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# Jamaica: Progress in Marijuana Control



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An Intelligence Assessment

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July 1986

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# Jamaica: Progress in Marijuana Control



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**An Intelligence Assessment**

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This paper was prepared by [redacted]  
[redacted] the Strategic Narcotics Division,  
Office of Global Issues, with a contribution by [redacted]  
[redacted] Narcotics Analysis Branch, Office of  
Imagery Analysis. Assistance was provided by  
[redacted] Analytic Support Group. [redacted]

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Comments and queries are welcome and may be  
addressed to the Chief, Western Hemisphere Branch,  
Strategic Narcotics Division, [redacted]

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**Jamaica: Progress in Marijuana Control**



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**Key Judgments**

*Information available as of 30 April 1986 was use in this report*

Despite a generally poor early prognosis for success, the Jamaican Government has thus far made substantial gains in its recent heightened effort to disrupt illicit production and smuggling of marijuana. Most notably, analysis of data from combined Jamaican and US aerial surveys conducted in the spring and fall of 1985 indicates that intensified Jamaican manual eradication operations in the country's major cannabis-producing areas destroyed substantial portions of the crop planted last year. We calculate that growers harvested about 900 metric tons of marijuana, or roughly half the amount that we estimated—on the basis of less extensive photographic coverage—they harvested in 1984. Consequently, although the island currently remains an important supplier of the drug to the United States, prospects look increasingly good for large, sustained cuts in the level of production and, hence, shipments.



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In 1985 the government also successfully intensified efforts to interdict shipments of harvested and processed marijuana entering the air and sea smuggling chain. Military authorities tightened security at Jamaica's four major domestic airfields and two international airports, and began a methodical campaign to destroy the numerous makeshift airstrips in the countryside. Kingston also increased naval patrols in coastal waters. These measures caused at least temporary disruptions in some smuggling operations and forced many traffickers to change their methods. We estimate that, by the end of 1985, two-thirds or more of the island's marijuana shipments were leaving by sea routes—a major shift from the traffickers' previous preference for air routes.



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Kingston had less success last year in cracking down on drug-related corruption. Major traffickers generally were able to counter arrests and dismissals of collaborators by quickly recruiting new ones. In our judgment, the ease with which Jamaica's marijuana trade is able to use its enormous earnings to corrupt some antidrug officials—particularly at lower levels—will be hard to combat and is likely to remain a serious problem for the drug control program. Honest members of the police and the Army have tried to tighten the antidrug program's internal security, but Kingston needs to substantially improve its ability to detect and punish collaboration.




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Another problem facing Jamaican authorities is how to cope with the island's major trafficking syndicates. To date, the government's marijuana eradication and interdiction gains have come almost entirely at the expense of moderate and small-scale growers and traffickers. The crackdown still has had no appreciable effect on the larger and more efficient operators who in recent years have accounted for a substantial portion of total marijuana production and export. This segment of the industry has considerable financial and material resources with which to resist antidrug measures. 

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Despite the obstacles facing Kingston's narcotics enforcement program, we believe the prospects are good for an effective marijuana control campaign over the next year or so. Jamaica's tougher eradication program and the destruction of illegal airfields in 1985 did not lead to the political backlash Prime Minister Seaga predicted in 1984, and he probably is now confident that he can push control more aggressively. As long as Seaga remains in power, the Government of Jamaica at a minimum probably will continue to eradicate marijuana at a rate of about 35 to 40 percent of production. If US narcotics control assistance is increased—as it may be in the form of transport helicopters—we estimate the added mobility would allow eradication teams to cut marijuana production by as much as 60 to 70 percent. This level of reduction would drive many producers out of business and essentially end Jamaica's role as a major exporter of marijuana to the United States. 

