

The ATS Boom in Southeast Asia

"Many networks that once produced heroin in our neighbouring countries are simply switching trades with the corrupt assistance of police and soldiers on all sides. Methamphetamines are where the money is now and they are a lot harder to control than heroin."

In the 1990s, Southeast Asia experienced a boom in the production and consumption of amphetamine-type stimulants (ATS), in particular methamphetamines (meth). At the same time, the region has seen a declining opium market, although the downward trend may well be reversing now. How exactly these two phenomena interrelate is still an unresolved question. The ATS market seems to have its own distinct dynamics; for users, the availability and accessibility of opium and heroin have an impact on ATS use and vice versa, and some former heroin producers have moved to producing ATS.

The overall trend in Southeast Asia is a shift from opium/heroin to ATS as the primary drug on the market. Initially, this was mainly methamphetamines sold as pills (yaba/yama), but increasingly it is being sold in crystal form (ice/shabu), which is already largely available in East Asia. Almost two thirds of the world's amphetamine and methamphetamine users live in Asia, most of them in East and Southeast Asia.²

Southeast Asia, or more specifically the Greater Mekong Subregion,³ is heavily affected by yaba/yama manufacture, trafficking and use. Major production happens in some countries, in particular Burma for methamphetamine pills and China for crystal meth. Some of the largest ATS seizures in the world occur in the area. In other countries such as Thailand, treatment and criminal justice systems are dominated by methamphetamine cases. Burma and the provinces that border China and Thailand have been the worst affected in the past decade. Since 2003/04, when Thailand significantly increased law enforcement efforts in the so-called 'war on drugs', illicit trafficking shifted from the Golden Triangle to Laos, Cambodia and Vietnam where an increase in use, seizures and arrests was seen.⁴

The ATS boom is an example of what can be described as 'displacement': a campaign against one drug (opium and heroin) can lead to the rise of an equally or more dangerous substitute (methamphetamine).⁵ International pressure and national opium eradication campaigns led to a decline in opium cultivation and heroin production in the Golden Triangle. At the same time, a methamphetamine market in East and Southeast Asia developed, and resulted in the rise of meth manufacturing facilities in what was traditionally a heroin area.



While the reduction in the availability of opium and heroin during the mid- to late 1990s resulted in many opiate users shifting to methamphetamine, this alone cannot account for the significant increase of ATS onto the market. Although there is some overlap and interaction in opium and methamphetamine use, the methamphetamine market

has its own distinct dynamics. The increase in the use of methamphetamine and other ATS has been driven by both demand and supply, as well as profound socio-economic changes in the countries affected, which have moved from rural agricultural based economies to urban, industrial and market based societies.

Amphetamine-type stimulants (ATS)

Amphetamine-type stimulants (ATS) are a group of substances made of synthetic stimulants including amphetamine, related drugs like methamphetamine, and ecstasy (MDMA) and its analogues. Amphetamines stimulate the central nervous system and ecstasy acts as both a stimulant and a hallucinogen. The most popular ATS in East and Southeast Asia is methamphetamine. In Southeast Asia, ecstasy is used mainly for recreation among the more affluent due to its relatively high price. The name 'ecstasy', however, usually refers to a drug that leads to a state of 'ecstasy'. It is mostly a mixture of methamphetamine and ketamine, an anaesthetic used in human and veterinary medicine that has hallucinatory effects.

ATS are controlled under the 1971 Convention on Psychotropic Substances. Ecstasy and related drugs are under schedule one, the most tightly-controlled category, which includes drugs that have the least medicinal use and the highest perceived public health risk. Amphetamines and methamphetamines are under schedule two because they have limited medical use. Even though the drugs are regulated, this does not apply to illegally-produced drugs. One of the Psychotropic Convention's main limitations is that it was not designed to control illicit markets, but to control and regulate legitimate pharmaceutical markets and prevent the drugs being illegally diverted into illicit markets.

Methamphetamine, or more precisely methylamphetamine ('meth' for short), of the amphetamine family, is composed of an amphetamine molecule with an additional methyl group attached to its nitrogen (amine group). The addition of a methyl group to a mind-altering chemical slightly alters the effects, duration, and/or potency of the chemical; it makes it more potent and addictive than its analogue amphetamine.

Methamphetamine and amphetamine are usually found in powder or tablet form. Illegal methamphetamines are complex mixtures that contain additives, often referred to as cutting agents or adulterants (generally caffeine in Southeast Asia), together with by-products from the manufacturing process and impurities from the precursors. A more pure crystalline form of methamphetamine, otherwise known as 'ice' has a translucent rock-like appearance, resembling shards of glass.

Meth increases the level of dopamine in the brain - a chemical associated with feelings of pleasure and reward, It does this both by boosting dopamine's release from nerve cells and by blocking its reabsorption. The effect of methamphetamine use closely resembles the physiological and psychological effects of an adrenaline-provoked fight-or-flight response, including increased heart rate and blood pressure. Other effects include euphoria, a decreased need for sleep, increased mental alertness and energy levels, a lack of inhibitions and an increased sexual appetite, a sense of well-being, increased confidence and a decreased desire for food. Users may be friendly and calm one moment, angry and terrified the next. Some people feel compelled to repeat meaningless tasks, others may pick at imaginary bugs on their skin.

The effects depend on how much is taken and are felt after 20-40 minutes if swallowed, 3-5 minutes if snorted, and immediately if smoked or injected. Users who smoke and inject meth report an intensely pleasurable wave of sensation or 'rush'. Over time, the drug's effectiveness decreases and users need to take higher doses to get the same results; they also have great difficulty functioning without the drug. Prolonged drug use may cause sleeplessness, loss of appetite and weight loss, an elevated body temperature, paranoia, depression, irritability and anxiety. Chronic, prolonged high-dose methamphetamine use can cause psychosis, with intense paranoia and delusions. Users believe, for example, that other people are talking about them or following them. Methamphetamine-induced panic and psychosis can be dangerous and may result in violence.

Methamphetamine is created in laboratories in a variety of ways. The two main precursor chemicals needed are ephedrine (or pseudoephedrine), which is preferred in East Asia and Southeast Asia, and phenyl-2-propanone (P2P), which produces a less potent type of methamphetamine and is more common in North America and Europe. Commercial ephedrine is produced by one of three methods: (a) extraction from Ephedra plants, a process typically used in China (b) full chemical synthesis or (c) via a semi-synthetic process involving the fermentation of sugar, followed by amination, a process used in India and increasingly in China.

Japan's experience with methamphetamine

Methamphetamine is not a new drug in East and Southeast Asia, which has its own distinct history with the substance. The origins can be traced to Japan. In 1893, the Japanese chemist, Nagayoshi Nagai, first synthesized methamphetamine from ephedrine in 1885. In 1919, another Japanese chemist, Akira Ogata, manufactured crystallised meth. Japan was the first country in the world to experience a serious 'meth epidemic' after World War II and still has a significant abuse problem.

Meth became widely available during World War II, when it was given to pilots and soldiers, and factory workers to give them the stamina during battle and to meet production quotas. After the war, military stocks and surplus supplies from Japanese pharmaceutical companies were dumped on the market. They were aggressively marketed with the slogan "fight sleepiness and enhance vitality".⁶ At the time, most Japanese were ignorant about the hazardous properties of methamphetamine, which could be bought in pharmacies.

Methamphetamine was widely available and usage dramatically increased. At its peak in 1954, there were approximately 550,000 chronic users and two million ex-users of methamphetamine.⁷ In 1949, the Japanese Ministry of Health prohibited its production in tablet or powder form, but meth in liquid form for injecting, was not covered by the prohibition. Injecting, which had been uncommon, became a major method of use. Methamphetamines, known as 'Philopon', was sold in ampoules which were available without prescription.⁸

In 1950, the Ministry of Health totally banned meth production but many pharmaceutical companies kept on producing it illegally and a significant black market developed. Clandestine laboratories produced their own versions of the drug. The Yakuza organised crime syndicate first gained access to government stockpiles and then started to produce methamphetamine in small, clandestine secret kitchen laboratories throughout the country.

