

*122*

23 JAN 1984

MEMORANDUM FOR: (See Addressees List)

FROM:

[Redacted]

Chief, Strategic Resources Division  
Office of Global Issues

25X1

SUBJECT:

Kampuchea's 1983/84 Rice Crop

[Redacted]

25X1

1. The attached memorandum assesses 1983/84 rice production prospects in  
Kampuchea. [Redacted]

25X1

2. This assessment was produced by [Redacted]  
Agricultural Assessments Branch, Strategic Resources Division, Office of  
Global Issues. [Redacted]

25X1

25X1

3. Comments and questions are welcome and may be addressed to the Chief,  
Agricultural Assessments Branch, [Redacted]

25X1

[Redacted]

25X1

Attachment:

Kampuchea: 1983/84 Rice Crop Prospects  
GI M 84-10017, January 1984 [Redacted]

25X1

[Redacted]

25X1

*GI M 84-10017*

[Redacted]

25X1

[Redacted]

25X1

SUBJECT: Kampuchea's 1983/84 Rice Crop

25X1

Addressees List:

Mr. Allen H. Kitchens  
Chief, INR/EAP  
Department of State

Mr. F. Allen Harris  
Director, Office of Crisis and Contingency Management  
Bureau of Refugee Programs  
Department of State

Mr. Terry Breese  
Kampuchea Desk Officer  
Bureau of East Asia Analysis  
Department of State

Mr. Andy Aaronson  
Foreign Agriculture Service  
Department of Agriculture

25X1

SUBJECT: Kampuchea's 1983/84 Rice Crop

25X1

OGI/SRD/AAB/ (23 January 1984)

25X1

Distribution: (Attachment with each copy)

- 1 - Each Addressee
- 1 - DDO/EA/
- 1 - OEA/SE/N
- 1 - C/ITC/CRES
- 3 - CPAS/ILS
- 1 - D/OGI
- 1 - DD/OGI
- 1 - OGI/GD
- 1 - OGI/EXS/RG
- 1 - C/OGI/SRD
- 5 - C/OGI/SRD/AAB
- 8 - OGI/PS

25X1

25X1



Washington, D.C. 20505

DIRECTORATE OF INTELLIGENCE

23 JAN 1984

Kampuchea: 1983/84 Rice Crop Prospects [redacted]

25X1

Summary

*Kampuchea's 1983/84 rice production could reach 1.9 million metric tons. A crop of this size should meet minimum milled rice needs and should not result in a significant change in refugee movements. By late December, rainy season rice harvesting was proceeding several weeks behind schedule, but barring climatic adversity in the coming months, we anticipate few problems gathering in the crop and performing dry season operations.* [redacted]

25X1

*This paper was prepared by [redacted] Agricultural Assessments Branch, Strategic Resources Division, Office of Global Issues (AAB/SRD/OGI). Comments and questions may be addressed to the Chief, AAB/SRD/OGI [redacted]*

25X1

25X1

[redacted]

25X1

25X1

GI M 84-10017

Kampuchea: 1983/84 Rice Crop Prospects 

25X1

Introduction

We estimate that Kampuchea's 1983/84 rice production could reach 1.9 million metric tons, slightly less than the 1982/83 level. The current rainy season rice crop has experienced a number of difficulties, including late monsoon rains resulting in delayed sowing and transplanting and also later flooding, that threaten to hold production close to 1.7 million tons, below last year's announced output. Nevertheless, reports of an impending disastrous rice shortfall seem exaggerated at this time. A rainy season rice crop of 1.7 million tons is still considerably more than the poorer harvests of the 1980/81 and 1981/82 seasons. Based on sowing targets and abundant water supplies, this year's dry season rice crop could range from 216,000 to 246,500 tons, slightly more than last year's reported output of 216,000 tons. This crop is not yet completely planted, however, so actual production may fall outside our estimated range.

25X1

Production of 1.9 million tons alone should not result in a significant change in the movement of refugees to the Thai-Kampuchean border. Assuming a Kampuchean population of 6.37 million,<sup>1</sup> a rice crop of the size estimated should meet minimum milled rice needs, based on the 12 kilogram per month FAO minimum emergency ration.<sup>2</sup>

25X1

Kampuchea grows many rice varieties, which means that sowing and harvesting operations extend through most of the year. Rainy season rice, accounts for about 90 percent of the crop and dry season rice makes up the remainder. About 10 percent of the rainy season crop consists of floating rice which is planted early along river banks and along the shores of the

---

<sup>1</sup> Using a May 1981 census figure of 5,746,141 announced in the press, and assuming a 3.5 percent annual growth rate, we estimate a population of 6.37 million under Phnom Penh's control.

25X1

<sup>2</sup> Agreement is lacking in regard to the amount of milled rice required per person per month. Clearly identifying it as a minimum emergency ration, the FAO uses an individual rice requirement of 12 kilograms per month (about 395 grams per day), as the basis for its estimation of the Kampuchean annual milled rice requirement of 917,280 tons. While such a ration will sustain life, it is not sufficient for persons doing farm labor. An 18 kilogram monthly ration, considered an ideal ration which supplies the caloric content to support physical labor, would require 1,375,920 tons of milled rice. Phnom Penh has stated that its basic ration requirement is 16 kilograms per month, which would call for 1,223,040 tons of milled rice.