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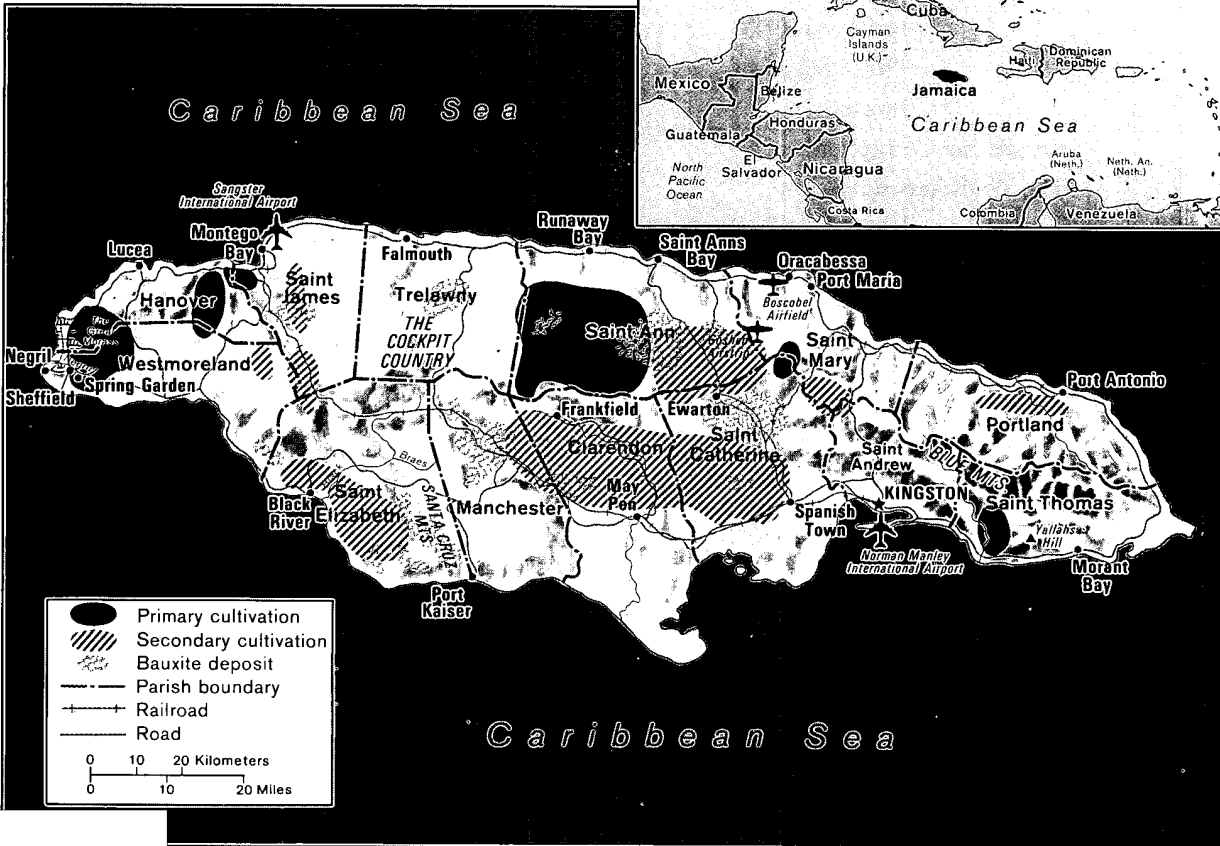
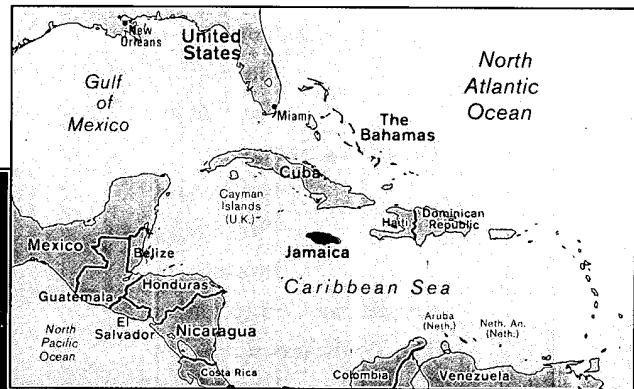
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### Jamaica: Marijuana Cultivation Areas, Fall 1985



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**Jamaica: Progress in Marijuana Control**



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**Cracking Down on Cultivation**

Against most expectations, the Government of Jamaica's marijuana eradication program improved steadily through 1985 and achieved sizable reductions in the quantity of marijuana harvested to supply the US market.<sup>1</sup> We calculate that growers succeeded in harvesting about 900 metric tons of marijuana, or roughly half the amount that we estimated they harvested in 1984. (For a description of the process by which we reached our 1985 crop estimate, see inset.) Our analysis of cultivation and eradication levels indicates that Kingston destroyed about 35 percent of the spring plantings and some 30 percent of the fall plantings, resulting in the elimination of approximately one-third of potential annual production. These gains were achieved after Prime Minister Seaga announced in September 1984 a marked expansion of the government's marijuana control efforts. The most important element of the new counternarcotics program was a commitment to a greatly increased eradication program.