A second epidemic wave took off in the early 1970s, a period characterized by economic growth and prosperity and by a new student youth movement. A third wave started in the late 1990s.⁹ In 1997, arrests statistics suggested there were 400,000 to 600,000 meth users in Japan, out of which 150,000 to 500,000 were injecting it. In 2001, the figures were similar, but with an estimated additional 2.18 million casual users.¹⁰ In recent years, meth use seems to have stabilised or even declined slightly.¹¹

Although the decline in use through control and educational measures was remarkably effective in the 1950s, the second and third waves were a lot more resilient. In the 1950s, the Health Ministry's measures had targeted a population that was naive about the hazards of methamphetamine and was inclined to change its behaviour. With informed users who consciously chose the habit, the same measures were much less effective.¹²

Nowadays, almost all methamphetamine is imported into Japan.¹³ Most of it is smuggled into the country by Yakuza organized crime groups. With the crackdown on meth production in the 1950s, laboratories and expertise first moved to South Korea and then Taiwan, Hong Kong and mainland China. Japan still has one of the largest crystal methamphetamine markets in East and South-East Asia and financially, it is the most lucrative in the region.¹⁴

The dynamics of the ATS problem in East and Southeast Asia today are more complicated than in other regions because substantial work-related use of methamphetamine co-exists with recreation.¹⁵ Methamphetamine first became popular in Japan and then in the fiercely competitive and very hard-working cultures of other rising Asian 'tiger economies' - in particular South Korea and Taiwan - that copied the economic model of Japan. It moved on to the surrounding countries such as Thailand, Indonesia and the Philippines with the further expansion of the economic model. Methamphetamines have been well established in East and Southeast Asian cultures for many years, but in the past two decades, a number of trends have led to an enormous boom in use, manufacturing and trafficking.

The conventional explanation for this trend has been that the amphetamines gave ambitious, upwardly-mobile, urban people the energy to succeed; it gave the more marginalised urban and rural labour force the necessary stimulant to work more and longer hours that were needed in a highly competitive economy with poor labour conditions. The drug reduced fatigue and the pain associated with over-work.¹⁶ "Amphetamine tablets are bought by the Thai poor as a means, not of recreation as in Europe and America, but of boosting energy to work harder and longer," according to a newspaper report in 1997. "Typically, it is taxi drivers, long-distance truckers and factory workers, all paid by the hour, who are dependent on yaba. The more they swallow, the more they earn."¹⁷

"There is a definite link in this part of Asia between amphetamine use and economic development," Richard Dickens of the United Nations International Drug Control Program (UNDCP, now UNODC) in Bangkok argued in 1997.¹⁸ He warned about an even larger upsurge in the region: "We are increasingly concerned about the spread of amphetamines into China as well. With the Chinese economy now expanding so rapidly, and the pressure that is putting on working Chinese, there is potential for explosive growth." Ten years later, he appears to have been right. Reports in 2006 identified large increases in the use of yama pills and crystalline methamphetamine.¹⁹ In recent years, China also has become a major source of crystal meth for many Asian and Pacific Rim nations, mainly from laboratories in Fujian and Guangdong provinces in the eastern and south-eastern coastal areas.²⁰

Regional market differences

Three distinct but overlapping ATS markets appear to exist in the Southeast and East Asia region at present. In East Asia, including East China crystal meth - or ice - has been predominant historically, while yaba/yama pills were the ATS of choice in the Greater Mekong sub-region, although ice seems to be increasingly penetrating the yaba/yama market. However, the following distinction still reflects the main characteristics of ATS use in the different regional markets:

Yaba or yama pills ('crazy medicine' and 'horse medicine' in Thai): Thailand is the main market; there is considerable use in Burma, and Yunnan, Laos and Cambodia are emerging as sizeable consumer markets. Basic characteristics are that these are small-sized pills (90 to 100 milligrams) with typically a 20 to 30% methamphetamine content, are almost always combined with caffeine. Some three hundred different types of yaba pills have been detected with different qualities, brands (WY, SY, 99) and colours (red, blue, pink). Principal production facilities are in Burma. Pills are swallowed but often 'smoked' (vaporised and inhaled) in ways similar to 'chasing the dragon' with heroin. Pills are crushed and heated on tin foil folded into a little boat shape (from packages of cigarettes or chewing gum) and put over a flame. The fumes are inhaled through the case of a writing pen or straw for instance, often with use of a primitive 'water pipe' made of plastic water bottles. Yaba is also increasingly being injected. Crushed pills are dissolved in water and filtered with cigarette filters to avoid injecting the remnant powder.

Ice or shabu: a high purity crystal methamphetamine hydrochloride that can be 'smoked' or injected. The translucent, rock-like crystals resemble shards of glass or ice. Its main markets are in Japan, the Philippines, Malaysia and Australia, but increasingly it is taking over part of the yaba

market in Thailand. Widespread and increasing use is reported in China, though not much in Yunnan, where pills are predominant. Principal production facilities are not in Burma but in China, the Philippines, Indonesia, and several other countries where huge laboratories have been found, such as Malaysia and Fiji.

Ecstasy ('ya-E'): pills sold under this name represent a wide variety of mixtures, sometimes including MDMA (methylenedioxymethamphetamine, the 'real' ecstasy) but often a mix of methamphetamine and ketamine. Principal production facilities are also not in Burma but in China and several other countries, in particular Europe (the Netherlands and Belgium). Laboratory operators in China mix MDMA powder, imported from Europe, with substances such as caffeine, heroin and ketamine in their pills.²¹ Ketamine ('ya-K' in Burma and Thailand, k-feng or k-powder in China) is also used in pure form. It is the most used drug in Hong Kong and is gaining popularity across southern China. Its use is spreading throughout East Asia as well.²²

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METHAMPHETAMINE



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Methamphetamines seized in Burma

By 2007, the trend of a declining opium market and an increasing ATS market was apparent in all countries in Southeast Asia. Although China, Burma and Vietnam still list opium and heroin as their main problem, Cambodia, Laos, and Thailand cited methamphetamine as the leading drug of concern. China, however, stated that consumption in pill and crystal form was still increasing, and Thailand reported that use of crystal methamphetamine had increased, but use of yaba was on the decline. Laos and Thailand ranked yaba as their primary drug of concern with only Laos reporting an increase in heroin too. Burma and China still listed heroin first, both reporting a decrease in its use, however.²³

Burma, Thailand, and China together seized almost 40 million meth pills in 2006, half of them in Burma alone. In crystal form, six tons were seized, almost all in China. The fact that practically no crystal meth was found inside Burma and only a few hundred kilograms, reportedly of Burmese origin, were seized in Thailand between 2002 and 2006 seems to confirm that the 'ice' on the regional market - in contrast to yaba - does not primarily come from Burmese labs, but is mainly produced in China itself. Production in China has increased significantly in the last decade. Chinese authorities reported that 37 laboratories producing ATS were raided in 2005 with 30 of them in Guangdong province. In 2006, 53 ATS laboratories were raided and 75 in 2007. From 2001 to 2007, 94% of the seized ATS laboratories produced methamphetamine.²⁴ In the wider Southeast Asia region, major crystal meth production facilities and consumption markets also exist in the Philippines, Indonesia, Malaysia and Australia.

The Thai yaba boom

Thailand was the first country in Southeast Asia to experience a significant yaba epidemic. The drug was initially known as yama ('horse medicine'), but authorities renamed it yaba ('crazy medicine') in 1996 to discredit the idea that the pills enabled people to 'work like a horse'.²⁵ Amphetamine had been freely available since the early 1960s in Thailand and only became a major problem in the 1990s. Initially, production was largely in laboratories in Thailand itself, in Bangkok in the 1970s, when the possession of ephedrine was still legal there.