25X1

To calculate the amount of milled rice available from total rice production, a 15 percent seed and loss factor is subtracted, and the remainder is multiplied by a .63 milling factor. Using this formula, our estimated rice crop of about 1.9 million tons would result in slightly over one million tons of milled rice.

25X1

25X1

Tonle Sap. This rice depends on seasonal floods from monsoon rainfall for successful yields. The country's rainy season rice yields average 1.0 to 1.2 tons per hectare and dry season rice yields are somewhat higher. [redacted]

25X1

### 1983/84 Crop Season

The 1983/84 crop season began with dry weather last spring that delayed sowing and reduced yields of the early and floating rice crops, according to press and US embassy reports. Although eight provinces reported varying degrees of dryness, the Kampuchean press admitted that only two of these--Kandal and Takev--failed to achieve their rice sowing targets. Border arrivals expressed fears of drought losses, and analysis of weather data confirms that seasonal rainfall did not begin until mid-July, about a month late. Press reports, even though discouraging, held out hope that much of the rice crop could be saved by July rains. [redacted]

25X1

Although the rains began late, the country received average or slightly above average amounts during the monsoon season, and water levels of the Mekong River and the Tonle Sap were restored. The continuation of the rains thru mid-November, longer than usual, probably caused localized flood damage, but, based on imagery evidence, did not result in losses as severe as some reports imply. In December a number of such reports described the situation as serious in some areas. Kampuchean and foreign press accounts portrayed flood damage as a threat to rice production, and the US embassy in Bangkok reported that severe flooding in the western part of the country, including 100,000 hectares of ricefields destroyed by a burst dam in Batdambang Province, would lead to a rice shortfall. Refugees arriving at the Thai border also echoed reports of severe flood damage, and a recent press article stated that 150,000 hectares, or about a tenth of the rainy season rice area, has been destroyed by flooding. [redacted]

25X1

### Sowing Campaign

Analysis of provincial and country-wide sowing progress reports in the press shows that the sown area of rainy season rice compares favorably to that of the last few years. Despite delays in the beginning of the season, farmers gained momentum after the July onset of rains. By the end of November, press reports indicated that about 1,614,400 hectares had been planted, exceeding the plan for rainy season rice. Moreover, a comparison of monthly increments to the sown area reveals that the season's sowing pace was on par with that of last year when the rainy season rice crop covered 1.55 million hectares. Significant failures to plant targeted areas did not occur, even in the provinces which reportedly experienced drought. Only Kandal and Takev achieved less than 95 percent of the sowing plan, a shortfall totalling only about 17,700 hectares. Moreover, almost 4,000 hectares sown above plan in other provinces helped to offset this deficit. Prey Veng did not report a sowing plan, but did state that 20,000 hectares of rice had failed due to drought conditions, against a sown area of 210,200 hectares. [redacted]

25X1

25X1

Imagery Survey

[redacted] most provinces planted over 80 percent of their rice paddies. This situation is in marked contrast to the 1980/81<sup>4</sup> season when ricefields accounted for just 50 percent of the imagery-sampled area, thus showing the country's steady recovery from the disastrously small sown area in 1979/80. [redacted]

25X1

25X1

25X1

In most provinces over half of the ricefields surveyed on imagery were in healthy condition. Of these about 15 percent showed lush, even growth, and lodging, or flattening from the weight of the heads, which are indicators of better-than-average yields. Most of the remaining paddies showed evidence of minor problems or damage. Some showed signs of flood damage, especially those in low-lying areas, but they were certainly not totally destroyed. Other paddies in this category had excess moisture, but showed potential for improvement during the dry season. Rice paddies in Kampong Thum and Pouthisat were more seriously flood damaged than those elsewhere, but these provinces account for only 11 percent of the total sown area. Throughout the country many other fields which exhibited sparse growth had probably been planted late and could improve. Countrywide, only about five percent of the paddies showed a high degree of damage or poor development. [redacted]

25X1

Outlook

Barring climatic adversity in the coming months, we anticipate few problems gathering in the rainy season rice crop and performing dry season operations. By late December, rainy season rice harvesting was proceeding

---

3 Our estimate of the 1983/84 Kampuchean rainy season rice crop is based on a statistically valid sample survey of imagery from 10 selected areas within the country's main rice producing regions (Figure 1). The survey involved placing computer-generated overlays, each having 100 random points, on cloud-free imagery acquired in December 1983 and assigning the land at each random point to one of the following landuse categories:

- o Fallow or abandoned fields
- o Flooded fields-crop not identifiable
- o Other (harvested ricefields, plowed field-no crop planted, and field crops other than rice)
- o Active rice paddies, then categorized as healthy or unhealthy/damaged
- o Nonagricultural land.