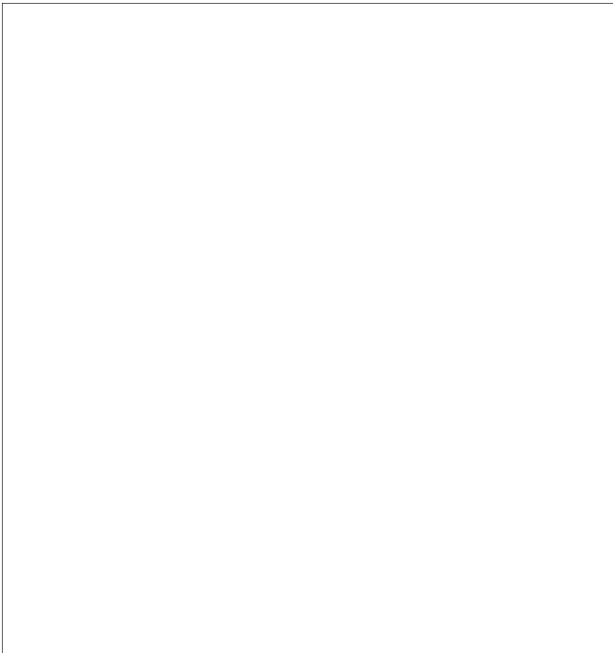
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*Marijuana thrives in Jamaica's mild, sunny climate. Growers can plant at any time of the year, but harvests tend to cluster in the spring and fall, with the fall harvest by far the larger. Aerial surveys have revealed that cultivation occurs in all of Jamaica's 13 parishes.*

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**The 1985 Crop Estimate:  
Getting to the Bottom Line**

Although Jamaica's marijuana farmers can plant their crops throughout the year, harvests tend to cluster around the spring and fall, with the latter harvest substantially larger than the former. The three consecutive aerial surveys of the island yielded our most reliable information about the size of the crop at the time of each survey. [redacted]

The method of obtaining the crop estimate is a statistical analysis of imagery-derived data, based on the assumption that total production of marijuana equals the area under cultivation times the average yield. Multiplying the estimated number of fields by the average field size provides the estimated area under cultivation. Estimates of the average field size and number of fields rely on imagery, while the yield figures come from collateral reporting. [redacted]

We assume that all eradication that occurs before a survey is flown can be disregarded for purposes of crop estimation, because its results are reflected in the survey. We must account, however, for all eradication that occurs after a survey. We also assume, on the basis of our experience with drug crop eradication programs worldwide, that eradication estimates frequently are exaggerated. Inflation in these estimates often occurs because of the extreme difficulty of estimating land area in irregular terrain, where mobility is poor and visibility limited. Further, local security forces often inflate their figures because they want to show success. [redacted]

In the case of Jamaica, we have deflated security force estimates of eradication by one-third, a factor based on our close observation of the island's eradication teams in the field and extensive experience

elsewhere. Further, this deflation factor results in an estimate of crop destruction that is very close to Jamaican security force estimates of the rate at which their eradication teams were progressing through 1985. [redacted]

For the spring crop in 1985, we took the 410 hectares revealed by the aerial survey about 1 May and subtracted from this figure the 209 hectares the JCF claimed its forces eradicated during May and June, but deflated by one-third:

$410 \text{ hectares} - (209 \text{ hectares} \times .67) = 270 \text{ hectares.}$

We estimated the fall 1985 crop at 1,615 hectares on the basis of a survey flown about 1 October. Jamaican security forces claimed that they eradicated 776 hectares between 1 October and the end of the year. Using the same procedure:

$1,615 \text{ hectares} - (776 \text{ hectares} \times .67) = 1,100 \text{ hectares.}$

The total of both harvests, after accounting for postsurvey eradication, thus came to 1,370 hectares. Jamaican [redacted] officers who have studied marijuana cultivation on the island have said that yields range roughly between 540 and 770 kilograms of dried marijuana per hectare, with a midpoint of 655 kilograms per hectare. This estimate of yield times 1,370 hectares results in our figure of about 900 metric tons for the total marijuana harvest in Jamaica in 1985. [redacted]

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*These Jamaican police officers are part of an intensified marijuana eradication program that began in early 1985 and became stronger through the year. Better mobility remains the key to improving the productivity of eradication workers.*



*If drug crops are at or near maturity when they are eradicated, the marijuana must be burned to prevent local farmers from collecting and selling it.*

