1987-1993.

				cardiac findings			
age	**sex**	**year**	**community**	**fresh infarction**	**scarring**	**atherosclerosis**	**thrombus**
24	male*	1987	Galiwin'ku	no	yes	3 vessels	yes
24	male*	1987	Galiwin'ku	no	yes	2 vessels	yes
36	male*	1987	Galiwin'ku	no	yes	3 vessels	yes
24	male	1990	Laynhapuy	yes	no	3 vessels	yes
24	male*	1992	Milingimbi	yes	yes	-	-
34	female	1992	Yirrkala	no	yes	1 vessel	yes
39	male	1993	Minjalang	no	yes	3 vessels	no

** related to football*
Source: Weeramanthri et al. 1994.

This was considered to be the minimal estimate of such deaths as Weeramanthri *et al.* (1994) reported that an unspecified number of other sudden deaths did not come to post-mortem. It was also acknowledged that there was likely to be a high incidence of other cardiac risk factors such as smoking and heavy alcohol consumption (not detailed). Nevertheless, the findings were summarised as follows: predominantly young males, many deaths related to football, evidence of old scarring rather than new infarcts, atherosclerosis was a common finding as was evidence of a fresh thrombus.

Weeramanthri *et al.* acknowledged that both direct and indirect effects of kava coupled with other factors may be causative factors. Pharmacological studies on intravenous administration of kava extracts in animals have demonstrated a transient fall in blood pressure accompanied by a more prolonged bradycardia, due to peripheral vasodilatation effects (Meyer 1979). Notwithstanding other possible risk factors prevalent in some Aboriginal groups such as

tobacco smoking, alcohol abuse, poor general health and nutrition status, the inactivity associated with kava consumption coupled with a possible diuretic effect (i.e. dehydration) (Lebot *et al.* 1992) may also increase clot forming activity and thus be contributory factors (P Thorn personal communication 1997).

In 1992 a doctor attached to an Aboriginal organisation serving a group of outstations reported a number of clinical observations apparently associated with heavy kava use, although as he pointed out, association did not necessarily indicate causation. One 35 year old man presented with chest pains due to a subendocardial infarct; upon ceasing kava use and commencing medication, his chest pains ceased. A second 44 year old male kava drinker presented with an anteroseptal infarct. An angiogram revealed a completely occluded right coronary and distal left anterior descending artery with distal small vessel disease. Both men also smoked and drank alcohol.

The doctor suggested that kava, in association with smoking, may be prothrombogenic, and called for a case control study to investigate the observation.

He also reported two infants with congenital heart disease borne of mothers who drank kava during their pregnancy; again, he stressed that other explanations may be applicable (Miwatj Health Aboriginal Corporation 1994).

It is apparent that a detailed examination of sudden cardiac deaths amongst Aboriginal people in the East Arnhem region should be a priority area for future research. Regardless of the outcome of future investigations of possible links between kava and sudden cardiac deaths, it should be noted that the perceived link is a major cause for concern among many Aboriginal people in kava-using communities (d'Abbs 1993).

4.2.2. Evidence presented to Inquiry

Much of the evidence presented to the Inquiry either verbally or in writing added to the evidence summarised above. However, attention was also drawn to health-related correlates that have received little or no attention in the published research literature - in particular, malnutrition among drinkers and drinkers' dependents, and persistent accounts of people 'fitting', usually within two or three days of ceasing kava drinking.

In a useful overview of kava-related health issues, Dr Elizabeth Chalmers distinguished between four kinds of effects:

- acute effects, including intoxication and, at higher levels, "apparent impairment of consciousness and motor paralysis" (Chalmers 1997);
- chronic effects, many of which are documented above, and many of which, Dr Chalmers suggests, may be reversible;
- other imputed effects, such as the relationship between kava use and sudden cardiac failures, substantiation of which requires further research, and
- probable indirect effects, such as under-nutrition among drinkers and their dependent children, which are likely to be a result of behavioural patterns associated with kava use rather than the chemical or toxicological properties of kava itself.

Child health and malnutrition

One doctor with 13 years experience in Arnhem Land Aboriginal communities stated categorically in a written submission: "I believe that there is a significant increase in serious

childhood malnutrition at times of heavy community kava use (Thorn 1997)." Infant malnutrition, he argued, was in turn associated with significant long term reduction in intelligence and increases in behaviour problems. He cited a recent study of children aged 0 to 5 in one large community that revealed a 10.4% rate of microcephaly. It was 'unfair', he argued, to decrease even further the potential of children brought about by 'years of gross government neglect of these areas'.

A submission from Miwatj Health Aboriginal Corporation argued that kava misuse added to the cost borne by Territory Health Services in evacuating and hospitalising people from communities, including malnourished infants of kava-drinking parents (Miwatj Health Aboriginal Corporation 1997). Another submission from Galiwin'ku referred to children, wandering the streets at night, hungry because their parents were spending money on kava rather than food (Galiwin'ku Community Development Employment Program 1997).

Other observers also attributed malnutrition among children to heavy kava use among adults (Spillane 1997; Warruwi Health Clinic transcript). Dr Chalmers suggested that under-nutrition associated with kava use appeared to be due to nutrition-related behaviour rather than to any direct toxic effects of kava. This, she added, might account for discrepancies between reported health correlated of kava in Aboriginal communities and those in Pacific Island nations (Chalmers 1997).

A few points might be made with respect to the observations regarding under-nutrition. Firstly, similar allegations date back to the earliest years of heavy kava use in Arnhem Land, and almost certainly have empirical foundation (see, for example, (Alexander *et al*. 1987; d'Abbs 1995). But, secondly, all the evidence of which we are aware remains anecdotal. Thirdly, even if kava is shown to be associated with high rates of under-nutrition, we cannot assume a simple causal relationships, if only because similar rates may be found to occur in non-kava using communities. This would suggest that excessive kava use and neglect of children are both *effects* of a deeper, underlying malaise.

Thrombotic effects

Four written submissions drew attention to possible thrombotic effects of heavy kava use without, however, bringing new evidence to light (Thorn 1997; Miwatj Health Aboriginal Corporation 1997; Elcho Island Art and Craft 1997; Galiwin'ku Community Incorporated 1997). In four of the communities visited, people referred to recent instances of heart attacks involving young people known to be heavy kava drinkers.

Liver damage

Three written submissions mentioned liver damage associated with kava use (Thorn 1997; Miwatj Health Aboriginal Corporation 1997; Russell 1997). In a recent survey of kava drinkers in one community with a long history of kava use, *not one* drinker had normal liver function test results (Russell 1997).