The total number of fields in each agricultural category was used to derive the percentages shown in Table 2. [redacted]

25X1

4 We did not conduct an imagery assessment of 1982/83 or 1981/82 Kampuchean rice production. [redacted]

25X1

25X1

several weeks behind schedule, due to the late planting of some of the crop. A small but varying percentage of the sown area fails to be harvested each year. This could cause current rainy season rice production to fall below the estimated 1.7 million tons. The lagging harvest will probably also result in delays in sowing and transplanting the dry season rice, with a consequent smaller-than-planned area and some small yield reductions. [redacted]

25X1

With the sowing of dry season rice far from completion, its contribution to total production cannot be assessed fully. Though planting delays should hold total area below the 155,000-hectare plan, we estimate that last year's 135,000-hectare harvested area will be matched or exceeded. We expect that yields will range between 1.6 and 1.7 tons per hectare, similar to performance during the last two years. Monsoon rainfall during 1983 did result in adequate flood levels which should provide enough moisture for the dry season crop. We therefore estimate that dry season rice production could range from 216,000 tons from an area of 135,000 hectares to as high as 246,500 tons from 145,000 hectares. [redacted]

25X1



Table 1

Kampuchea's Rice Crops<sup>a</sup>

	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>	<u>1982/83</u>	<u>1983/84</u>
<u>Rainy Season Rice</u>					
Planned area (thousand hectares)	--	1,500	1,700	1,600	1,600
Harvested area (thousand hectares)	--	1,232	1,300	1,545	1,614 (sown)
(% of plan)	--	82%	76%	97%	101.8%
Yield (metric tons/hectare)	--	1.19	1.0	1.16	1.05
Production (thousand metric tons)	--	1,466	1,300	1,788	1,700
<u>Dry Season Rice</u>					
Planned area (thousand hectares)	--	123	150	165	155
Harvested area (thousand hectares)	--	88	149	135	135-145
(% of plan)	--	72%	99.6%	82%	87-94%
Yield (metric tons/hectare)	--	1.30	1.7	1.6	1.6-1.7
Production (thousand metric tons)	--	115	256	216	216-247
<u>Total Rice</u>					
Harvested area (thousand hectares)	771	1,320	1,449	1,680	1,749-1,759
Production (thousand metric tons)	565	1,581	1,556	2,004	1,916-1,946

<sup>a</sup> Harvested area, yields, and production for 1980/81 are FAO estimates, and the same data for 1983/84 are CIA estimates. All other data are from the Kampuchean press. The 1983 rainy season rice area estimate is that which was sown, and has not yet been harvested; since some amount of the sown area fails to be harvested each year, this figure represents the upper limit of the expected harvested area. Area and production numbers have been rounded.

25X1

25X1

25X1



25X1

Table 2

Kampuchea's 1983 Rainy Season Rice Crop

Imagery Sampled Data

Province	CIA Est. Production (mt)	Sown Area (ha) (% of Total) <sup>a</sup>	CIA Est. Yield (mt/ha)	Reported Weather Conditions <sup>a</sup>	Active Rice Paddies (%) (Healthy%) <sup>b</sup>	Flooded (%)	Fallow or Abandoned (%)	Other <sup>c</sup> (%)
Batdambang	284,700	284,700 (18)	1.0	good rainfall, later flooding	92 (51)	0	4	4
Prey Veng	231,200	210,200 (13)	1.1	varied	81 (67)	4	7	8
Siemreah-Otdar	179,300	163,000 (10)	1.1	varied	83 (64)	3	14	0
Meanchey								
Kampong Cham	205,400	158,000 (10)	1.3	spring drought	63 (87)	0	28	9
Takev	135,000	135,000 (8)	1.0	varied	90 (58)	4	3	3
Svay Rieng	130,000	130,000 (8)	1.0	good rainfall	90 (61)	1	9	0
Kampong Thum	93,600	117,000 (7)	.8	good rainfall	87 (16)	1	9	3
Kampot	115,800	96,500 (6)	1.2	spring drought	62 (69)	0	14	24
Kampong Spoe	75,000	75,000 (5)	1.0	spring drought	— —	—	—	—
Pouthisat	51,200	56,900 (4)	.9	varied	86 (49)	0	12	2
Kandal	52,300	52,300 (3)	1.0	varied	70 (63)	19	8	3
Kampong Chhnang	48,500	48,500 (3)	1.0	good rainfall	43 (88)	35	22	0
Other <sup>d</sup>	97,600	87,400 (5)	1.1	good rainfall	— —	—	—	—
Total	1,700,000	1,614,400 (100)						

25X1

- <sup>a</sup> According to [redacted] press reports. [redacted]
- <sup>b</sup> The first number gives the percentage of active rice paddies to the total number of fields sampled.
- <sup>c</sup> The second number in parentheses is the percentage of total rice paddies classified as healthy. [redacted]
- <sup>d</sup> Harvested, plowed, and non-rice crop fields. [redacted]
- <sup>d</sup> Includes Kaoh Kong, Kracheh, Mondul Kiri, Preah Vihear, Rotanakiri, Stoeng Treng, and Phnom Penh and Kampong Saom municipalities. [redacted]

25X1  
25X1  
25X1



25X1

25X1



25X1



**Page Denied**

Next 10 Page(s) In Document Denied