"When I was young many people used amphetamines," an ONCB source recalled. "They were imported from Europe and sold over-the-counter legally in pharmacies. People were used to it - students, bus and truck drivers used it regularly to enhance their study or work performance."²⁶ Amphetamines were first marketed in 1955. Initially the pills were imported and imprinted with the picture of a 'horse head' on one side - probably the reason why it was called yama - and the word 'London' on the other.²⁷ Amphetamines were considered to be a low priority by law enforcement agencies that ignored it and focused their resources entirely on the suppression of heroin and marijuana. Meanwhile amphetamine slowly grew in popularity without much notice.

When amphetamine use started to become a problem in the 1970s, and was associated with traffic accidents involving bus and truck drivers, the Thai government banned amphetamines. The 1979 Narcotics Act designated amphetamines as narcotics with the same schedule as

Smoking methamphetamine through waterbottle



heroin. Imports of amphetamine were controlled and were only available for medical purposes. "That caused an increase in the price on the illicit market, because people continued to use it," the ONCB official said. "This is when illegal production started in Thailand. They produced the tablets with caffeine because it was produced like that before."

These so-called 'look-alike amphetamines' usually contained caffeine, ephedrine, pseudo-ephedrine and phenylpropanolamine, which were found in decongestant pills.²⁸ In 1988, the psychotropic Substances Act of 1975 was amended to strengthen control over the precursors of 'look-alike amphetamines'. They vanished from the market, partly because they were of poor quality, and because methamphetamine appeared. It was produced in Bangkok and up-country and was based on ephedrine smuggled into Thailand through the Klong Toey port in Bangkok, the Thai-Burmese border, and the coasts of the Gulf of Thailand (Samut Sakhon) and eastern region.

Production was often divided into two steps: the production of methamphetamine powder and creating tablets from it. Laboratories were often small-scale outfits that operated on an irregular basis rather than a consistent production schedule. To prevent detection, operators often made a batch of product, then disassembled the laboratory, and either stored or moved it to another location while they got more precursor chemicals. The sites were often far from populated areas because the first step of producing the meth powder generates a penetrating stench which is easy to detect. Pill punching often happened in urban areas and even in vans.²⁹

With increased law enforcement in the early 1990s, meth factories moved from urban centres to remote hills in northern Thailand. They were pushed across the border into Burma after a Thai government crackdown in 1997. Yaba labs continued to exist in Thailand on a smaller scale, as evidenced by seizures of mixing and tablet making machines. Dies and punches seized were for the typical 'WY' logo seen in South-East Asia, often erroneously described as being the brand name for Wa-produced yaba.³⁰ The last reported yaba production sites in Thailand date back to 2001, when 10 laboratories were dismantled.³¹

The rapid transition from an agricultural society to an industrial one in the 1980s and 1990s forced changes in work habits and pace, which had greatly contributed to the increase of meth use in Thailand. Reports of employers allowing or encouraging yaba use are common.³² In addition to 'traditional users' such as long-distance truck drivers, new groups affected were industrial workers, farmers and fishermen. Young people started to use it recreationally.³³ Subsequently, consumption patterns changed. Users switched from taking yaba pills to smoking



Smoking methamphetamines in Northeast India

them, which had a quicker effect and increased euphoria. Similarly, a growing market was created among urban Thais, who harnessed its effects for social events and nightclubbing.³⁴ "In the past people thought it was a medicine, nobody considered it to be addictive. It was put in water and sipped," according to the ONCB official. "But later people started to smoke it; then one gets addicted rapidly."

During the 1980s and for much of the 1990s, cannabis and heroin were the main drugs used in Thailand according to treatment and law enforcement records. During the Thai economic boom between 1988 and 1995, however, treatment centres noted a spectacular rise in yaba use. Of those treated for drug dependency, the number who used yaba rose from 0.4% (out of some 14,000 registered users) in 1990 to 60.3% (of about 27,000) in 2000. They largely replaced opium and heroin users and accounted for the increase in the treatment centre capacity.³⁵ By 1993, yaba use was already more prevalent than heroin or opium. Between 1993 and 2001 a 1,000% increase in yaba consumption was registered.³⁶ By 1998, 81% of admissions to treatment programmes were for methamphetamine use, and by 2000, 80% of arrests for drug law violations involved ATS offenders. At the end of the 1990s, methamphetamine had replaced cannabis as the main illegal drug, with students being particularly high users.

Beside the Thai crackdown, other changes in 1996/7 contributed to a significant fuelling of the upward trend. The surrender of Khun Sa and his Mong Tai Army (MTA) in 1996, then the largest player in the Burmese opium market, disrupted the regional heroin trade and caused price instability. MTA breakaway groups became heavily involved in large-scale meth production and flooded the Thai market at rock bottom prices. A severe economic crisis also hit the Asian continent in 1997 which made heroin even less affordable. The recession caused a wave of unemployment and deteriorating work conditions for those who had jobs.

Many began to use yaba as a consolation or to sell it to make money when other opportunities were not available. The supply chain of yaba pills generated huge profit margins. A pill cost about five US cents each to manufacture, but sold for 50 cents at the Burmese-Thai border and for \$1.50-2.50 at the retail level. The large mark-up allowed many people along the supply chain to profit from selling the drugs. Dealers could make a living from selling a few pills a day and smugglers could afford to lose considerable amounts of pills to law enforcement efforts and still make substantial profits.³⁷ Together, these factors led to an epidemic that has only recently stabilised.³⁸

The popular use of opiates has almost disappeared in some central and southern regions of Thailand. In the north, younger users (aged 16-25) generally prefer yaba, while older people (31-40) stick to opium and heroin, according to research by the Asian Harm Reduction Network (AHRN) in Chiangmai. In the northeast, heroin use continued to rise towards the end of the 1990s, but in mid-1999 a major shift from heroin to methamphetamine took place. Heroin is now for more affluent people above the age of 25.³⁹ Rising opiate prices, profound socio-economic changes in Thai society, as well as generational differences and fashions of drug use, were the main factors causing the shift from opium and heroin to methamphetamine.

Thailand's war on drugs

In February 2003 the Thai Prime Minister Thaksin Shinawatra, launched a 'war on drugs', with the objective of achieving a massive reduction in use and availability. Thaksin's 'war on drugs' was a response to the failure of previous campaigns. In 1996 the Thai government first became aware of the rising methamphetamine problem and started a 'scare campaign'. At the time, the media carried stories about heavy users who displayed violent and psychotic behaviour. Posters were put up all over the country and monks, pop stars and highly respected senior citizens sent out anti-drug messages. Television advertisements shamed policemen and other officials who were involved in the trade.⁴⁰

None of this stopped the rising figures. Those in the trade were sheltered by powerful figures in the police, bureaucracy and political networks - one of the reasons it was difficult to curb. In fact, some research suggests that the 'public awareness campaign' helped to popularise yaba, particularly among young people. The 'mad drug' campaign backfired: when people took yaba, they found it made them alert and happy - not mad. It became fashionable and the drug spread to schools. Young people described yaba as fun and they took it before going out at night. A study found that they took yaba to defy the police and authorities. By

the year 2000, almost a third of the volume on the market may have been sold in schools.⁴¹ An ONCB official did not say it in so many words, but Thailand has possibly created its own problem. "When you prohibit something, people want to try it," he acknowledged.⁴²

By 2000-2001, many people in the social elite found their own children were taking yaba. In opinion surveys, people identified it as a serious social problem. In 2003, the populist Thaksin started an aggressive 'war on drugs' with the aim of eradicating methamphetamine in three months. The campaign resulted in the arbitrary inclusion of drug suspects on poorly-prepared government 'blacklists' or 'watchlists', the intimidation of human rights defenders, violence, arbitrary arrest and other breaches by Thai police, coerced or mandatory drug treatment, and scores of extra-judicial killings. The government blamed these killings largely on gangs involved in the drug trade, but human right organisations blamed them "on the endorsement of a policy of extreme violence by government officials at the highest level."⁴³

After Thaksin was ousted by a coup in September 2006, an independent special committee, formed by the temporary military government, investigated the unlawful deaths and found that 2,819 people had been killed between February-April 2003. Many of the dead had been blacklisted by police or local authorities as suspected drug dealers. Of those deaths, 1,370 were related to drug dealing, while 878 of them were not. Another 571 people were killed without apparent reason. Police officers were suspected to have been involved in many of the attacks, particularly as many people died soon after being taken to police stations for questioning. Despite many promises to bring those responsible for the murders to justice, by 2008 the committee had still not laid any charges.⁴⁴

Although opinion polls throughout the drug war showed widespread support for the government's violent tactics, the outcome, according to Human Right Watch, did not curb Thailand's illegal drug trade, but simply made it more dangerous. Most drug users continued to use heroin or methamphetamine, albeit at a higher cost and less frequently. Treatment experts noted that many people who started drug treatment in early 2003 were not drug users at all, but were people who feared for their lives because they were suspected of using drugs.