Fitting

> "People who were strong are shaking now. This is new". *Aboriginal man, addressing a public meeting in an Arnhem Land community.*

One of the most persistent themes in consultations with staff at health clinics consisted of reports of people 'fitting'. Independently of each other (and unprompted by Committee

members), staff at five clinics presented remarkably consistent accounts. Between one and three days after ending a bout of heavy kava drinking, a drinker would experience seizures, described by some observers as 'grand mal', by others as more 'focal fitting'.

> That happened three nights in a row not long ago. I was called out to three men who had had fits. That's a problem for people in the sense that maybe they want to stop, but they're worried that they're going to fit (Ms Gordon, RN, Milingimbi Health Clinic).

In several instances, clinic staff had systematically considered causal factors other than kava drinking, such as low blood sugar, trauma, epilepsy or meningitis - only to exclude them.

In a letter recently published in the Medical Journal of Australia, Spillane *et al.* (1997) have described with more precision what they label 'an idiosyncratic acute neurological syndrome not previously described in association with heavy kava consumption':

> A 27 year old Aboriginal male from a community in Arnhem Land has presented on three occasions with generalised choreothetosis [writhing-twitching involuntary movement] secondary to kava binges. He recognises the clear association with heavy kava use and is well between presentations. During the episodes he has severe choreoathetosis involving all limbs, the trunk, neck and facial musculature with market athetosis of the tongue. His level of consciousness is unimpaired and the remainder of the examination is normal. On all occasions the symptoms have largely settled following the empirical use of intravenous diazepam. He is asymptomatic and normal to examination within twelve hours indicating an acute intoxication syndrome.

While the numbers of drinkers involved are not large at this stage, the reports have a number of significant implications:

1 This is a new phenomenon, and appears to be occurring with increasing frequency.
2 Observers (Aboriginal and non-Aboriginal) generally attribute its appearance to a combination of two factors: the greater strength of kava currently being supplied to Aboriginal communities, compared with kava previously sold, and a trend towards consuming what many people describe as 'kava mud' - that is, a mixture of kava powder and water in which the concentration of kava is much higher than in conventional practice.
3 The phenomenon may signify the emergence of neurological effects of current patterns of kava use not previously reported in Arnhem Land.

Effects on the skin

Not surprisingly, many observers in both written and verbal accounts referred to the effects of heavy kava use on the skin, none perhaps so eloquently as an Aboriginal man at Galiwin'ku who talked of "people walking around like a turtle that's been out of the water for months".

In a paper prepared for a kava research workshop conducted in 1994 by Miwatj Health, Dr John Fraser reported that the scaly skin caused by heavy kava use may have affected the physical barrier of the skin or other immunological factors, in light of two patients in whom a kava rash had been affected by recurrent Norwegian scabies.

Staff at two clinics drew attention to high levels of Norwegian scabies; in one of them, all cases of Norwegian scabies were said to be heavy kava drinkers.

Resistance to chest and other infections

Dr Paul Spillane, in a verbal presentation to the Committee, stated that kava drinkers appeared to have lower resistance than others to all known infections, leading him to believe that kava affected the immune system. Staff at one clinic claimed that, while kava drinkers did not appear to be more likely than other people to catch infectious diseases, once they had acquired them they tended to be affected more severely. Again, the implication drawn was that heavy kava use compromised drinkers' immune systems. Staff at several clinics, as well as the authors of three written submissions, suggested that heavy kava use might increase drinkers' susceptibility to melioidosis (Miwatj Health Aboriginal Corporation 1997; Galiwin'ku Community Incorporated 1997; Spillane 1997; Thorn 1997).

As with so many correlates of heavy kava use, the evidence here is anecdotal only; and warrants systematic research.

Effects on eyes

For some time, some kava drinkers in Arnhem Land have reported dry, itchy eyes, apparently as a result of heavy kava drinking, and Miwatj Health, in its written submission to the inquiry, mentioned this problem, as did health workers at one of the clinics.

A non-Aboriginal man resident for 17 years in one community, where he runs a small business, made a written submission in which he presented evidence linking kava use to more serious effects on vision. He claimed that many long term kava drinkers could not identify by sight the variety of soft drinks they wished to purchase from his 'lighted, self serve display fridge'. Often, kava drinkers - not under the influence of kava at the time - would ask him to select a can of Coke for them. He added: "Having known most of these people for 17 years, I can, with much sadness, remember the days when some of them were able to sight wild honey bees at ten metres or more in the tops of stringybark trees, and then chop the tree down with an axe!". He concluded that kava drinking appeared to be causing permanent damage to vision, and requested an immediate investigation into the effects of kava drinking on retina function and damage to vision (Baker 1997).

He also claimed that his shop sold sunglasses out of all proportion to the size of the local market, with 90% of sales going to kava drinkers who, on being asked why they wanted sunglasses, stated that they got eye pain or headaches or both from sunlight after drinking kava. These reports appear to corroborate reports in the literature, referred to above, linking kava with photophobia.

Other effects

A number of other health problems were linked to kava, usually by being included on lists of adverse consequences, without any presentation of evidence or elaboration. These included: injuries from fighting arising out of attempts to obtain money for kava; pulmonary hypertension; constipation; impotence, and increased spread of infections from common use of kava buckets.

4.3. Social correlates

4.3.1. Published literature

Reports on the social effects of kava use in Arnhem Land are almost entirely anecdotal in nature. If research on health effects has been limited and inadequate, this is even more so with respect to systematic investigation of social effects. Alexander *et al.'s* study, published in 1987, presented findings conducted between July and December 1986, in conjunction with an NT-wide study of drug use in Aboriginal communities (Alexander *et al*. 1987). In 1988, Grayson Gerrard, an anthropologist, published a paper in which she reported on ethnographic aspects of kava use in two Arnhem Land communities, based on fieldwork conducted in 1987 and 1988. Since that time, no sociological or anthropological research has been conducted on kava use in Arnhem Land.

Gerrard reported that kava was often used as an adjunct to alcohol rather than as an alternative to it, and that multiple drug use was widespread in the communities in which she carried out her fieldwork. She attributed observed high levels of consumption to a traditional hunter-gather mode of consumption - one that favoured immediate consumption, rather than storing - and argued that both kava and alcohol were just two examples of a range of introduced commodities, such as videos, motor vehicles, washing machines, fridges and cassette players, which formed a "tidal wave of the new". Kava, she reported, was normally consumed with little or no ceremony, using any receptacles to hand, including cut-down beer cans and bowls out of which dogs are fed. She also claimed that it was not necessarily consumed in a group context (Gerrard 1989).