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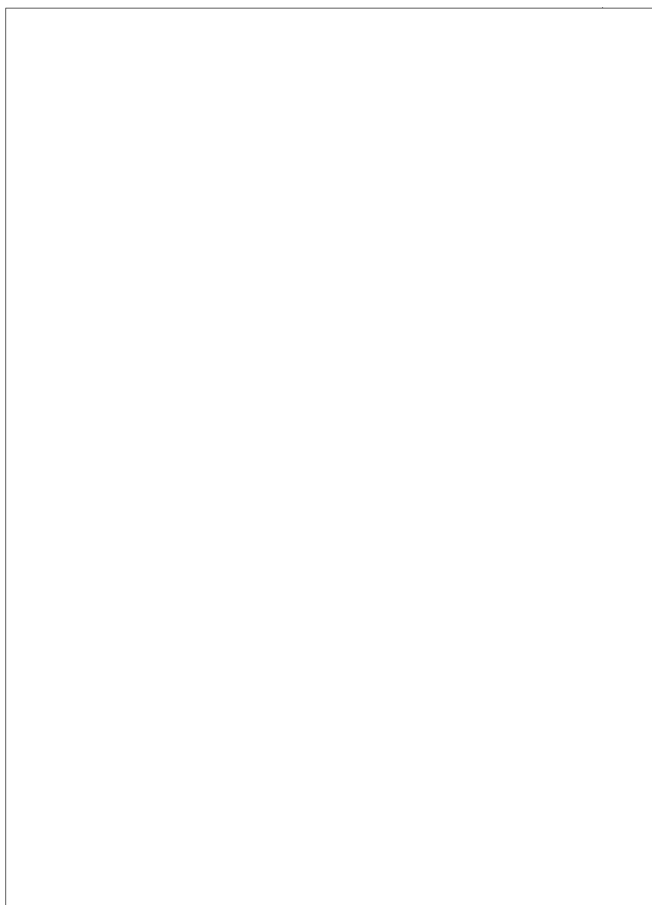
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**The Fall Eradication Campaign.** In our judgment, the most important development affecting the overall success of the crop control effort in 1985 occurred in midsummer. At that time Kingston began to take steps that would culminate in September in the first direct participation of Jamaican military forces in eradication operations. The increased manpower and resources that this move made available gave the government the capability to inflict on the larger fall crop essentially the same proportional losses that it was able to achieve against the smaller spring crop. Without military participation, eradication in the fall almost certainly would have fallen far short of the level that was attained.

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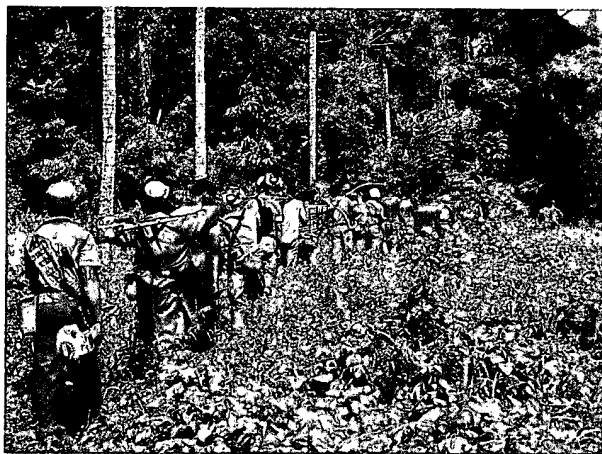


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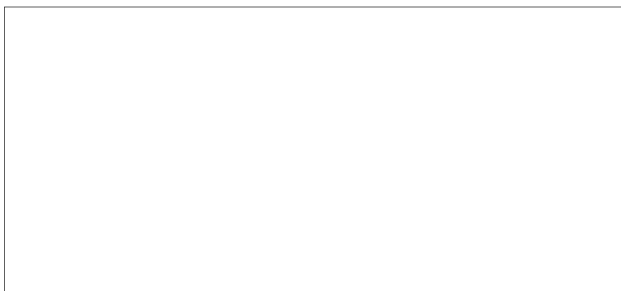


These men are returning to a base camp in western Jamaica after destroying drug crops in the Sheffield area. About half of the JCF's Narcotics Squad is continuously engaged in eradication operations. [redacted]



This JDF soldier is cutting down marijuana in St. Thomas Parish. Direct participation in eradication operations by Jamaica's military forces began in midsummer 1985 and strengthened Kingston's campaign against the island's marijuana industry. [redacted]

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[redacted] increased mobility through expanded use of transport helicopters would aid eradication efforts considerably. [redacted]

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**Disrupting Smuggling**

At the same time that Kingston intensified the eradication campaign, it also stepped up efforts to suppress marijuana smuggling. [redacted] interdiction measures caused at least temporary disruptions in some smuggling operations and forced many traffickers to shift from their previously heavy reliance on air routes to substantially increased use of sea routes.