The peak of the yaba epidemic was in 2003 and the Thai government claims its accessibility and availability decreased due to the 'war on drugs'. However, arrests have increased significantly since 2005, when they were at their lowest level since the 2003 drug war. Treatment admissions showed a significant decline after a nearly 10-fold increase in 2003 when tens of thousands were in compulsory treatment. The situation stabilised throughout 2005 and 2006,

Samples of Methamphetamines available in Burma



but increases were noted in 2007.⁴⁵ The reliability of these data may be questioned, however, as the aggressive 'war on drugs' had the effect of reducing self-reporting of illicit drug use in surveys. Statistics for the time between 2003 and 2006 indicate unusually low prevalence rates. Successive new Thai governments announced revivals of anti-drug campaigns in April and November 2008, indicating that the problem has not been significantly reduced despite the drug war.⁴⁶ According to some observers, users turned to other drugs or other ways of administering using yaba. The practice of injecting crushed yaba pills dissolved in water (or sometimes methadone) is on the rise in Chiangmai,⁴⁷ where 38% of IDUs said they had injected amphetamines. In a survey of Bangkok IDUs, 64% of amphetamine injectors tested were HIV-positive, compared to 47% of opium injectors and 37% of heroin injectors. Interventions to effectively prevent HIV transmission among IDUs should remain a high priority for HIV/AIDS efforts in Thailand.⁴⁸

There are also indications of a recent epidemic of crystal methamphetamine ('ya-ice') among young people. Ice was

introduced to the Thai market a few years ago and expanded rapidly all over the country. This could develop further and pose health risks to the new users.⁴⁹ In 2002, a shipment of ice from Burma was seized for the first time in Thailand, according to an ONCB official. A large seizure of 148 kg happened in June 2006 and many smaller seizures have occurred since.⁵⁰

Burma: from powder to pills

Burma is often cited as one of the world's largest producers of methamphetamine pills, with China and India being the major sources of precursor chemicals, which are not produced in Burma itself. Drug trafficking organisations, many of whose members are ethnic Chinese, produce several hundred million methamphetamine tablets annually. According to an UNODC estimate in 2003, at least 700 million tablets were thought to have been shipped from Burma into Thailand. This is about 20 tons of methamphetamine or 7.5% of the global manufacture.⁵¹

However, estimates of ATS production have to be treated with caution; the amounts of pills are even more difficult to calculate than opium cultivation. Unlike the production of a plant-based drug such as opium, the production of ATS starts with readily available chemicals in easily concealed laboratories. This makes an assessment of the volume, location, extent and evolution of production extremely difficult.

Burma presents perhaps the clearest example of changing trends in heroin and methamphetamine production. Groups that used to produce heroin switched to producing methamphetamine tablets. Meth production in Burma is mostly concentrated in Shan State and areas bordering China and Thailand, and produced mainly for export to those countries. The conventional view is that the overall decline in poppy cultivation since 1998 in Burma has been accompanied by a sharp increase in the production and export of methamphetamine. Various sources claim that cease-fire groups that have implemented bans on opium cultivation and heroin production, such as in the Kokang and Wa regions, have simply moved - or rather diversified - to producing methamphetamine. In 2003, the SHAN news

agency identified 59 heroin refineries and 34 meth laboratories in Shan State, 19 of them were near the Chinese border and 15 were near the Thai border. According to SHAN "all of the groups in this list are cease-fire organisations or militia groups allied to the SPDC."⁵²

The dynamics of illicit drug markets are often unclear and other factors might have played a role. Up until 1996/97, large-scale manufacturing sites existed in central Thailand and the move to Burma seems, in part, to be a response to enhanced Thai law enforcement. The first person to produce methamphetamines in Burma was Wei Hsueh-kang (an ethnic Chinese who came to Burma with the KMT and later joined the MTA). He produced yaba in the late 1980s in Thailand after being approached by ethnic Chinese and Thai businessmen. Following the surrender of Khun Sa's MTA, which had started to produce yaba in 1995, the group disintegrated and some yaba producers moved to the Wa and Kokang regions, while others remained on their own.⁵³

Wei Hsueh-kang: King of ATS?

Wei Hsueh-kang and his two brothers Wei Hsueh-long and Wei Hsueh-yin - better known as the 'Wei brothers' - were part of the KMT intelligence network. They had fled from Yunnan to northern Shan State following the communist victory in China in 1949, and became engaged in the opium trade.⁵⁴ Wei Hsueh-kang - the middle of the three - and his brothers joined with Khun Sa after the CPB invaded northern Shan State in 1968, and he was in charge of finances.

In 1995 the Wei brothers came into conflict with some of Khun Sa's aides, and they joined a small Wa armed group on the Thai border, the Wa National Council (WNC). "First stationed at Khun Sa's base at Ban Hin Taek, they later broke away to establish their own empire along the Thai border. Lacking their own army inside Burma, the Wei brothers made use of their old Wa contacts and bankrolled the build-up of the Wa National Council in the early 1980s."⁵⁵

After the Wa mutinies against the CPB and the formation of the UWSA in the Wa hills along the China border, the WNC with the Wei brothers joined their UWSA. This gave the UWSA control over some strategic areas along the Thai border. Burma's military government, which was engaged in an unusual offensive against Khun Sa's MTA, then allowed the UWSA to send more troops to the south to attack the MTA. In return the UWSA could take control of any territory it managed to conquer.

Following Khun Sa's surrender in January 1996, the UWSA took over much of the MTA's former territory along the Thai border. The main force of the UWSA Southern Command is its 171st Brigade, which is officially led by Wei Hsueh-yin, but Wei Hsueh-kang is believed to yield considerable influence in the background. The UWSA headquarters has had some difficulties in controlling the Wei's Southern Command. There is also some resentment in the UWSA against Wei's influential role in the organisation.

"There are Chinese, ex-MTA people and ex-KMT people who are giving the UWSA economic and business advice," says Police Colonel Hkam Awng of the CCDAC. "They are using the name of the organisation. They are not real ethnic Wa, but Chinese. Like Wei Hsueh-kang, who is jumping ship all the time. He is an individual who is just doing business."⁵⁶

In anticipation of the 2005 UWSA opium ban, Wei Hsueh-kang started to develop the Southern Command, focusing on the area around the town of Mong Yawn near the Thai border. He set up a number of large orange, corn, beans, and coffee plantations, and also started several infrastructure projects in the region. Wei Hsueh-kang is also seen as the initiator and major shareholder of the Hong Pang Group, a large company in Burma consisting of several subsidiaries. But Wei Hsueh-kang is known mainly for producing methamphetamines. The initial capital of the Hong Pang Group is believed to have come from the drug trade. Following such accusations it was renamed Xinhong Company.⁵⁷

The Wa are often singled out as the main producers of yaba and heroin in Burma. The US government describes the UWSA as "one of the largest heroin-producing and trafficking groups in the world."⁵⁸ In January 2005, the US Department of Justice indicted eight UWSA leaders on heroin and methamphetamine trafficking charges, including chairman Bao You-xiang and Wei Shueh-kang.⁵⁹ There is no doubt that there are several laboratories in Wa-controlled territory and examples have been documented of Wa military - and SPDC military - protecting laboratories and shipments. According to TNI researchers, yaba production among the Wa started as early as 1993 in Tachilek and was done quite openly until the Thai crackdown in 1996-97.