4.3.2. Evidence presented to Inquiry

Numerous anecdotal reports of the socially-damaging effects of kava were presented to the Committee, and some more positive reports. While these reports no doubt point to the existence of the phenomena cited, it is difficult to know how much weight to place on them, since most of them are advanced in a highly polemical manner. That is, those who are concerned about the harm they attribute to kava use, marshall evidence of negative effects, while those intent upon defending the use of kava point, not surprisingly, to alleged benefits.

A common scenario presented both verbally and in writing was the allegation that many kava drinkers tended to engage in all night drinking sessions, which left them with little energy or inclination to pursue other activities, including daily activities and more specifically cultural activities. This, it was argued, weakens the social fabric of the community as a whole (Thorne 1997; Miwatj Health Aboriginal Corporation 1997; Russell 1997; Elcho Island Art and Craft 1997; Galiwin'ku Community Incorporated 1997).

A recent edition of the school newspaper in one Arnhem Land community where kava use has only recently become widespread reported that all organisations in the community were now experiencing absenteeism as a result of the increase in kava consumption. For example, the outstation road party had collapsed: at the end of its first year of operation it comprised an all Aboriginal team with one balanda; by the end of the second year, the crew was made up entirely of balanda.

Kava was also linked in some critics' eyes with family conflict and breakdown, with children and old people being neglected, and conflicts - some of them violent - erupting over

arguments about whether money was to be spent on kava or family needs (Galiwin'ku Community Development Employment Program 1997; Russell 1997; Galiwin'ku Community Incorporated 1997). A report from one community claimed that there had been five attempted suicides in the preceding six weeks, all resulting from family conflicts in which one partner could no longer put up with the kava situation (Galiwin'ku Community Development Employment Program 1997).

Reports also attributed increases in interpersonal violence and sexual offences to heavy kava use. One community report claimed that incidents of child abuse and rape had increased significantly as a result of increasing kava use; specifically, it was alleged in the submission that over the preceding 12 months, eight cases of rape or attempted rape had occurred, four of them involving children aged less than eight years (Galiwin'ku Community Development Employment Program 1997).

In a report that echoes earlier descriptions of the havoc wrought in some communities by petrol sniffers, one report claimed that groups of kava drinkers tended to congregate in public places, and become so intoxicated that some of them lost control over bodily functions, urinating and defecating where they sat (Galiwin'ku Community Development Employment Program 1997).

These accounts, if accurate, suggest that the accounts of kava drinking in the 1980s, portraying kava as a peaceful substitute for alcohol, conducive to quiet sociability, are no longer applicable. But is this so? A written submission from the council of another community, in which kava drinking has long been widespread, stated that: "Kava is calm and peaceful drinking. It makes no trouble for our community" (Ramingining Community Council 1997).

4.4. Economic correlates

Two kinds of allegations regarding the economic impact of current kava use in Arnhem Land were made to the Inquiry. The first, and most common, was that expenditure on kava deprives families of much-needed income, in turn leading to under-nutrition among children and old people (Thorn 1997; Galiwin'ku Community Development Employment Program 1997; Russell 1997; Galiwin'ku Community Inc. 1997). The second was that, in a context of black-market distribution where the suppliers are non-Aboriginal people, the profits accruing from the sale of kava were not flowing back into the communities concerned (Galiwin'ku Community Incorporated 1997; Spillane 1997).

4.5. Summary

Reports of adverse consequences of kava use have persisted since kava was introduced into Arnhem Land communities in the early 1980s, and have largely focused on the effects of kava on health and, to a lesser extent, social and economic impacts. Some reports highlight positive effects of kava, especially as an alternative to alcohol.

Most attempts to assess the effects of kava are grounded in one of three approaches. The first is based on observed association between kava drinking and a number of adverse outcomes. A second approach, generally associated with a more favourable assessment of the effects of kava, accepts the evidence of adverse outcomes, but posits three additional qualifications: (1)

association does not necessarily indicate *causation*; kava may be a causal agent, but equally, it may be one of several contributory factors, or both heavy kava drinking and the phenomenon in question might be effects of a deeper underlying cause; (2) even if kava is shown to be a cause of a particular effect, its removal may not lead to the disappearance of the effect, since another causal agent may take the place of kava; (3) however disturbing the effects of excessive kava misuse may be, the removal of kava would be likely to lead to more serious consequences, associated with alcohol abuse and/or petrol sniffing. The third approach is grounded, not in the interpretation of observed correlates of kava consumption, but on analyses of the chemical and toxicological properties of kava itself. Those who adopt this approach acknowledge that the properties of the active ingredients of kava are not fully understood, but usually insist that there is at present no evidence of sufficient toxicity to warrant restricting the availability of kava, other than by the regulatory mechanisms applied to food products in general.

Very little systematic research has been carried out on possible effects on health of long term kava consumption at the levels currently prevailing in Arnhem Land.

Heavy kava consumption has long been associated with effects on the skin, although the mechanism whereby these effects occur is still not understood. Skin effects appear to be reversible.

Studies in Arnhem Land have shown kava drinkers to have markedly elevated levels of the liver enzyme γ-glutamyl transferase (GGT) - even more so than those recorded among alcohol users - an indicator of liver damage This suggests that kava may be even more toxic to the liver than alcohol. However (a) again the mechanisms involved are not understood; (b) GGT levels have been found to decrease when drinkers stop consuming kava, but (c) beyond a certain (as yet unknown) point, liver damage may *not* be reversible.

The Mathews *et al* (1988) pilot study also found evidence linking heavy kava drinking with:
- pulmonary hypertension;
- decreased numbers of blood lymphocytes and decreased platelet volumes;
- adverse effects on blood biochemistry;
- haematuria, suggesting effects on the kidneys and renal system.

Recent anecdotal reports from experienced clinicians suggest that chronic excessive kava use may be associated with an increased susceptibility to serious infectious disease and the development of neurological abnormalities.

A possible link between excessive kava consumption, ischaemic heart disease and sudden cardiac deaths in relatively young people remains open to conjecture, but there is a strong perception and some crude data to suggest that excessive kava consumption may be a contributing factor, along with tobacco smoking, poor nutrition and excessive alcohol consumption.

Much of the evidence presented to the Inquiry either verbally or in writing contributed to the available research evidence. This evidence included reports of kava's effects on skin; thrombotic effects; liver damage; lower resistance to chest and other infections; fitting, and effects on eyes and vision.

In addition, several submissions associated heavy kava use with malnutrition among drinkers and drinkers' dependents.

There is very little published literature on the social effects of kava drinking in Arnhem Land. Alexander *et al.* (1987) presented findings of kava use in Arnhem Land communities between July and December 1986 as part of a study of drug use in Aboriginal communities in the Northern Territory. Findings from this study have been summarised above.