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Prime Minister Seaga's insistence on manual techniques—he says he fears that chemical eradication might have serious environmental impact and serious political repercussions—makes the eradication program less efficient than it would be if drug crops could be sprayed with herbicides from aircraft. The abundance of low-cost labor in Jamaica, however, allows even this relatively inefficient form of crop destruction to make substantial cuts in production. In late September, for example, an eradication team of 26 men using 15 gasoline-powered brush cutters was able to cut down, collect, and burn about two-thirds of a hectare in 45 minutes. At this rate, a work force of about 125 men devoting only about half its time to eradicating cannabis theoretically could have destroyed the entire potential fall crop of 1,600 hectares in about 100 days, assuming timely deployment. [redacted]

**Background.** The US Drug Enforcement Administration (DEA) in 1981 estimated in its examination of Jamaican marijuana smuggling routes that about 60 percent of the shipments to the US market were coming by air, with most of this portion delivered by general aviation aircraft and the rest transported aboard commercial planes. DEA judged that the remaining 40 percent was being exported by sea, almost exclusively aboard privately owned vessels.

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[redacted] between 1981 and early 1985 smugglers continued for the most part to favor air transport over maritime shipment. [redacted]

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Working out of a base camp near Yallahs Hill in eastern Jamaica, JDF soldiers using US-supplied equipment destroyed about 130 hectares of marijuana in this area in late 1985. A spring 1986 inspection of the region revealed little cultivation.

[Redacted]

This preference was due largely to the speed of air shipment and the traffickers' wide choice of aviation facilities for conducting operations. Jamaica has four major domestic airfields and two international airports, and security prior to 1985 was generally poor. In addition, the island has numerous makeshift airstrips. Overhead photography taken in the early 1980s showed more than 69 such airstrips, of which 65 were in suitable condition for use. More than half of these airstrips were unregistered, and many had been built solely for drug trafficking.

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[Redacted]

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**The Crackdown.** Seaga in 1985 ordered a series of strong measures to improve his government's control over marijuana trafficking. In February the Prime Minister shifted responsibility for security at Jamaica's four major domestic airfields from the Civil Aviation Department to the JDF. The government also began efforts to improve security at Jamaica's two international airports, in Kingston and Montego Bay, and in March requested that Washington send US Customs Service officials to inspect counter-narcotics measures at these airports. Kingston also sought to improve maritime interdiction by stepping



This clandestine airstrip was discovered under construction west of Spanish Town in late September 1985. The JDF identified 40 such strips in April and by June had destroyed 29. Traffickers were able to repair many of the airstrips quickly, but the campaign forced drug smugglers to use maritime routes more heavily. Jamaican authorities have asked for US help to mount a similar interdiction campaign this year.

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up coastal patrols shortly after the start of the fall eradication campaign.

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A team of US Customs security experts examined the airports in June and recommended a number of improvements. The team also instructed several of the Jamaican national airline's supervisory personnel in security management.

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[Redacted] Specific actions included:

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- Dismissal in late August by Jamaica's national airline of some 160 security guards and cargo handlers at Kingston's international airport, according to the US Embassy. Many of these workers were replaced by police and military troops. Airport officials also tightened access to cargo areas.

- Comparable shakeups beginning in November at the Montego Bay international airport.

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[Redacted]

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While Kingston was tightening security at the international airports, the JDF was ordering military engineers to use heavy equipment to destroy makeshift trafficking airstrips. [Redacted]

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[Redacted]

In addition, Kingston sought to improve maritime interdiction. The JDF's small naval component stepped up coastal patrols shortly after the start of the fall eradication campaign. [Redacted]

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**Impact.** [Redacted]

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[Redacted]

[Redacted] On the basis of our analysis of drug seizures, production estimates, and imagery of airfields, we estimate that by the end of 1985 two-thirds or more of the island's marijuana deliveries were traveling by private maritime vessels.