Wa authorities have admitted they were involved in the setting up of meth laboratories in the Wa area in 1996. According to a forthcoming study on drug trade in the Wa region, Thai and Burmese businessmen - mostly ethnic Chinese from Thailand and Burmese who had been living in Thailand - came to Panghsang to establish meth factories. They had contacts with businessmen in China who had no difficulty providing the necessary precursors from China. They struck a deal with the Wa authorities to set up the factories and to be protected by the UWSA in return for a small amount of tax. The Wa were in a dire financial situation at the time, as the fight against Khun Sa's MTA had depleted their financial resources. Moreover, moving heroin to China had become problematic due to several major arrests of traffickers and Chinese pressure on the UWSA to stop trafficking heroin through China.⁶⁰

TNI research shows that many other groups are involved in yaba production. These include not only cease-fire groups, but also local government-backed militia, and some local Burmese army units.⁶¹ Most armed groups in Shan State who used to rely on the opium and heroin trade added methamphetamine as an additional - and increasing - resource. "It is difficult to really pinpoint yaba production to the Wa," says Police Colonel Hkam Awng of the Central Committee for Drug Abuse Control (CCDAC).⁶² "Some of the big seizures we made, we traced back to the Kokang area." The model of organisation is more like a franchise in which permission to produce is leased out. "Whenever we raid a laboratory, it is always owned by Chinese businessmen," says Hkam Awng. "Sometimes they may be paying Wa troops for protection. In Kokang it is the same. Some Wa and Kokang officials may be moonlighting from their own organisation. Therefore, it is difficult to say the Wa, as an organisation, is involved."

All actors in Burma's conflict have had some kind of involvement in the drugs trade, and the methamphetamine production and trade is no exception. Chinese organisations traditionally control the drug trade. They played a role not only in the UWSA but also in various other



Smoking methamphetamine in Kachin State

organisations, notably Khun Sa's MTA. They profit from the continuation of the conflict and instability in the country and have no interest in reconciliation and state building. Demonising and isolating the UWSA will make the organisation more dependent on the Chinese organisers, and will further obstruct reconciliation efforts in Burma.⁶³ "Different criminal groups are taking advantage of the fragile security situation in the border areas," says Colonel Hkam Awng. "In the background there are always Chinese businessmen. They are supplying the precursors chemicals and contract the chemists from outside who are Chinese or Taiwanese. They can make a lot of profit, as the production costs are very low; but once you cross the border to Thailand, the price goes up rapidly."

Meth production and trafficking is a highly profitable business a source close to a yaba lab confirmed to TNI researchers in October 2007. Near the Thai border in Burma, an investment of 1.4 million baht (\$40,000 - including the precursors, equipment and the tax of 2 baht/pill to the local militia that controlled the area) was required for 100,000 yaba pills. Selling them would fetch 3.5 million baht, a profit of 2.1 million baht (more than \$60,000) wholesale.⁶⁴ According to one source, there is a minimum order of 50,000 pills. "In Tachilek, you can get 100,000 pills 24 hours after you have deposited the payment in a bank," a source claimed. The more you want, the longer it takes: getting 500,000 pills takes around 5-7 days. Another source said that it was possible to get 5-10 million pills in five days in Panghsang, the Wa capital at the China-Burma border. Smuggling and retail distribution involves many ad-



ditional profit margins for traffickers and dealers further downstream. Heroin and methamphetamine are produced in different laboratories which may be close to each other. They may also move from place to place, but mostly in the same area - in particular when there is a risk of being detected. Heroin operators can become yaba operators and vice versa, or both, like Wei Shueh-kang. "Profit is the arbitrator."⁶⁵

Yama use in Burma

TNI research shows that yama consumption is increasingly popular in Burma. "When taking the pill with water 'you became industrious'. Those who smoke it through a water-pipe become 'light-hearted, talkative and long wide-awake', one source reported. "It is only when you start smoking you risk being arrested and becoming addicted." Nevertheless, many people choose to smoke yama rather than swallow it. "You want to get a 'hit' when you take it," one explained. The pill is crushed and either smoked by itself or mixed with a little opium before smoking it. Users include women and girls. "One pill costs 2,500 kyat (\$2)," explained one woman from Laikha in southern Shan State. "We cut it into four parts, taking one part each day we are required to work in the fields or each night when we need to peel groundnuts. Otherwise we don't use it. None of us is addicted."⁶⁶ In Panglong in southern Shan State, it is not unusual to find farmers using pills so they can work longer and harder in the fields. "Most betel-nut shops sell yaba as well," said a source.

"I asked why people use yama," one researcher said. "They answered that it depends on their feeling; some people only like heroin, others yama. It also depends on their work. If people need to work all night, or do heavy work, they would use yama." Yama is also widespread at the China-Burma border, particularly on the Chinese side. "You almost never see a migrant worker who doesn't use it," said a trader. The

result is an increase in use among young people, miners and commercial sex workers at the many jade and gold mines, as well as among workers in the illegal logging industry. "There are no less than 1,500 mining companies in Burma," a Shan businessman explained. "Each of them employs at least 100 workers. You can bet that 90-95% of them use yaba. You don't like it much but at the same time you want to make your money. So you learn to live with it." Chinese drivers in logging areas at the border use yama to stay awake because the trucks mostly move around at night, according to another source.

"When people have too much yama they go crazy," a public health official in the Wa area said. "They use it with a water bottle as a water pipe. Some people put it on silver paper and light a fire underneath it." Some opium and heroin users also use yama. Opium or heroin are added or mixed with pills when using, according to several sources. The quality, colours and logos of yama vary, TNI researchers found in interviews in 2007 and 2008. "There are seven different colours for yama," said one researcher. "Black is cheap, about 1,000 kyat for one pill. But people say if they use this one they get a headache, it is not good quality." A tablet of yama cost between 1,500 and 3,000 kyat near the Chinese border in 2007. Prices in Kachin State are higher and varied between 8,000 kyat (\$6.50) in Myitkyina and 7,000-10,000 kyat in jade and gold mine areas in 2008. The same researchers reported in 2007 that the best quality was 8,000 kyat and second quality 6,000 kyat.

At the Thai-Burmese border, more and more people use ice, either by smoking or injecting it. One user said "there is a coolness in your tummy and you feel good". The good feeling lasts as long as 24 hours, especially after injecting it. Ice is known as 'bingdu' or 'ping-koi' in Chinese and there are three types: small grains not unlike ajinomoto (monosodium glutamate), bigger ones like small hailstones or mothballs and solid ones. "Nothing is as hot as ice right now," according to a Tachilek businessman.