Ethnographic aspects of kava use in two Arnhem Land communities were reported by Gerrard based on fieldwork conducted in 1987 and 1988. In this paper, Gerrard reported that kava was often used as an adjunct to alcohol rather than as an alternative and she attributed apparent high levels of consumption to a traditional hunter-gatherer mode of consumption. It was observed also that kava consumption usually took place with little or no ceremony and was not necessarily a group activity.

Anecdotal evidence presented to the Inquiry included both adverse and more beneficial reports of the social correlates of kava consumption. Several people alleged that all night kava drinking sessions were common and this impacted upon people's ability to pursue daily activities, including employment and cultural activities, thereby weakening the social fabric of the community as a whole.

According to some, kava contributed to family conflict and breakdown and violence usually associated with disputes over the amount of money being spent on kava as opposed to food and other items. In contrast a submission from a council of a community in which kava drinking has long been widespread stated that "Kava is calm and peaceful drinking. It makes no trouble for our community".

Submissions to the Inquiry in relation to the economic effects of kava use in Arnhem Land most commonly cited the considerable expenditure on kava and the detrimental impact this then has on the health and well-being of other family members, especially children.

Others were concerned with the profits from kava sales going to the non-Aboriginal black-marketeers and not flowing back into the local communities.

5. KAVA AND ALCOHOL

5.1. The relationship between kava and alcohol

Ever since kava was introduced into Arnhem Land, a major reason advanced in favour of its use is that it provides an alternative to alcohol; that is to say, like alcohol, it allows people to enjoy the pleasures of intoxication, but unlike alcohol it does not lead to conflict, violence, injury and social disruption. Even today, it is almost impossible to raise questions about the merits of kava in Aboriginal communities where it is popular without inviting comparisons with the destructive effect of excessive alcohol use. "Kava", as the Chairman of one Community Council wrote in a submission to the Inquiry, "is calm and peaceful drinking. It makes no trouble for our community". Alcohol, on the other hand, leads to "much trouble and fighting" (Ramingining Community Council 1997). Local MLA Syd Stirling, in a written submission to the Inquiry, reported that, in discussion with different groups in one kava-using community from which alcohol is officially banned, some women had stated that they did not like their men using kava, but that the men had threatened to return to alcohol if kava was banned. In this context, it was seen as the lesser of two evils (Stirling 1997).

The perception of kava and alcohol as linked opposites does not originate in Arnhem Land. Marshall, writing in 1976, refers to a number of studies that explore the use of kava as an alternative to alcohol in Pacific Island countries (Marshall 1976). Similarly, Lebot *et al.* cite three references to efforts by governments to encourage kava drinking as an alternative to alcohol (Lebot *et al*. 1992, pp. 142-146).

5.2. Kava and alcohol in Arnhem Land

Notwithstanding these perceptions and intentions, however, the extent to which kava has served as an alternative to alcohol in Arnhem Land, rather than as an adjunct in a context of multi-drug use, has been called into question by a number of observers. Gerrard, writing in 1989 about kava use in two communities, asserted that kava was not normally used as an alternative to alcohol, but rather as an adjunct (Gerrard 1989). In his 1993 review, d'Abbs reported data from one community showing that two-thirds of male kava drinkers also reported drinking alcohol (while 29% drank neither kava nor alcohol) (d'Abbs 1993). Interestingly, both alcohol and kava have been banned from this community by the local council.

Two questions then arise: first, what *is* the relationship between alcohol and kava use in Arnhem Land today; second, given that at least some kava drinkers also drink alcohol, what do we know about the effects of drinking both?

In answer to the first question, Dr Elizabeth Chalmers has suggested that, from the point of view of Aboriginal residents of communities, three scenarios can be identified (Chalmers 1995).

In the first, introduction of kava has virtually eliminated petrol sniffing, reduced violence in the community and led to a reduction in numbers of young people going to Darwin where they drink alcohol. From this view point, it is acknowledged that some people drink kava to excess; that some drinkers develop health-related symptoms such as scaly skin or weight

loss, and that some drinkers do not attend work. Nonetheless, the benefits of having kava in the community are considered to outweigh the costs.

In a second scenario, similar effects to those noted above are identified, with the additional factor that parental kava drinking is seen as leading to child neglect, which in one community is believed to have led to an epidemic of children sniffing petrol.

In a third scenario, kava is seen as having had little impact on alcohol consumption and problems. Many drinkers consume kava as well as alcohol, although usually not at the same time. This scenario is more likely where the community has easy access to liquor outlets. Kava, however, is also sometimes seen as a way to get off the grog.

Chalmers concludes: "It appears that while kava has some value as an anti alcohol strategy, it is by no means universal. It is more likely that kava drinking and its consequences have been added to the other mood altering substance use such as alcohol and tobacco use in communities." (Chalmers 1995).

Chalmers also attempted to examine empirically the proposition that kava reduced the incidence of alcohol-related offences, by comparing alcohol-related offences as a proportion of all offences over a period of a little more than two years in two police districts: Alyangula, which incorporates Groote Eylandt and Numbulwar, in both of which kava is virtually absent, and Nhulunbuy, which takes in the rest of East Arnhem Region, where kava is consumed in all Aboriginal communities. Her findings are summarised in the table below.

	Nhulunbuy		**Alyangula**	
Year	No. offences	% alcohol related	No. offences	% alcohol related
1993	173	56	144	35
1994	156	58	136	31
1995 (Jan-Mar)	41	76	41	25

As Chalmers points out, the percentage of alcohol-related offences is *higher* in the kava using district (Chalmers 1995). (However, these figures do not take account of possible differences in the per capita rate of offences between the two districts.)

5.3. Interactions between kava and alcohol: a review of research evidence

Interactions between alcohol and other hypnosedative drugs such as diazepam *(Valium)* are relatively common and the magnitude of the combined effects are often much greater than the sum of the individual effects of each drug.

Some experimental work has been carried out in mice in relation to the interaction between alcohol and kava for hypnotic (sleep producing) effects and toxic effects (Jamieson and Duffield 1990b). Although the interaction was much greater than a purely additive effect it was not as great as the combined effects noted between alcohol and some benzodiazepine drugs. Nevertheless, alcohol greatly increased sleeping time of a minimal dose of kava resin by over 10 times.

In addition to the interaction for sleeping time, alcohol markedly increased the toxicity of kava in mice (Jamieson and Duffield 1990b). The combination of relatively low doses of kava and alcohol caused death in over half of the experimental mice. Duffield and Jamieson (1990b) cautioned:

> "The positive interactions between ethanol and kava resin in our studies have important implications, both clinically and socially, as kava, traditionally drunk by itself, is now frequently drunk with alcohol."

