

Advancing Enhanced Wood Manufacturing Industries in Laos and Australia
ACIAR Project FST/2016/151.

A preliminary analysis of wood and fibre flows for Sun Paper's Sepone facility in Lao PDR based upon import/export data from China, Thailand, Vietnam and Lao PDR

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Declaration

This report has been prepared by Salwood Asia Pacific Pty Ltd. and the contact person is Stephen Midgley.

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What we did:

- Analysed publicly available reports and presentations offered by the company, its suppliers and media reports to establish a background profile.
- Analysed export data available through Vietnam and Thai Customs to assess the company's wood fibre imports (wood chips) from those countries and;
- Analysed data available through China Customs for import of pulp and paper products from Lao PDR. Sun Paper is the only company in Lao PDR exporting significant volumes of pulp and paper products to China.
- Analysed limited available data from Lao Customs to compare material imports and product exports and check against Chinese import data and Thai and Vietnamese export data.
- Based upon industry norms and import data, a balance was found between imports of wastepaper and exports of recycled pulp and containerboard
- Based upon industry norms for wood consumption, estimates of demand for domestic eucalypt and acacia wood fibre are made.

- Since 2008, Sun Paper Holdings has invested in excess of US\$1.1 billion near Sepone, Savannakhet Province in plantation establishment and pulp and paper manufacture; the largest investment in the Lao forestry sector – ever.
- Sun Paper’s pulp and paper product exports to China in 2022 comprised Packaging board, Recycled Pulp (RCP/URP) and Dissolving Pulp worth > US\$770 million.
- The processing business comprises 3 linked entities
 - A combined “swing” mill with design capacity 400,000 tpa BHKP or 300,000 tpa DP based on eucalypts and acacias
 - A 400,000 tpa design capacity for unbleached recycled fibre pulp (URP) (syn. recycled fibre pulp, RCF) mill to process imported AOCC/OCC grades of waste paper
 - A 1 million tpa design capacity for packaging/containerboard facility based on imported wastepaper (AOCC and OCC grades)
- The company has access to some 32,000 ha of company-managed plantations of eucalypt and an estimated 6,450 ha of smallholdings and can purchase wood from other plantation growers in Lao PDR
- The BHKP/DP pulping facilities are heavily dependant upon eucalypt and acacia wood chip imports from Thailand and Vietnam (for 2022 ~ 1.2 million m³ worth >US\$90 million). Domestic supply of wood chips was estimated at >450,000 m³ for 2022 – derived from the company’s own plantations, smallholders and purchases from other major growers.

- Domestic capacity to supply wood fibre remains limited and substantial woodchip imports will remain a feature for the foreseeable future.
- Imports of AOCC and OCC grades of wastepaper come via Vietnam (Da Nang) and are predicted to reach 1.7 million tonnes valued at US\$409 million in 2022. Primary sources are the USA and Canada with smaller imports from 16 other countries.
- Dissolving Pulp exports to China in 2022 are predicted to reach 282,000 tonnes valued at USD283 million . No BHKP exports were recorded by Chinese Customs for 2022.
- The URP pulping facility requires imports of 680,000 tonnes/year of AOCC/OCC grades of waste paper primarily from North America. Exports to China for 2022 were estimated at 71,850 tonnes worth USD28 million.
- The Containerboard facility requires imports of >1 million tonnes AOCC/OCC annually to operate at design capacity. Product exports to China for 2022 were estimated at 734,000 tonnes worth USD459 million. Small pilot exports were reported to Thailand of 446 tonnes (Jan – Oct) worth US\$265,000 and 5 other countries (Bangladesh, Philippines, Thailand, UAE and Vietnam)
- Export figures suggest that the recycled pulp and containerboard facilities are operating under capacity.
- Examination of limited data from Lao Customs reveals inconsistencies and anomalies suggesting further work and examination are required.



Sun Paper Holdings (Lao)



Sun Paper Holdings (Lao) is member of the Sun Paper Group; China's largest privately owned and managed paper business. Its plantations, pulp and paper investment in Lao PDR, based at Sepone in Savannakhet Province, exceeds US\$1.1 billion representing the largest single investment, ever, in the Lao forestry sector.