The spread of methamphetamine in Southeast Asia

In the 1990s, several things encouraged regional trade and resulted in new drug markets and trading routes that linked regions with opium, heroin and methamphetamine production. These were the ongoing economic reform towards a more open market economy, the opening of country borders and improved transport systems throughout Southeast Asia. They also contributed to higher numbers of IDU and higher levels of HIV prevalence. Drug-using peers from these regions have the potential to rapidly introduce new methods of drug use, and contribute to the spread of HIV. The proposed Mekong Highway System will exacerbate this.⁶⁷

Thailand's 'war on drugs' led to increased border surveillance and a move of direct trafficking routes from Burma to Thailand to more indirect routes via Laos and Cambodia. The so-called 'balloon effect' often mentioned in the case of displacement of opium cultivation, also seems to apply to ATS production and trafficking routes: when controls increase, laboratories are simply moved to unaffected areas. Interdiction efforts have led to a displacement of trafficking routes to less-controlled areas, like rivers seeking the best watercourse and circumventing every possible obstacle. Some heroin and meth laboratories in Shan State reportedly moved to the Lao-Burma border and across the border into Laos.⁶⁸

In Laos, the emergence of methamphetamine, or yama, began in the late 1990s. Initially, Laos was a transit country for yama as it was close to the emerging methamphetamine production in northern Shan State. There was some spillover from the shipments which was followed by the country itself becoming a market.⁶⁹ In 2005, methamphetamine was identified as the country's most used drug according to treatment, arrest, and seizure data.⁷⁰ According to the government, there are 30,000 methamphetamine addicts in Laos, most of them in cities. "But the problem is spreading to the remote areas because farmers do not know about this kind of drug. They think it is like a vitamin."⁷¹

Given the recent arrival of yama in urban centres, prevalence rates are remarkably elevated, even for high-risk groups. In the capital Vientiane, prevalence rates are rising. The combination of yaba using/dealing street kids, heroin-injecting Vietnamese youth and sex workers using meth is likely to lead to a rapid increase in injecting in the near future, which may lead to overlapping HIV epidemics among drug users and sex workers.⁷² Methamphetamine is primarily smoked, but there are reports that the rate of injection is increasing.

Reports from rural areas suggested that yama users outnumber or at least match opium users. The combination of opium eradication and the resettlement of villages by the Lao government provide an entry point into alternative forms of drug use. Methamphetamines help people deal with the pressures of changing work environments and greater engagement with the market economy.⁷³ Yama provides the sort of bodily energy and 'normality' that contrasts with the social blame directed at opium addiction, at least in the short term.

Some opium addicts smoke methamphetamines either with or after opium for energy to work in fields or forests. Others use it to wean themselves from habitual opium use. However, the appeal of methamphetamine is not limited to traditional marginalised opium addicts. Rather, a significant number of opium smokers and non-smokers try it for reasons that are anchored in new social relations and productive abilities expected of them as they relocate to the lowlands.⁷⁴ The first seizure of crystal meth was reported in 2005, indicating that the supply of methamphetamine entering Laos is diversifying.⁷⁵

Laos is also a transit country for emerging meth markets such as Cambodia and Vietnam. According to the UNODC, methamphetamine trafficking into Cambodia in 2004 increased 10 times compared to 2003. Methamphetamine in both tablet and crystalline forms enters Cambodia via its northern border with Laos. Recent developments seem to have led to fewer heroin and methamphetamine laboratories in Shan State. Only 37 refineries (13 heroin and 24 meth), 11 of which are located on the Thai-Burma border (6 heroin and 5 meth), are now confirmed by the SHAN news group - a significant reduction since 2003. One of the reasons for the reduction appears to be an attempt by the Wa leadership to regain some control over production facilities and freelancers within the organisation. Nevertheless, the quality is still guaranteed and the quantity "is up to what the order is", according to SHAN sources.⁷⁶ From there it is trafficked via the Mekong River to Phnom Penh for domestic consumption, and onward for shipment to Thailand and Vietnam.⁷⁷ Methamphetamine imported into Vietnam is believed to originate primarily from Burma, and is trafficked through Laos and Cambodia to the urban centre of Ho Chi Minh in the south or through Laos to Hanoi in the north.⁷⁸

Most assessments undertaken in Cambodia in the past few years, and an analysis by the National Authority for Combating Drugs (NACD) in 2005, indicate that yama is the most frequently used drug. Most people smoke crushed pills but there is some snorting and injecting of it as well. Similar to other countries in the Greater Mekong subregion, crystal meth is also appearing in Cambodia.⁷⁹ In Vietnam, heroin remains the drug of choice but methamphetamine use is increasing. Both countries are not major producers,

although seven methamphetamine tablet making operations that used meth powder imported from neighbouring countries were dismantled in Cambodia between 2001 and 2006. In Vietnam, one factory producing hundreds of kilograms of methamphetamine was found in 2003 in Ho Chi Minh City.⁸⁰

A pattern is emerging in which the prohibition of drugs and increased control of them changes the way drugs are used and leads to an increased use of stronger and more harmful drugs. Users shift from opium smoking to heroin injecting and from orally ingesting methamphetamine pills to smoking and injecting dissolved yaba/yama pills. There are also strong indications that smoking and injecting the even more addictive crystal meth/ice is gaining ground in the Greater Mekong subregion, following patterns already established in East Asia and eastern China.

Yunnan: the emerging market

Due to its size, China has one of the world's largest methamphetamine markets in terms of volume. It is experiencing the same rapid economic expansion and increased ATS use that affected Japan in the 1950s, Taiwan in the 1970s, and Thailand in the early 1990s. While heroin is still the drug of choice among the 1.1 million registered drug users in China (in 2005), the number of heroin users is declining steadily, while the use of so-called 'new drugs' (methamphetamine, ecstasy, and ketamine) has increased by about two percent of registered users each year.⁸¹

Geographically, China bridges East Asia and the Greater Mekong Subregion and, together with India, is one of the main sources for the precursors chemicals needed to produce meth worldwide. In recent years it has become a major source of methamphetamine for its domestic market and many East Asian and Pacific Rim nations. Laboratories producing crystal meth are located in various provinces along the eastern and south-eastern coastal areas. Most trafficking groups are involved with crime groups in Hong Kong, Taiwan and Japan. In Yunnan, however, meth tablets smuggled from Burma seem to be more popular.

Methamphetamine prevalence rates are probably still lower than in other Southeast Asian countries, although no national household survey has ever been done in China. Reports in 2006 identified large increases in the use of methamphetamine pills and crystalline methamphetamine. Of the registered drug users in 2004, 1.7% used ATS, while that number grew to 11.1% in 2007. In recent years, there has been an increase in dismantling of methamphetamine laboratories and a rise in seizures.⁸²

Yet, these figures might hide the reality. Registration of heroin users is a bit -more reliable because of community-

based police work and because it is more difficult to hide from the police because their addiction is more visible. This is not the case with ATS. ATS are becoming popular among urban youth and are mostly consumed in entertainment facilities, such as bars, karaoke clubs, and nightclubs. They are considered to be non-habit forming and more "fun" to use, while heroin is considered a thing of the past that is used only by burned-out junkies and losers.⁸³

Heroin's legal situation is more established, according to drug user and treatment organisations in Kunming (Yunnan province). "Heroin users are put in prison or compulsory detoxification. That is not the case with the new type of drugs. Instead of detoxification, ATS users pay the fine and there is no other punishment. You have to be addicted to get a punishment. With the new drugs there is no addiction in the legal sense, so you only have to pay the fine." The police say they have difficulties detecting the new type of drugs.⁸⁴

Meth tablets or 'ma-huang-su' (ephedra pills) are the ATS of choice in Yunnan province in the southwest, while in the northeast and southeast the crystal form ('bingdu') is more popular, as are other ATS like 'yao-tou-wan' (head shaking pills or ecstasy) and 'k-feng' (k-powder, the k stands for ketamine), according to our sources. Pills referred to and sold on the street as ecstasy have a high probability of being methamphetamine and have little, if any, MDMA in their composition based on forensic analysis.⁸⁵ Ecstasy may relate to ecstasy-type drugs, but they may (more likely) relate to drugs that in some way lead to a state of "ecstasy".