Some human experimental work has been carried out to assess the potential interaction between alcohol and kava extract. Herberg (1993) carried out a placebo-controlled randomised double blind study to assess whether *(WS 1490)* kava extract and alcohol had any adverse interaction on safety related psychological tests. Subjects were given three 100 mg doses of *(WS 1490)* per day over 8 days and controls given placebos. Tests were carried out without alcohol prior to dosing and in the presence of a blood alcohol concentration of 0.05% at the time of testing on the first, fourth and eighth days. There were no negative interactive effects between alcohol and kava demonstrated at these doses. Nevertheless, the doses of both *(WS 1490)* kava extract and alcohol were not excessive.

In a recently published article, Foo and Lemon (1997) have described the acute effects of kava alone, or in combination with alcohol, on subjective measures of impairment and intoxication and on cognitive performance. In this study, carried out on volunteers from the Northern Territory University, kava dosages were in the range of 1g/kg of body weight and alcohol at a dosage of 0.75g/kg body weight. The authors concluded that:

> "kava alone has little effect on reported condition and cognitive performance, but appears to potentiate both perceived and measured impairment when combined with alcohol"

5.4. Summary

The major reason advanced for the introduction of kava into Aboriginal communities in Arnhem Land has been that kava provides an alternative to alcohol. Kava is said to allow people to enjoy the pleasures of intoxication, but unlike alcohol does not lead to conflict, violence, injury or social disruption. This argument still persists in several Arnhem Land communities and has been advanced in many Pacific Island countries as well.

However, the extent to which kava has been used as an alternative to alcohol in Arnhem Land communities has been questioned by a number of observers. Several studies suggest that, in some communities at least, kava is often an adjunct to alcohol, rather than an alternative.

Chalmers concluded that while kava use was effective as an "anti alcohol" strategy in some communities, it has been less effective and contributed to multi drug use in other communities. She also found no evidence to suggest that kava use reduced alcohol-related offending in Arnhem Land.

Some experimental work has been carried out in relation to the interaction between kava and alcohol. A study involving mice found that the interaction was much greater than a purely additive effect for hypnotic and toxic effects. A placebo-controlled randomised double blind study involving humans found no evidence of interactive effects between alcohol and kava

with respect to safety-related psychological tests, although the dosages of kava extract and alcohol were both moderate. Another study of acute effects of kava alone, or in combination with alcohol, on subjective measures of impairment and intoxication and on cognitive performance, found that kava alone had little effect on cognitive performance, but that it potentiated both perceived and measured impairment when combined with alcohol.

6. FUTURE OPTIONS FOR REGULATION OF KAVA IN ARNHEM LAND

6.1. Outcome of consultations on the desirability and extent of kava availability in the Northern Territory

In considering the contentious issue of kava availability, we distinguish between views expressed by Aboriginal individuals and/or groups in kava-using communities, and the views of non-Aboriginal observers (some of whom, however, are residents of long standing in these same communities).

6.1.1. Aboriginal views

In Chapter 2, above, reference was made to the decision by traditional owners and the community council of one community to ban kava altogether in October 1996. That example might serve here to illustrate one pole of the range of views among communities about the desirability of having access to kava. In its written submission to the Inquiry, the community council asserted that a clear link existed between kava drinking and many health and social problems existing in the community, and claimed that, since the coming of kava, illness and anti-social behaviour had increased. Kava, the council claimed, led to people not eating, ignoring medical conditions, and becoming more susceptible to diseases. Some people drank 24 hours a day, ignoring family and work, not looking after themselves. Money spent on kava deprived wives and children of food, and led to conflict. Meanwhile, unscrupulous people profiteered. Marriage laws were ignored, children neglected; people entered each others' homes without permission (Galiwin'ku Community Incorporated 1997).

Interestingly, the council specifically rejected the proposition that people did not have alternatives to kava: "we have an active CDEP, many recreational activities and youth programmes for people to become involved in. However the attraction of kava outweighs other available pursuits" (Galiwin'ku Community Incorporated 1997).

However, another submission from the same community, written by an Aboriginal resident on behalf of the local CDEP, highlighted the difficulties of trying to impose a ban at the local community level. Retailers continued to make enormous profits; the council had tried to ban kava, but without "a proper law to give us the power to stop the sales and consumption we are powerless".

In an emotional plea, the submission concluded: "This poison must be stopped at government level for us to have the power to stop it in the community, please help us to stay alive, ban this scourge before it is too late and destroys us" (Galiwin'ku Community Development Employment Program 1997).

Consider now another submission, also from a community council. The full text is reproduced below.

Hon D.G. Burke
Chairman
Inquiry on Kava Legislation
Legislative Assembly Of Northern Territory

Re: Kava Regulation

Dear Sir

A council sub committee of Warruwi Community Inc. discussed the issue of kava regulation and wish to let you know what we think about Kava in our community. We hope that the points will help the Government in making its Legislation on kava regulation.

- Kava should not be banned under any circumstances as it would lead to increased abuse of alcohol and petrol in the community. At the moment with Kava been used we have no problems with these other things and there is very little violence in our community.
- A Kava Club should be set up with a committee of five with a member from each clan group to oversee the sale of Kava. The members of this committee should be volunteers. The Kava committee would look after the sale of Kava in the community and keep a percentage of the money. We want to make sure that a lot of the money spent on Kava stays in the community.
- The profits from the sale of Kava would go back to the community. The money made would be used for things like paying for ceremonies, funerals and debts old people might have at the shop.
- Only people over eighteen years old should be able to buy Kava or use it. Kava would only be sold at certain times and should not be sold on Sundays
- How much people spend on Kava is up to them, if some people spend a lot on Kava they will share the Kava with others.
- Every six months there should be a Health Week where people have a check up at the clinic. Kava should not be drunk by people before they play sport
- Education programs are a waste of time because people are responsible for themselves in social and health matters to do with Kava.
- The different strengths in Kava don't matter.

I hope you are able to use the information above and if you want to talk more about this matter please ring me at Warruwi Council.

Yours sincerely

Peter Nangaraidji
Council President
27 February, 1997

It is difficult to imagine a view more polarised with respect to the first one cited. A third community council also made a written submission calling for continuing availability of kava, but on the grounds that any ban would lead to more serious problems with alcohol than those already associated with kava. The Council Chairman stated: "I understand that kava is not good, but it is much better for our community than alcohol" (Ramingining Community Council 1997).

Another community recently moved in April 1997 to restrict kava sales by banning Tongans from selling kava in the community. (One wonders, however, at the likely effectiveness of this measure, given the known capacity of Tongan and other suppliers to mobilise local Aboriginal retailers within communities.)