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[Redacted]

[Redacted]

We do not have sufficient information to assess the effectiveness of Kingston's increased naval patrols in dealing with the expansion of maritime marijuana smuggling. In our judgment, however, the government does not have sufficient ships and funds to undertake and sustain the high level of naval operations that would be required to keep close watch on Jamaica's 1,000-kilometer coastline and seize substantial portions of maritime shipments. We expect that the Jamaicans will soon look to Washington for direct assistance in tightening coastal interdiction. [Redacted]

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**Combating Corruption**

Jamaican authorities have also attempted to counter the drug traders' power to corrupt security officers but are facing an uphill struggle. In our view, the Jamaican drug industry's ability to use its enormous earnings to gain the cooperation of some antidrug officials who participate directly in the trade is a particular problem. [redacted]

[redacted]

[redacted] Kingston's success or failure in devising more effective strategies to address problems like these will have an important impact on the antidrug program's long-term prospects. [redacted]

One way the government might be able to take more forceful action would be to create a high-level watchdog organization empowered to investigate promptly all reports of drug-related malfeasance and to dismiss any official determined to be—or strongly suspected of—aiding or engaging in drug activities. The anti-corruption unit formed by JDF Deputy Commissioner Sam McKay in July 1985 is a step in this direction.

[redacted]

[redacted]

**Maneuvering Against Interdiction.** [redacted]

[redacted] beginning in mid-1985, smugglers started taking steps to protect their activities from the heightened interdiction efforts. Many began to demonstrate greater caution and diversity in their smuggling procedures. [redacted]

[redacted]

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[Redacted]

have to come to terms with the fact that its efforts in 1985 chiefly affected only the smaller producers and traffickers and had little impact on the bigger organizations that account for a substantial portion of total activity. [Redacted]

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Other traffickers started setting up ostensibly legitimate business operations to serve as cover for their smuggling activities. [Redacted]

this segment of the industry has considerable resources and connections to government collaborators by which to resist anti-drug measures:

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[Redacted]

[Redacted]

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Traffickers throughout 1985 also moved in increasing numbers to diversify operations to include handling of other drugs, thereby hedging their bets at a time when they correctly judged the government's intensified interdiction campaign to be focusing chiefly on marijuana. According to the DEA, during the first half of the year some expanded their smuggling of hash oil, a potent liquid cannabis derivative that is easier to conceal than marijuana because of its much smaller volume. In August the US Embassy reported that Jamaican traffickers were continuing to expand their involvement in transshipping South American-produced cocaine, at least partly in a strategy to compensate for the heightened risks of smuggling marijuana. The seizure by Jamaican police in February 1986 of a single cocaine shipment of nearly 600 kilograms has confirmed the island's use as a transshipment point for bulk loads of this drug. [Redacted]

The government also continues to face the problem of trying to identify and weed out officials at all levels who are directly involved in cultivation and trafficking either independently or as members of established narcotics organizations:

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[Redacted]

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**The Challenges Ahead**

The Jamaican Government's overall progress in 1985 against the marijuana trade was impressive, but to achieve continued success it will not be enough simply to sustain existing antidrug strategies. Kingston will

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Even if the Jamaican Government were able to root out drug-related corruption, the island's prolonged economic downturn would strain enforcement resources. US officials in Kingston and US observers who accompanied eradication teams say that by late 1985 the intensity of crop control efforts had reached the limits imposed by logistic constraints. Near the end of the year, Kingston had only one operational transport helicopter, and eradication teams had to spend most of their time reaching growing areas on foot. Mobility thus was greatly hampered both in the flat western marshes and the rugged central and eastern hills. [redacted]

[redacted]

This spring survey is to be followed in fall 1986 by an extensive fixed-wing aerial photographic survey comparable to the one that took place in fall 1985. By the end of 1986 we should be able to determine whether the Jamaican Government is indeed achieving the substantial cuts in marijuana production that it showed the capability to attain last year. [redacted]

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Over the next year or two, prospects are likely to remain good for an effective marijuana control campaign in Jamaica, provided Kingston gets the help it needs to solve its aircraft problems and continues to demonstrate the political resolve it displayed last year. The measures Seaga took in 1985 did not lead to the backlash he predicted in 1984, and this can only increase his confidence. Moreover, we judge that the Prime Minister values US aid and a sympathetic hearing in Washington more than he fears the consequences of a strong counternarcotics program. [redacted]

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**Prospects**

On balance, the outlook is more promising than we thought it would be when the government embarked on the new program one year ago. The US Embassy believes that Jamaica has the capability with existing manpower and resources to destroy up to 40 percent of potential marijuana production this year. If the current limited mobility of eradication personnel were improved through increased use of a few transport helicopters, and if the present seasonal crop control measures were expanded to take place throughout the year, we estimate that cultivation islandwide could be cut by as much as 60 to 70 percent. This level of reduction would essentially end Jamaica's role as a major exporter of marijuana to the United States. Kingston now lacks the aircraft it would need to conduct such operations. [redacted]

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In the meantime, the Seaga regime continues to move ahead despite equipment shortages and lack of a fully reliable enforcement apparatus. In late February 1986 the JDF military intelligence unit surveyed the island's customary growing areas and reported marijuana cultivation below the level of spring 1985. A visual survey by US officials in late May confirmed that the spring 1986 marijuana crop was about the same size—400 hectares—as the spring 1985 crop.