Methamphetamine is more prevalent nowadays in Kunming, the capital of Yunnan, "because of the low cost, the great effect - in the beginning at least - and the image of being a successful person".⁸⁶ It was initially in areas bordering Burma, to increase energy - 'to feed the horse', to keep working. "Pills can be found everywhere and at any time now," according to interviewees. "The average use is 10/20 pills per day; some use 40/50 pills per day, but that is an exception. People use them for several days in a row sometimes." China is a more attractive market for the heroin and methamphetamine business than Thailand, say sources in Burma. "They pay more."⁸⁷ Since 2002, the quantity of methamphetamine trafficked from Burma through Yunnan province (a transit point to the rest of the country and abroad) increased at a rapid rate. The share of methamphetamine seizures in Yunnan (as part of the Chinese total) increased from 18% in 2002 to 56% in 2006. The increase in seizures was due in part to increased law enforcement and improved inter-diction efforts to stop it getting through the border areas of Yunnan Province, beginning in 2005.⁸⁸ In the drug trafficking business two divergent markets have emerged in China; one is with older traffickers primarily concentrating on the heroin trade, and the other is with younger traffickers specialising in ATS.⁸⁹

Meth pills and powders are sold by a new type of dealer, according to sources in Kunming, the capital of Yunnan. They are better educated and offer a wide choice with different prices depending on the quality. One pill is 40-50 yuan (\$6-7). In Lincang prefecture at the border they cost 2/3 yuan (\$0.30-45) per pill. There are many pills, too many to distinguish, and there is a big difference in price. It is mainly smoked using the 'water bottle pipe'. There are different smoking pipes. According to one source, somebody once paid 4000 or 5000 yuan for one that was made by an artist from Europe. Others cost 10 yuan. Some users start to make equipment, which they sell to finance their habit. "For some, everything - pills and instruments - have to be the best," our sources told us. "It increases their social status. For some drug users it is part of their daily life - to be different from others."

Leaves of saffrole rich oil tree of the Cinnamomum species



Yaba trafficking in Ruili

Yaba pills and heroin manufactured in northern Shan State in Burma are smuggled to China in large shipments and by smaller, independent traffickers. The border crossing between Muse and Ruili in Yunnan Province is easy to cross. Ruili is known as Yunnan's 'Sin City' and is a hotspot for contraband trading with Burma - including women for commercial sex work. Many Burmese and Chinese women are employed in the sex industry and use heroin and yama to ease the pain and degradation. Some are involved in smuggling and dealing heroin and yama.⁹⁰ In the Chinese trade zone at the border, an open fence separating the towns is no obstacle for passing on illicit drugs and for illegal immigration, as TNI observed while visiting the area. Beside the official border-crossing posts there many 'informal' gates in the border fence as well.⁹¹

TNI interviewed several Burmese commercial sex workers in October 2007 and August 2008 who were involved in the cross-border trade in yama and heroin, and street dealing on the Chinese side of the border. "I buy the yama pills in a Shan village close to the border," one said in August 2008. "One tablet costs me 6.5 yuan (95 cents) and I sell it for 10 yuan (\$1.45)."⁹² One pack of 200 pills of yama you can buy for 900 yuan (\$130 or 65 cents/pill) at the border. In Ruili you sell one pack for 1200 yuan (\$175 or 88 cents/pill). I make packs of 50 pills, and sell these for 325 yuan in Ruili (1300 yuan per 200 pills). A Chinese broker comes here once or twice a month. My sister sells him 20 packs of 200 pills for 1600 yuan per pack. The price in Burma, in Namhkam, is 600/700 yuan; at the border it is 900 yuan." Larger amounts of pills are smuggled through the custom ports. "Amounts of 10,000 pills are trafficked in bags of potatoes," according to one source.

The prices seem to be the same or lower than in October 2007. At the time a batch of 200 bad quality tablets made 1,300 yuan, good quality at least 1,600 yuan, at most 1,800 yuan. Another source said a package of 200 pills could be bought for 1,100-1,200 yuan in Muse. In Muse one tablet was 6 yuan. Sources in Burma confirm the trading amounts and prices, which tend to vary depending on the relation with the wholesaler. In Burma one can buy a package of 200 pills for 500-1,000 kyat (40-80 cents) per pill (\$80-160 for 200 pills) if one buys in bigger quantities. Big packs contain 10 packages of 200 pills (2,000 pills) and a bundle is three packs of 2,000 pills (6,000 pills) and some extra. A big pack of 2,000 pills can be bought for 300.000 kyat (\$240 or 12 cents/pill). Near the border a single yama pill costs cost between 1,500 and 3,000 kyat (\$1.20-2.40) in Burma. In Ruili the price is between 10-20 Yuan (\$1.45-2.90).

"There are two kinds of pills," according to a Burmese dealer in Ruili "Both have the WY symbol but are a different shape. One has a round W like a Burmese letter, and cost 10 yuan per pill. It has a bright pink colour. The other one has a clear W and costs 12 yuan per pill. It has a faded pink colour. Before there was an even better one, with a small WY that cost 15 yuan." Another sex worker in Ruili said she took five tablets per session and sometimes had three or four sessions per day, depending on the available money - 20 pills amount to 200 yuan per day. She also described pills with a WY logo in different types as the most popular brand - but there are other logos and colours as well. A source in Ruili confirmed the increase in yama users: "There is more money than in the past. Now there are many nightclubs and dances. People use it for fun, leisure. There are also many civil servants that use it, including policemen. They buy it when they go home, after work."

Plant precursors for ATS

ATS are considered chemically-synthesised drugs without plant-based raw material such as coca for cocaine or opium poppy for heroin. Precursor chemicals are essential ingredients for the manufacture of ATS. However, several precursors are plant based. The Ephedra plant, indigenous to northwestern India, Pakistan and China, is the precursor for ephedrine and pseudoephedrine, the essential precursors to methamphetamine. Safrole or safrole-rich oils (or sassafras oil), extracted from various plants and trees, are the main pre-precursors for ecstasy. Southeast Asian countries, China in particular, are significant producers of plant-based pre-precursors and the chemical precursor. Clandestine ATS laboratories use these chemicals and not the raw plant material, although safrole has been found in ecstasy laboratories.

The prevention of diversion of precursor chemicals from licit channels to illicit drug manufacture, became part of the drug control agenda in 1988 with the adoption of the Convention against the Illicit Traffic in Narcotic Drugs and Psychotropic Substances. The International Narcotics Control Board (INCB) developed guidelines to prevent the diversion of precursors and essential chemicals listed in Tables I and II of the 1988 Convention through an import-export pre-notification system. Precursor control is the "second front" of international drug control. As the demand and supply of drugs could not be controlled, preventing the diversion of precursors became a measure to tackle supply, ATS in particular. However, precursor control suffers from the same setbacks as drug control in general: despite increasing control mechanisms, the market is not really affected.

Ephedra

The dried stems of the Ephedra plant, known in China as ma huang, have been used in traditional Chinese medicine for 5,000 years to treat common colds, asthma and hay fever. Its alkaloids, ephedrine and pseudoephedrine, are still used in over-the-counter decongestants. China produces about 400 tons of (pseudo)ephedrine annually. This is made from more than 100,000 tons of ephedra for which about 140,000 hectares of grassland have to be destroyed. Most of the extraction factories are in Inner Mongolia and Xinjiang Uygur, and Gansu and Shanxi provinces.⁹³ The government owns and operates ephedra farms, where it is cultivated under strict control.⁹⁴

An alternative bio-chemical process to produce (pseudo)ephedrine is through yeast fermentation of dextrose (sugar) with benzaldehyde. Fermenting the molasses is a complex process. Indian scientists developed the right yeast strain from a rotting apricot 30 years ago. Every factory keeps some of the original sample alive in a refrigerator.⁹⁵ India is the main producer through the chemo-synthetic process, with five factories. Chinese scientists invented a chemo-synthesis method in 1999 and one factory is now operating. To prevent further desertification of the grasslands and stop the destructive

collection of ephedra, further development of the chemo-synthetic process is expected. China and India are the main producers of licit ephedrine and pseudoephedrine worldwide.

The WHO has expressed concern about overly strict controls on ephedrine. It is included on the WHO list as an essential medicine used during delivery. Any tightening of controls to prevent diversion as a precursor should be weighed carefully against the need to guarantee access for its medicinal use.⁹⁶

Safrole

Safrole is the key material of three other principal precursors for MDMA: isosafrole, piperonal and 3,4-methylenedioxyphenyl-2-propanone (PMK, MDP2P also known as piperonyl acetone). Its main legal use is for the conversion into two important derivatives: (1) heliotropin, used as a fragrance in waxes, soaps, detergents and cleaning agents, and as a flavouring agent; and (2) the insecticide synergist piperonal butoxide (PBO), a vital ingredient of pyrethroid insecticides. Safrole-rich oils are the main raw materials for safrole; the essential oils contain safrole levels of more than 90% and have the same control schedule as safrole itself.

