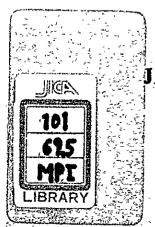
THE FEASIBILITY STUDY ON THE ERECTION OF A JUTE-PULP MILL IN THE PEOPLE'S REPUBLIC OF BANGLADESH

(SUMMARY)

March, 1982



JAPAN INTERNATIONAL COOPERATION AGENCY



国際協力事業団 10di 1584.79.255 10di 1584.79.255 10di 1594.55 10di 1594.5

No. 14118 101 69.5 MPI

ACTOR (A. P.)

ST-355.

CONTENTS

	The state of the s	
`)_	, i .	age
1.	Background of the Study Annual Study	. 1
, - 7 -	1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	
2.	Objectives and Scope of the Study	1,
	The state of the s	
3	Study Team and Survey Schedule	2
,	ALERON OF THE REAL OF THE STREET	•
4	Outline of the Project	: 2
a .t je		•
	1) Availability of jute cuttings	2
	2) Demand and market of pulp products	
	3) Mill capacity	3
,,, ~	4) Mill site	3
	5) Mill process	3
*	6) Major facilities	3
		. 4
i		
5.	Investment Cost and Financing Plan	4
6.	Financial Analysis	6
	en de la companya de La companya de la co	
n *	1) Premise	- 6
. , ,	2) Production cost	7
· -		. 7
	ing frager The Conference of the	
7	Economic Analysis	7
	1) Premise	7
	2) Economic internal rate of return	7
	3) Saving and obtaining of foreign currency	7
•	4) Other benefits	8
		,
8.	Conclusion and Recommendation	. 8
٠,	LIBRARY	J
	A Lights and the life lift lift in the lif	



COMPANY

' <u>ද</u> ුද්			
÷	······································	. Tes + \$	ì
\$	· · · · · · · · · · · · · · · · · · ·	e (c) e y	ĩ
~	- The Company of th	1,5 = E	£
y	encente e la	lu."	Şı
£	en e	2 m 4 m	
**	्रा प्राप्त के किया है। विश्व के किया ह स्वरूप के किया के किया के किया के किया है। विश्व के किया के किया के किया के किया है। विश्व के किया है। विश्व क स्वरूप के किया के किया किया किया के किया किया किया के किया के किया के किया किया है।	10 14 17	ş
3	• • ••• • • • • • • • • • • • • • • •	276)	, ī
σ	ers and a second control of the cont	. jı (, 2,3
5 ·			
, , , , , , , , , , , , , , , , , , ,	in the second of	อร์โ	, <u>"</u>
***	Food the first and the research to the following the state of the first state of the firs	3 B C 14	
5,	A	સંદર્શ	,8

1. Background of the Study (1997) (1

Jute is one of the most important products in the People's Republic of Bangladesh, and jute and jute goods largely contribute to the country's export.

Recently, however, there seems to be a decline indication in Bangladesh jute industry, and production of jute is tending to decrease.

Accordingly, the Government of the People's Republic of Bangladesh signifies her enterprising intention in restoration of the jute industry in the 2nd Five Year Plan of Bangladesh. Bangladesh Chemical Industries Corporation (BCIC), which is under the influence of Ministry of Industry, has planned to manufacture pulp using jute cuttings as raw material aiming at a production increase of her own pulp and paper mills, and has been interested in the feasibility of the establishment of a pulp mill.

Under the foregoing circumstances, the Government of Bangladesh requested the Government of Japan in June, 1980 to udnertake a survey on the feasibility of the pulp mill. The Japan International Cooperation Agency was entrusted by the Government of Japan with the feasibility study and despatched a survey team to Bangladesh to perform the study.

The state of the s

2. Objectives and Scope of the Study

The objectives of the feasibility study are to make a comprehensive evaluation of the viability of the Project from the technical and economic aspects and to make an examination of the possibility of the industrialization of the plan to make pulp for paper making from the jute cuttings.

To attain the above objectives, the following subjects have been investigated and studied.

- station. The second of the sec
- (1) Present situation of pulp and paper industry
 - (2) Pulp market
 - (3) Availability of jute cuttings as raw material
- retion there. (4) are Mill size Larb Leve believe it reproper the first of a profit that
- and Hornard (5) is Mill location and site was subject on their in one as one in the first of the first
- ingroups of (6) w (Mill process syndral Banka brokn sociation (which a Time is the in at file a no
 - (7) Mill facilities () so the first of these solutions and the first of these solutions are solutions and the first of th