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### Appendix

#### The Aerial Surveys

Three consecutive Jamaican and US aerial surveys, conducted in fall 1984 and then spring and fall 1985, of Jamaica's known and suspected cannabis-producing regions shed considerable light on the extent and location of cultivation and greatly improved our understanding of the comparative amounts grown during the two seasons. Our analysis of the extensive photographic coverage that was acquired, along with other information, indicates that Jamaican marijuana production last year—after accounting for losses to eradication—was about 900 metric tons, with most of the output taking place in the fall. This is a sizable drop from the roughly 2,000 tons that we estimated was harvested in 1984. Our assessment for 1984—although based on the best information available at the time—probably overestimated production, and the difference in output for 1985 compared with 1984 partly represents refinements in the estimative process. Most of the drop in production, however, is due to improved eradication. [redacted]

The surveys showed that cannabis is grown in all 13 of the island's parishes, with considerable activity taking place in the interior highlands and western wetlands that we identified in 1984 as being primary producing areas. We estimate that in 1985 growers planted over 2,000 hectares, resulting in a harvest of some 1,370 hectares after accounting for the estimated loss of more than 600 hectares—or roughly a third of potential output last year—caused by eradication operations. [redacted]

[redacted]

[redacted] The approximately 900 tons that we believe the industry produced last year thus is a midpoint reflecting an estimated production range of between 740 and 1,060 tons. [redacted]

**The Spring 1985 Survey.** Fixed-wing aerial reconnaissance missions were flown in late April and covered about 30 percent of the island west of Kingston. Correct identification and pinpointing of cannabis

fields on the imagery obtained from this survey was assured by extensive followup helicopter missions conducted expressly to acquire on-site "ground truth" confirmation of our findings. The helicopter missions also permitted close examination of cultivation techniques and served as a means of monitoring the progress of eradication operations. [redacted]

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This survey provided the first clear indication that considerably less cultivation takes place in the spring than in the fall. The large fields that were found to be widespread in the Negril and Braes River wetlands in the survey of fall 1984 were absent in spring 1985; numerous furrows that previously were lush with seedlings were overgrown with weeds and foliage. In addition, US officials who participated in the fall 1984 survey noted major reductions in the amount of land in the interior highlands devoted to cannabis cultivation in spring 1985. [redacted]

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Our analysis of the spring imagery indicated that as of 1 May 1985 cannabis growers had a total of 410 hectares under cultivation. [redacted]

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[redacted] We estimated net spring cultivation to have been about 270 hectares. This modest level of cultivation led us to anticipate that the fall would be the more intense period of activity, and suggested that particularly aggressive eradication operations late in the year could have a marked impact on total annual output. [redacted]

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**The Fall 1985 Survey.** More extensive flights took place between 26 September and 2 October, and provided the best imagery we have obtained thus far of Jamaican cannabis cultivation. The survey consisted of 16 north-south and two east-west flightlines that photographed about half of the known cannabis areas. The flightlines also covered a comparable portion of potential growing areas that we defined, on the basis of various reports, as including all land west of

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### Marijuana Cultivation in Jamaica: Fall 1985

Region	Hectares Cultivated
The interior highlands ( <i>St. Ann, Clarendon, St. Catherine, St. Mary, Manchester, and Trelawny Parishes</i> )	800
Western Jamaica ( <i>Westmoreland, Hanover, and St. James Parishes</i> )	510
St. Elizabeth Parish	155
Eastern Jamaica ( <i>Portland and St. Thomas Parishes</i> )	150
Total	1,615
Range at 95 percent confidence interval	± 360
Range of estimate for fall 1986	1,255 to 1,975

Kingston—except the extremely rugged and agriculturally unsuitable central cockpit country—and the lower elevations of Portland and St. Thomas Parishes. As in the spring, our findings were corroborated by extensive helicopter reconnaissance operations. [redacted]

The fall survey enabled us for the first time to base our estimate of annual production on an examination of both seasonal crops. It also provided our first opportunity to make a clear determination of the comparative size of spring and fall production, and to compare cultivation levels at the same point in the growing cycle for two successive years. In addition, we now have sufficient data to rank production levels by region (see table). [redacted]