For some, the adoption of a stance on kava was a painful business. A traditional owner and council president in one community spoke of her own wish for the community to be rid of

kava, but added "I know my people want kava". (She went on to suggest the possibility of establishing a canteen licensed to sell kava ready mixed and for consumption on the premises.)

Despite the broad range of views in Aboriginal communities, the verbal consultations conducted by the Sessional Committee suggested that widespread support exists for a system of controlled supply. Many of those who would personally like to see an end to kava in their communities acknowledge, as did the traditional owner cited above, that for many others, kava is still regarded as a preferable alternative to alcohol.

Among Yolngu people advocating a system of controlled supply, many have made it clear that they want a system controlled by Yolngu people themselves, with profits from kava sales remaining in Yolngu hands. In other words, they want the Tongan suppliers out of the arena.

This was also the view expressed by Yolngu representatives attending a workshop convened by Territory Health Services in Nhulunbuy in August 1996. Some 20 Yolngu men and women, from five kava-using communities, met under the chairmanship of Mr Gatjil Djerrkura, chairman of Miwatj Health Services, to discuss options for regulating the supply of kava through eastern Arnhem Land. After considering various possible arrangements, representatives agreed unanimously on a preferred model, in which the wholesale supply of kava throughout the region would be administered by a Yolngu-controlled body, on the board of which each kava-using community would have representation. The board would in turn disburse profits from the sale of kava back to the constituent communities.

The Committee believes that this model should receive serious consideration.

From the point of view of policy-makers, the diversity of views about kava between communities is further complicated by an absence of consensus *within* many communities. One illustration of this came from Nhulunbuy MLA Syd Stirling. Referring to the strong stand taken by the community in which traditional owners and the community council had combined to ban kava in October 1996, he revealed that he had subsequently received telephone calls from residents of the same community, claiming that many people in the community *wanted* kava (Northern Territory Legislative Assembly 1996/97).

In other words, in many instances, there is no such thing as a 'community view'; the suggestion that one sometimes hears from politicians and other public figures to the effect that 'it is up to the community to make up its own mind' is, under these conditions, tantamount to asking communities to manufacture a consensus when the ingredients of a consensus simply do not exist.

6.1.2. Non-Aboriginal views

The diversity of views among Aboriginal people and groups was matched by a similar range amongst non-Aboriginal people. Peter Thorn, a doctor with 13 years experience attending to remote Aboriginal communities in Arnhem Land, argued that kava should be banned altogether. Given the links between kava and malnutrition, and between kava and liver damage, as well as the possibility of thrombotic effects and increased susceptibility to the potentially fatal melioidosis, he insisted that there were "too many unanswered questions re the potentially serious ill-health effects of excessive kava ingestion to permit it's [sic] continued use in the Territory" (Thorn 1997).

Another doctor with extensive experience in the region was similarly critical of the NT Government's apparent unwillingness to enforce controls on kava. "The ready availability of this substance to a rapidly transitional society in which outrageous levels of unemployment and poor attendance at school are commonplace", he argued, "provides the necessary ingredients for a public health disaster" (Spillane 1997). Under these circumstances, government compliance in making kava available "borders on culpability".

Spillane acknowledged the importance of the original reasons for introducing kava, but suggested that the time had come to consider seriously whether the benefits originally desired had in fact been outweighed by the disbenefits of heavy kava consumption. However, he did not call for a ban on kava, but rather for "appropriate controls" over availability and distribution, and for the research that was needed to enable Aboriginal communities to make informed decisions about kava (Spillane 1997).

Spillane also questioned the extent to which communities could make informed decisions about kava in the absence of research on the effects of heavy, chronic kava use. In doing so, he no doubt risks appearing to sound paternalistic in a context where the emphasis to date has been on the rights of communities to exercise their own choices regarding kava. Similarly, his stance could be read as devaluing knowledge and experience regarding kava other than the knowledge to be acquired through western medical research. Nonetheless, whatever the risks attendant upon raising discomforting issues, questions to do with the *necessary conditions* for the exercise of an informed choice about *any* important matter are important, and appear to have been overlooked to date in debates about kava policy.

A nurse with many years experience in one kava-using community suggested in a written submission that the local store be invited to take on the role of wholesaler and retailer of kava, thereby avoiding black market prices and out of hours sales (Russell 1997). However, in another submission, the Arnhem Land Progress Association, an incorporated body which operates stores in five kava-using communities (including the one in which the nurse worked), indicated that it had already adopted a policy of not selling kava through its stores, on the grounds that it was committed to promoting and selling good, nutritional food, and the sale of kava would contravene this commitment (Arnhem Land Progress Association 1997).

The non-Aboriginal accountant employed by one community council called for the re-imposition of controls similar to those established by the NT Government in 1990, with modifications (i) to allow for development of a prima facie case of 'traffic/sell kava' for individuals found to be in control of amounts over a certain limit; (ii) to reduce the administrative burden on licensed retailers; (iii) to ensure commitment by the Government to enforce the provisions, and (iv) to protect 'whistleblowers' who attempt to enforce the legislation (Middleton 1997).

6.2. The draft Kava Management Bill

A number of submissions to the Sessional Committee Inquiry addressed the draft Kava Management Bill. One community council - the same council that had earlier banned kava - bluntly rejected the bill: "We have studied this draft Bill and believe it is not the solution to the problem" (Galiwin'ku Community Incorporated 1997). The submission then added three qualifications. Firstly, if kava were not to be banned altogether, as the draft bill foreshadowed, then the bill should give powers to communities to prohibit the possession or consumption of kava in specified areas, in the same way to powers currently available under the Liquor Act. Secondly, the submission did not support the use of revenue raised by a licence fee to support education, on the grounds that this simply involved "trying to solve a problem that has been created by the licensing of kava in the first place". Thirdly, research was required not only on the pharmacological properties of kava, but also into its behavioural consequences (Galiwin'ku Community Incorporated 1991).

Syd Stirling MLA called for a deeming clause, which he suggested be set at 2 kilograms (rather than 5 kilograms, as the draft bill specifies) and for strong financial penalties - in the order of tens of thousands of dollars - against illegal trading. "Anything less would be worn as a business cost so lucrative are the returns" (Stirling 1997).

Dr Elizabeth Chalmers gave guarded in-principle support to the draft legislation, stating that it 'moves closer' than earlier legislation to what she described as the proper purpose of regulatory policy, namely that of balancing community control over the licensing of kava, with allowing room for market forces, and imposing defined statutory limits on legal supply (Chalmers 1997).

In contrast to many other submissions, which emphasised the urgency of further research into the effects of kava, Dr Chalmers also argued that the main priority of policy-makers at present must be to get what she called "the control issues" right, rather than focusing on the unknowns about kava and health.