		Mill construction		Background of the Stude-	7.
	(8) (9)	Project implementation	3		
ing sa	(۶) เรียกเล	Linvestinent cost estimation	ย ได้ทำเวอลน์ 5175	cristing and all states	
,	(11)	Financing plan	្ន ប្រជាសុខស្រាល	ा होत्र होते हो कात हो हो। संदेश कार्य प्रयोग हो कार्य होता हो।	o i time
	(11)	Financial analysis	-		<u> '</u>
allit 💆	(12) (13) ¹	•	- อร์ "สิทิยาส "ชารค์ที่ "	C. Change lowers	,
	(14)	Comprehensive evaluation and	d τἐcommendatio	unit, in retrompart you thin	mlus
٠,	(14)	Comptononia avaidation and			-
s'aligrit	traik nárd	Alex the distance is the of t	ull der eine undigen	ent ithere was the	, .
3. 1026 S	túdy Tea	m and Survey Schedule	फ़रें नाई और देश क	ร้างประกุ สมาเลขายมเมื่อเป็น	riomia
ัณ ์ นาร์ก	ni deser	andlin of follow water for all date	(วิธีรักษณ์ทุกระบะ 🔾	क्षेत्रक प्रीतन्त्रांट इं निर्देशकार्तिक	Corf
<u>ंद्रिश</u>) [∞] Meń	ibers of study team and starts	र काल्ट चीमह कुमार -	try, be, observed to enguet	ะเปลเรี
		्या में रक्षांत्वात् स्था रहते हैं से			
T		Name		Field केले कुछ देश देश विकास व	व्यक्ति
		अDr. Shigeo Ueki एक्ट्रिक्ट वर्ष्ट्र	1 2 2 2	2	,
		Mr. Hirotake Tomita			
Me a Ha		Mr. Yoshihisa Endo			
	1,3000	Mr. Masahiro Ariga - Cara	v		इंट अपि
- ' '	v.	Mr. Sigeki Haginouchi		ss Engineer	. ,
	٠, ٠	Mr. Keisuke Takamura		Engineer	,
-	***	Mr. Nobuo Ishii	√ ∴ dindus	rial Economist	لگد د دیک
*		***************************************	.444.4- 24.7		* * *
** 2)Su r	vey schedule	ting Classicates on	pas actumo set - 1.	, '
`		Live on place, a repulsioner of			
		súrvey was madé in Banglades		•	
- ",	_	eam collected the data and i			with
Banglad	lesh offic	ials concerned and carried out s	survey of the can	lidate mill sites.	-, *(

4. Outline of the Project

1) Availability of jute cuttings

ite cuttings - ស្រីការបញ្ចើនទៅ សេសស្រីក្រុង ខ្លាក់ក្រីការប្រឹក្សាស្រីការប្រ

Jute fiber peeled off by the growers is retted and dried before being shipped to the market. A portion of the above is sent to the jute pressing and baling centres where the bottom part of jute is cut off. The cutoff parts are called as jute cuttings, a portion of which is exported

and the remainder is stocked.

The stocked jute cuttings is estimated to amount to about 100 thousand tons annually of which about 50 thousand tons of jute cuttings will be utilized as raw material for this Project.

Demand and market of pulp products

ittip Mesching

anierwa chel

Bangladesh is importing long-fibred wood pulp. The imports is increasing and is Chemical recovery foreseen to reach 17,000 tons by 1986.

Power continua

Bangladesh is also exporting pulp to the neighbouring countries. It is expected to increase export of pulp if the quality of pulp is good. The this season in the pulp is good.

कर्मगावत रेका वाजरियाद

The pulp to be produced by this projected mill can substitute for the imported wood pulp and the remainder will be exported. 🕟 🖰 🖰 🛗 📆 നായും വരുന്നു വരുന്നുന്നു

all bay a Mill capacity and one enthusia was become a proof has about my office of

Judging from availability of raw material and demand forecast of pulp, the production capacity of pulp is selected to be 25,000 tons annually to be assumed to be 25,000 tons. the contract becomes elective an Octaber 1. 1911, commercial operation of the rell will start laurschie schillisteld deseutierungs erreiche lächet zu desenhab a kerbakk de Kil. de Ko. de gebende ka other and day in a be 200. The amobie of laborational persons a repaired will be 508 in 127th.

Taking availability of raw material, natural gas as fuel, transportation, etc. into consideration, Bhairab Bazar (70 km north-east of Dacca) was selected as the most suitable millsite. The mill will require 7.35 ha. area. prestreet for an influence the

Mill process

Soda process was selected as the most suitable pulping method. In soda process, the cooking yield is rather lower than that in the sulphate process. This is caused by the decomposition of carbohydrate that occurs simultaneously with the delignification in cooking operation. This may be solved by addition of quinone compounds, which accelerate delignification and eliminate decomposition of carbohydrate.

Major facilities was person mon thousand lostous and as

Major facilities in this pulp mill are as follows: A secure age.

Raw material handling

Pulp screening
Pulp drying

At the principal and Cooking is reflected and the principal and principal and the principal

7) Mill construction and operation and perfection of the property of the prope

Pulp production and power generation facilities are installed on a barge and the other on land.

-3 Particular Commission of the Control of the Cont

Construction period is expected to be 39 months including 3 month test trial. When the contract becomes effective on October 1, 1982, commercial operation of the mill will start on January 1, 1986. The mill is designed at 3-shift 4-change operation and the number of annual operating days is to be 330. The number of labourers and personnel required will be 808 in total.