Our analysis of the fall imagery indicated that extensive cultivation took place in the island's known growing areas and confirmed reports that plantings had spread to new locations. Growers focused their efforts in four general regions, including:

- *The interior highlands.* This traditional growing area accounted for about half the cannabis planted in fall 1985. Most of this cultivation consisted of comparatively large fields concentrated in southern St. Ann Parish. Numerous concentrations of smaller fields also were found, however, in the parishes of

Clarendon, St. Mary, Manchester, Trelawny, and St. Catherine. Moreover, in northern St. Catherine Parish southeast of Guys Hill we discovered more than 100 fields covering a total land area of about 4 or 5 kilometers.

- *Western Jamaica.* Cultivation in the traditional marijuana-producing western parishes of Westmoreland, Hanover, and St. James accounted for about 30 percent of total fall plantings. Of this portion, nearly 40 percent was concentrated in the low-lying Negril wetlands and adjacent hills. Fields were numerous in the Negril Morass, where in April cultivation was observed to be sparse and had largely been destroyed by eradication operations in May. Average field size in the wetlands was smaller than in the interior highlands, and the wetlands' heavy concentration of seedbeds suggests that some farmers may use this area as a "nursery" to grow seedlings for transplanting elsewhere.

- *St. Elizabeth Parish.* Known growing areas in the Black River and Upper Morass and in the Santa Cruz Mountains accounted for about 10 percent of fall cultivation. The crop was concentrated south of the Broad River and in the lower western slopes of the mountains in this region.

- *Eastern Jamaica.* Imagery of this area confirmed reports that plantings had spread to the eastern parishes of Portland and St. Thomas—neither of which had been photographed prior to the fall 1985 survey—and indicated that this region accounted for about 10 percent of fall production. We specifically were able to confirm reported heavy concentrations of fields around Yallahs, where Jamaican military personnel subsequently estimated some 130 hectares to be under cultivation. [redacted]

We determined from the fall survey that as of 1 October 1985 growers had planted a fall crop of about 1,600 hectares. [redacted]

[redacted] We thus calculated net fall plantings to [redacted]

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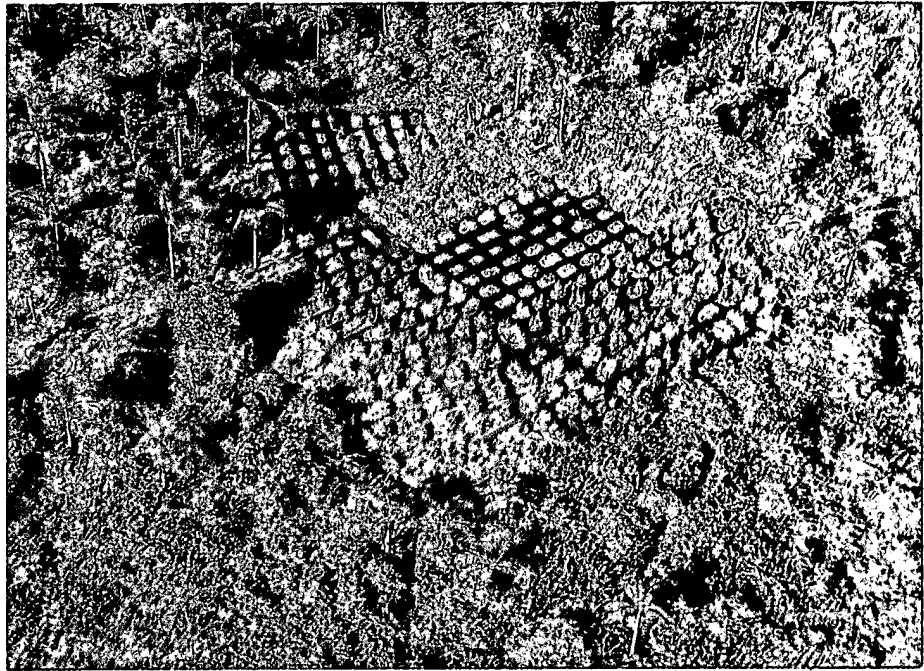
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*Marijuana seedbeds like this one are common in the Negril Morass of western Jamaica. The heavy concentration of seedbeds in these wetlands suggests that farmers may use this area as a "nursery" to grow seedlings before transplanting them elsewhere.*



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have been about 1,100 hectares—representing nearly 80 percent of total net annual cultivation and accounting for about 720 of the estimated 900 tons of processed marijuana produced in 1985.

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