While these submissions clearly reflected considered responses to the proposed Kava Management Bill, it also became clear to the Committee that many people were *not* familiar with either the contents or objectives of the bill. Indeed, it appears that the draft bill itself is not a product of extensive consultation, and some people commented that the fact that a draft bill had been prepared prior to the Sessional Committee conducting its inquiry compromised the validity of the inquiry itself.

(At the same time, it could be argued that members of kava-using communities have been making it clear for a long time that they want to see an effective system of controlled supply, and that the draft bill embodies these wishes.)

The Committee recommends that greater efforts be made in future to describe and explain the proposed bill to members of kava-using communities.

6.3. Summary

Among Aboriginal communities in which kava is or has been widely used, there is a wide range of views about the desirability of kava being made available, and about the benefits and costs associated with kava. In some communities, traditional owners and/or the local council have attempted to impose bans on the sale and supply of kava in their communities, on the grounds that kava has been associated with illnesses, anti-social behaviour and a breakdown in community activities such as employment programs.

However, in the absence of effective controls on the regional kava trade - controls that can only be exercised by *governments* - these communities have found it virtually impossible to prevent kava being brought into the community.

At the other extreme, some community authorities have called for continuing availability of kava, with sale and supply being subjected to minimal regulation. The most common justification for this view is that, while excessive kava use is recognised as a cause of problems in the community, these problems are considerably less serious than those associated with alcohol misuse, and in the absence of kava, many people would turn to alcohol.

Notwithstanding the presence of diverse views about kava, verbal consultations conducted by the Sessional Committee, as well as other sources, including a workshop attended by representatives of five kava-using communities, suggest that widespread support exists for a system of controlled supply.

Yolngu advocates of a controlled supply system have indicated that they want to see a wholesale system controlled by Yolngu people themselves. A model advocated by Yolngu participants in a workshop in 1996, chaired by Miwatj Health, involved a Yolngu-administered wholesale agency, controlled by a board on which each kava-using community would be represented, and through which profits from the sale of kava would be disbursed back to the constituent communities.

The Committee believes that this model should receive serious consideration.

The diversity of views about kava between communities is further complicated by an absence of consensus *within* many kava-using communities. Those who call for communities to 'make up their own minds' need to accept that in many instances, the requisites for a consensual view simply do not exist.

The range of views about kava expressed by Aboriginal individuals and groups is matched by a similar diversity of views among non-Aboriginal people. One medical officer with extensive experience in the region has called for an outright ban on kava, on the grounds of apparent associations between heavy kava use and malnutrition, liver damage and possible thrombotic effects, combined with an absence of knowledge about other possible effects of heavy kava use. Another has been highly critical of the NT Government for its unwillingness or inability to enforce controls on kava, and called for a system of regulated supply.

A number of submissions to the Sessional Committee Inquiry addressed the draft Kava Management Bill. One community council - the same council that had earlier banned kava -

bluntly rejected it, claiming that it did not provide an appropriate solution to kava-related problems.

One submission called for a deeming clause to be set at two kilograms, rather than five, as proposed in the draft bill. The same submission called for strong financial penalties - in the order of tens of thousands of dollars - against illegal trading.

While these submissions clearly reflected considered responses to the proposed Kava Management Bill, it also became clear to the Committee that many people were *not* familiar with either the contents or objectives of the bill. The Committee recommends that greater efforts be made in future to describe and explain the proposed bill to members of kava-using communities.

7. RESEARCH INTO KAVA: CURRENT STATUS AND FUTURE NEEDS

Nationally and internationally, research into the effects of kava does not figure prominently alongside more pervasive drugs such as tobacco, heroin or amphetamines. Possible problems associated with its use by a small number of people in a remote pocket of one of the remotest parts of the continent do not scream out to policy-makers for attention alongside these other, better known substances.

It is partly for this reason that, as this report has shown, our knowledge of kava, its properties and effects, remains fragmentary and inadequate. In particular, very little is known about the long-term effects of chronic consumption at the levels to be observed in Arnhem Land.

Any program for future research into kava in Arnhem Land needs to address three issues:
- What research should be done?
- How should the research be done, and
- How should it be funded?

In this chapter, we comment briefly on each of these issues.

7.1. What research?

At present, virtually all of the recorded observations about the chronic effects of heavy kava consumption are either anecdotal, or based on small samples or pilot studies. Therefore, virtually all of the observed or imputed effects require further investigation. In particular, research is required on:
- central nervous system effects of heavy kava use;
- possible linkages between heavy kava use and susceptibility to melioidosis and other infectious diseases;
- effects of heavy kava use on vision;
- linkages between heavy kava use and malnutrition, both among drinkers and drinkers' dependents;
- a possible association between kava use, ischaemic heart disease and sudden deaths;
- interactive effects of kava and alcohol.

Other questions that arise from observations among both professional observers and members of kava-using communities include:
- the extent to which heavy kava use is associated with the development of neurocognitive deficits and whether this effect is further exacerbated by heavy alcohol use;
- the nature of the skin reaction associated with heavy kava use, and the extent to which this reaction is associated with increased susceptibility to skin infections;
- the extent to which changes to liver function, neurocognitive deficits and skin changes that may occur with heavy kava use are completely reversible after consumption ceases;
- the nature of tolerance, withdrawal and dependence associated with heavy kava use.

These topics are a far from comprehensive list relating to health effects of heavy kava use. As mentioned earlier in this report, virtually no research has been carried out into social and

cultural aspects of kava use in Arnhem Land. Accordingly, some questions that might be addressed include:

- the meanings and purposes that the use of kava has in kava-using communities today (not necessarily the same meanings and purposes as those associated with the introduction of kava in the early 1980s);
- attempts, particularly successful attempts, to control kava use at the level of the community;
- people's reasons for drinking/not drinking kava, and for ceasing or reducing kava consumption;
- differences between and within communities in patterns of kava use.

To proceed further with itemising research topics in the absence of further consultation with members of kava-using communities would, in our view, be inappropriate. This brings us to the second aspect of this issue.

7.2. How should research be conducted?

During the Committee's visit to one kava-using community, a Committee member asked a senior Aboriginal Health Worker how she thought the community would feel about further research being conducted on the effects of kava, possibly involving blood samples and the like. The Health Worker smiled and said caustically: "Yes of course. We're used to being human guinea pigs".

Her reply encapsulates something of the pervasive cynicism among Aboriginal people about research, little of which yields any perceptible benefits to the subjects of that research. The depth of feeling among Aboriginal people means that *how* any research is conducted is no less important than the questions asked in that research. In particular, research proposals must take account of indigenous perceptions about kava and problems associated with it, rather than be guided by outsiders' curiosity, and the processes through which any research is conducted must involve negotiation with communities and groups involved, joint participation in determining the research design, ethical clearances, and adequate feedback mechanisms.