The frequency of the second of the control of the control of the second of the second

(1) Terms of contract

S. 1 .

- Turn-key lumpsum basis and the production of the

5.7

<u>Items</u>	Foreign Currency	Local M ₁ *ως (ης Currency	Total
Att the size brains		·其中等一方,1450年(1984)	<i>(</i> ()
Give Plant Cost 12 of Start but to D	54,939	10,809	65,748
The Land Acquisition of the following the second	0	137	137
Preoperation Cost	999	307	1,306
्य बद्धार केंग्राट के रूप प्रस्ते हैं। उन्हों से क्षा कर है		•	
Sub-total	55,938	11,253	67,191
		·	
Interest during Construction (25,5187)		reads and TriceMat	
Initial Working Capital	1,757	2,501	4,258
Total		್ ೧೯೬೩ ಕ್ಷಮಿಕ್ ಕ್ಷಮಾನಿಕ	(3) 78,708
3.3.5		175 / 21	
5 Co. 25 Co. 38 E		122 1 1/17	
ž.f		- 15 54	
er view of the second			
(5) Capital structure		6 10 (2,47)	(J) }

Equity capital: 40% Long-term loan: · 60% (*

A 7 1 -Carriery attentions (6) Long-term loan Ages and make the state of the control of the contr

1 - 1 Interest: And the second 11.5% annual and

Repayment:

Grace period:

10 times/10 years repayment of And the service of the service of the service of principal by equal installment

no estago flim kogelture, talka sever E · ** \$\$\$\$\$\$ * * 3.

3 years after starting of mill operation

Leading through the second for the second of the control of the second of the second of the second of the second

Financial Analysis 6.

to Tomers Lemment of

1) The Premise

	, , ,			
g.(1)	Project life:	rgunarest sturus restitu	15 years	The state of the s
(2)	Basis of cost and price:	a frame haraging	Cost and price in	1986
\$ 1 0° 0' 170	भीन्त्रीय	56636	_	n 1986 are calculated
\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	C of the second	2.	_	calation (annual: 10%
हेल है	1.382	与我		cost and annual 7%
			for the other) o	n the cost and price in
13115	78.2	4 M 6 C	1981.	धारक गार्थ
(3)	Selling price of products:	**	USD828/tons	on transition of the
19 (D)			•	n Carellandaria
(4)	Production ratio			
ra el				ADET
	1st year:		76%	•
•	· 2nd year:		92%	, , , , , , , , , , , , , , , , , , , ,
	3rd year:		. 96%	, ,
				• ,

(5) Depreciation

ी5 years एक्ट्रो

Machinery and equipment:

→ 40 years (16.2)

Civil and buildings: Preoperation cost:

5 years

Interest during construction:

5 years នេះខេត្តក្នុង 🔠 🦂

Est. Cutypital retine

Straight-line depreciation is applied. 1920 1938

(6) "Corporate tax " 676 01

ารณาสาราชาวัย

meanter of larger off topological and

Tax holiday:

8 years after starting of mill operation

-water state leavely from Tax rate: 134. Consequence 55% continues

3 3 3 3 3

tale 2) to a Production cost transport can be executed application of the content of the con un entry, a standed other tot he taleful hebitaries exa-

Production cost per ton of product was calcualted as follows:

USD955.5, who we have not we are I 1st year: USD814.5 3rd year:

- சும் விளையி a8th year: வி கெற்றுள்ள வூ வூர் அகொடிUSD652.6 வி கருக்கி கரிட்

15th year: USD516.8

Internal rate of return which to higher in additional allowed analysis were 3)

> IRROI (before tax): 10.54% IRROI (after tax): 8.95%

> IRROE (before tax): 9.55%

> IRROE (after tax): 6.56%

7. **Economic Analysis**

- 1) **Premise**
 - (1) Shadow rate

Foreign currency:	e 1	31.30
Skilled worker:		1.50
Unskilled worker:	30 m. 1.7	0.00
Jute cuttings:	مي و . مي م	0.80
Natural gas:	·	1.50
Other local materials:	, s	1.00

· Economic internal rate of return

13.18%

Implementation of the Project enables to save and obtain about USD339 million of 3) foreign currency.

4) Furthermore, the Project brings increase of employment, economic effect to the community, extended effect to the related industries, etc.

三腹点が発行があるいかのではいかない。ことからやめたいではた

8. Conclusion and Recommendation

mendation

- This Project is considered feasible from the technical, financial and economic view-points.
- 2) This Project accordingly should be undertaken as early as possible.

The first of the second of the

er er state for the first of th

ะ ค่า ค่าแส ปุ่ง พระเสนเหติน (ก็

The second of th

en de la companya de la co

en de la companya de la co

हैं। हैं कि होते र व्यवस्थित के यह देशकी तर सम्बद्ध एक सम्बद्ध एक सम्बद्ध परिचार विकास विकास विकास है। अहें विकास है

BANGLADESH