To produce the oil, wild forest trees are felled and the oil is steam-distilled from the timber, the root and stump. A 2006 UNODC-survey in East and Southeast Asia found 361 plants that are rich in safrole, mostly of the *Cinnamomum* tree species.⁹⁷ *Cinnamomum camphora* - a large evergreen tree up to 20-30 metres tall known as the camphor tree - common in Southeast Asia. Brown camphor oil (or 'Chinese sassafras oil') contains 80% safrole. Oil yields from the distillation process range between 1% and 3.5% from the total raw material input. The collection of the oils is unregulated and there are concerns not only diversion into illicit drug manufacture, but also about environmental sustainability and the long-term availability of safrole-rich oil.⁹⁸

Until World War II, Japan dominated the market. The industry was based on the *C. camphora* in Formosa (Taiwan), at the time occupied by Japan. Large areas of wild trees once grew in Japan and Taiwan, but these disappeared through over-exploitation.⁹⁹ The war disrupted trade and a new industry based on wild *Ocotea pretiosa* emerged in Brazil.¹⁰⁰ Brazilian sassafras oil production declined with the depletion of the natural resource and restrictions on the felling of the trees in 1991. In the 1970s, China took the lead and around 1990 Vietnam entered the market as well.¹⁰¹ In both countries, the industry was again based on the destructive harvesting of wild forest trees. In China, commercial plantations were also developed, mainly in Yunnan, Sichuan and Guizhou provinces. *C. petrophilum* became the preferred species for commercial cultivation as its leaves and branches can be harvested to extract the oils in a sustainable manner.

Diversion

When ecstasy became popular in the 1990s, concern about the control of its precursors increased. In 2002, the INCB launched Project Prism, an international project against the diversion of precursors. Governments were requested to provide information on the production, legal uses and trade in safrole-rich oils. The same year, China, Laos, Burma and Thailand adopted a joint action plan for 'high risk areas' - near heroin and methamphetamine labs along common borders - to prevent diversion of key precursors, materials and equipment. In 2003, it was decided each country should identify *Cinnamomum* species in their country and if they were harvested for safrole-rich oils.¹⁰²

All countries in the region have regulations to control the harvesting and production of safrole-rich oils, including export and import. In Cambodia, Laos and Burma, these measures applied to all non-timber forest products; only China and Vietnam have specific legislation. Vietnam was a major producer of safrole rich oil until 1999, when it was prohibited because of damage to the environment.¹⁰³ It continues to be imported into Vietnam for re-export to third countries.¹⁰⁴ Producers, traders and forestry agencies have little awareness of the potential abuse of the oils, which are first converted into chemical precursors in China before being diverted from the legal trade to clandestine labs. The UNODC survey found no indications that safrole-rich oils were being diverted from production and inter-regional trade for the illicit ecstasy market.

China is the major end user of safrole-rich oils. The aggregate annual production of safrole-rich oil in the region is estimated at 1,500 tons. China produces about 800 tons, Burma 230-490 tons, Cambodia 250 tons, Laos 45 tons and Indonesia 35 tons. Production in China has declined over the years. In China there were eight, mostly small-scale distilleries in Chongqing, Sichuan and Yunnan provinces in 2005. Although controls in China increased in 2005, there were at least five illegal distilleries in Yunnan.¹⁰⁵

Safrole-rich oil in Burma

The National Narcotics Control Commission (NNCC) of China reported the import of large quantities of safrole-rich oil, locally known as thitkado, from Burma in 2004-2006. Permits were issued to companies to harvest wood for oil production at the Tamanthi Hydropower Project in the Chindwin River in Sagaing Division near the border with India, where a dam would eventually cause submergion of the area. Five companies were licensed and each operated about 50 small stills to produce 340 tonnes of thitkado oil for export to China.¹⁰⁶ Illegal production of the oils and export to China also occurred; 115 tons were seized during 2002-2005 along smuggling routes from Sagaing Division to Yunnan.

TNI research in 2008 found that thitkado oil is produced and traded in Kachin State. Thitkado was also used as a traditional medicine - applied externally against skin diseases and rashes, and for inhaling. Since 1998, the main production area was the Nhkai Bum Mountains, but this

area is nearly completely deforested. The main production areas now are Danai, Hpakant and Inndawgyi regions in Kachin State, and the Hkam Ti region in Sagaing Division. The oil is bought by Chinese traders in the region.

According to a Kachin businessman, the Chinese market for thitkado oil is in Mangshi and Zhangkhong, a small border town north of Ruili and opposite of Mai Ja Yang. Most oil comes through Laiza, a border town controlled by the KIO, and some comes from Nawng Tau, a border town near Ruili where many illegal logs also pass through. Prices are increasing, say several sources. Although some people suspect the oil is used for yama, most are unaware of its commercial use.

The unsustainable felling of safrole-rich trees is not the only problem; the firewood needed to steam-distill the oil is exacerbating the harm. For every safrole-rich tree, ten other trees are needed to distil the oil. The KIO prohibited thitkado production in the areas under their control in 2006. The wood had become scarce and producers had to go deep into the forest to find the remaining trees, but the KIO still gave permission occasionally.

Environmental damage

Safrole-rich oils are also produced in Cambodia and Laos. In Cambodia, production is illegal and extraction and trade has gone underground. In 2006, there were an estimated 13 production stills, although the government has destroyed about 80 of them since 2002. According to David Bradfield of the Wildlife Sanctuaries Project of Fauna and Flora International (FFI), production in the Cardamom Mountains is wreaking ecological damage. "The production of sassafras oil over the last 10 years has severely depleted the trees and if the illicit production isn't stamped out soon, they could become extinct in the near future," Bradfield warned. The livelihoods of 12,000-15,000 people in the wildlife sanctuary are at risk.¹⁰⁷

Some 50 rangers from the Ministry of Environment and Forestry are policing the area with support of independent conservation organisations and the UN Development Programme (UNDP). In June 2008, 1,278 drums of safrole-rich oil were burned with the help of the Australian Federal Police¹⁰⁸ and the destruction was reported widely in the media. That amount of oil could have been used to make 245 million ecstasy tablets, police claimed.

Although the worry about the ecological damage is justifiable, questions remain about the effectiveness such public burnings. The approach might backfire by driving up the price and attracting more illegal business. It is also questionable whether all the oil was destined for ecstasy laboratories since the bulk of the oil is still used for legal purposes.¹⁰⁹ A wiser approach might be to sell the oil to the chemical industry and use the proceeds to set up sustainable production providing livelihoods for the people involved. In China and Brazil, experiments with new, sustainable plants are well advanced - in particular some *Cinnamomum* species and the *Piper hispidinervium*¹¹⁰, which has been introduced to Yunnan from Brazil.

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- 28 Ibid. Phenylpropanolamine can be chemically reduced into amphetamine, just as ephedrine is chemically reduced into methamphetamine.
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- 31 UNODC (2008), Global ATS assessment 2008, p. 31
- 32 Chouvy & Meissonnier (2004), pp. 70-71
- 33 UNDCP (1996), p. 116
- 34 Devaney, Reid & Baldwin (2006), p. 254
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- 36 Bezziccheri (2003)
- 37 Phongpaichit (2003)
- 38 A similar pattern – rising prices and adulterated heroin leading to increased amphetamine use – had been observed in 1980 and 1981 after a few years of drought in Burma, the Laos and Thailand and a reduction in heroin output. The trend reversed in 1982 when the price of heroin fell again. Suwanwela & Poshyachinda (1986).
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- 40 Phongpaichit (2003); Roberts, Trace and Klein (2004)
- 41 Phongpaichit (2003)
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