7.3. Funding of research

At the time the present Inquiry was set up, it was anticipated that the NT Government might impose a levy, similar to the Living With Alcohol Trust Account, on all kava sales, with a purpose of funding research and education on kava.

Since that time, the High Court has, in effect, removed the constitutional legitimacy which State and Territory governments require to raise any levies or excises of this nature.

Given the nature and recency of this development, the Committee considers it to be beyond its terms of reference to suggest mechanisms for funding further research on kava in Arnhem Land.

However, we do believe that the issue needs to be addressed at a Territory level, for the reason outlined at the beginning of this chapter: namely, in a context where demands on

limited health research funds are intensive, it is not realistic to expect that adequate funds will be forthcoming nationally to provide for a research program on a subject that, from the point of view of other States and Territories, is hardly of pressing concern.

8. CONCLUSIONS AND RECOMMENDATIONS

The recommendations set out below are those of the authors of the report, and are in the form of recommendations to the Sessional Committee which commissioned the Menzies School of Health Research to prepare the report.

Our conclusions and recommendations are as follows:

1 The evidence contained in this report is a clear indication that the present situation regarding kava in Arnhem Land is unsatisfactory in many ways, and should not be allowed to continue. Specifically:

- a psychoactive agent about which little is known is being consumed in a manner that is almost certainly deleterious to the health of individuals, and to the social and economic wellbeing of many families and, arguably, entire communities;
- no effective control system is in place to monitor, much less regulate, the sale and supply of kava in the Northern Territory;
- worse, the system under which suppliers were authorised to sell and distribute kava has been in suspension for several years now, leaving the way open for black marketeers who are accountable to no public authority to exploit and further develop the kava market;
- these black marketeers operate with little risk of prosecution by police, or of meaningful sanctions if they are prosecuted;
- consequently, any attempt at the community level to control the availability of kava is likely to be undermined by black-marketeers, who have the resources to offer attractive returns to their agents at the local level.

2 The Government can no longer justify its own inactivity by referring to uncertainties over the nature of Commonwealth policy. The proposed National Kava Management Strategy, outlined earlier in this report, provides a framework within which Commonwealth and State/Territory authorities can exercise complementary roles, with clearly defined functions and responsibilities.

3 It is therefore incumbent upon the NT Government to clarify its own policy position and take appropriate steps to implement it. In principle, three options are available:

- unregulated sale and supply of kava;
- a system of controlled availability;
- a total ban on kava.

4 The evidence presented to the Committee suggests that, while the first option - deregulation - has its supporters, most indigenous people in kava-using communities, as well as many other people, favour either controlled availability or a total ban.

5 Cogent arguments can be presented for both of these courses of action. The main arguments in favour of controlled availability are:

- in principle, it accords with the expressed wishes of most Aboriginal people in most of the communities that have elected to retain kava;

- although it was implemented in 1990, it has never been given a fair chance to prove itself - or fail to do so. The system was introduced in June 1990, and reviewed less than three years later. That review recommended certain changes, designed to make the system more effective, but these changes have never been implemented, mainly because of uncertainties over the respective authority and role of Commonwealth and Territory agencies;
- in view of the weight of evidence that kava *can* be used in such a way that harmful consequences are minimised, a total ban on its use is excessive, and runs counter to Aboriginal self-determination.

6 The principal arguments for banning kava are:

- however harmless recreational and ceremonial kava use may be in Pacific Island countries, there is by now abundant evidence that kava, in the way it is widely used in Arnhem Land, is associated with a large number of adverse health consequences and thereby adds to an already excessive burden of ill-health;
- previous attempts to establish a system of controlled availability have been ineffective;
- it is inappropriate for any government to stand by while a drug, many of the pharmacological and toxicological properties of which are unknown, is used in this way;
- if the ill effects associated with kava were found to occur among non-Aboriginal users of some other drug, resident in any town or suburb in the NT, that drug would be banned tomorrow.

7 We believe both arguments contain elements of truth. However, we are not persuaded that an immediate ban on kava, coming straight after several years during which neither the Commonwealth nor the Northern Territory Governments have maintained or policed effective control mechanisms, would be appropriate.

8 At the same time, if option two of recommendation 3 is chosen, we believe that the Government should make it very clear to all parties that should it not prove possible to establish an effective system of controlled availability within a given time (say two years), and/or should the current levels of kava-related health, social and economic problems not be significantly reduced over the same time, then the Government would consider all available options, including banning the sale and supply of kava altogether.

9 Accordingly we recommend that, in the immediate future, the Government re-establish a system of controlled availability of kava, along the lines codified in the proposed Kava Management Bill. This it should do for a trial period of two years, during which consumption levels and prevalence of kava related effects would be monitored.

10 At the end of the trial period, the Government should review its position, with a view to maintaining controlled availability, or banning kava altogether.

11 As a matter of urgency, police should be given immediate and effective powers to investigate and prosecute illegal kava traders. *These powers should not await the development of a final Kava Management Act, but should be created by means of interim legislation.*

12 While the proposed Kava Management Act provides a framework for the establishment of a system of controlled availability, some additional points should be taken into account. Firstly, communities should be given explicit powers, similar to those available under the *Liquor Act*, to designate *dry areas.* Secondly, at the level of individual communities, control systems should be developed through a process of genuine negotiations between government authorities and community members. Thirdly, a new mechanism must be found to fund education and research on kava, given the recent High Court decision invalidating state levies. We recommend that Territory Health Services be directed to identify options.

13 We believe that heed should be paid to the desire expressed by many Yolngu groups and individuals, for a supply system controlled and administered by Yolngu themselves, with any profits from kava sales being directed back into the communities in a manner that is transparent and accountable. In particular, we commend a model advocated by Yolngu participants in a workshop in 1996, chaired by Miwatj Health, involving a Yolngu-administered wholesale agency, controlled by a board on which each kava-using community would be represented, and through which profits from the sale of kava would be disbursed back to the constituent communities.

14 While we recognise the efforts that have already been made to educate people about responsible kava use, it is clear that the educational resources currently available in kava-using communities are inadequate. We therefore recommend that, as a matter of urgency, educational resources be prepared, especially for health workers and kava-drinkers.

15 Finally, we recommend that a simple English version of these conclusions and recommendations be prepared and taken back to all communities consulted by the Committee, and used as a basis for information-sharing and discussion.

While these steps, in themselves, will not solve all kava related problems, they provide a framework with which communities, NT Government agencies and Commonwealth agencies can act in a co-ordinated, co-operative manner to minimise kava-related harm.

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