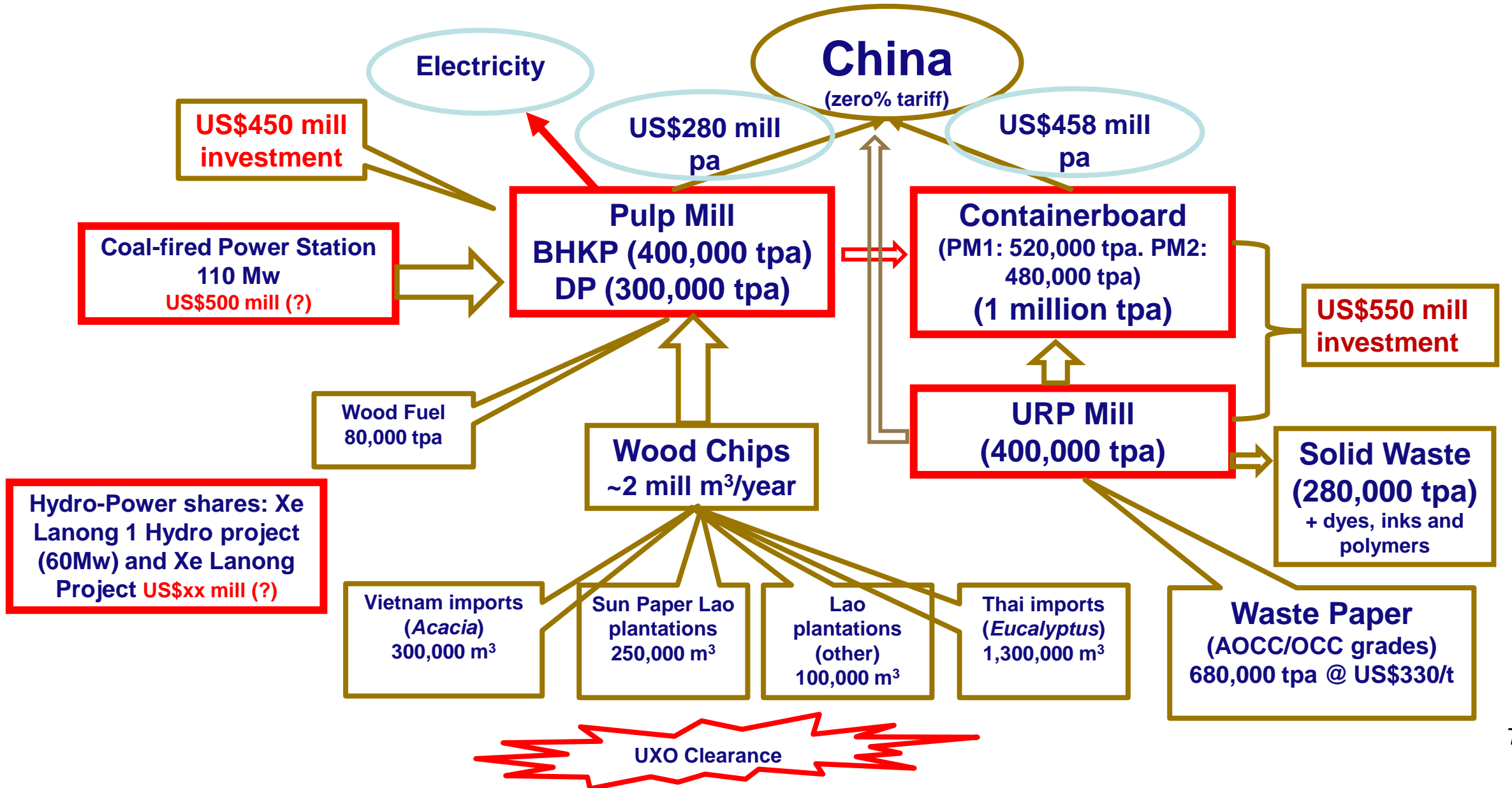
Operational entities at the Sepone site include:

- Company-managed eucalypt plantations: estimated 32,000 ha including 22,000 ha assets purchased from the Birla Lao investment in 2018.
- An undefined number of smallholdings established under a variety of conditions, estimated at 6,450 ha with loose obligations to supply the Sun Paper mill.
- A “swing” designed pulp mill with a design capacity of either 400,000 tpa Bleached Hardwood Kraft Pulp (BHKP) or 300,000 tpa Dissolving Pulp (DP) based on eucalypt or acacia feedstock.
- A Unbleached Recycled Pulp (URP or RCF) mill with a design capacity of 400,000 tpa based upon imported North American AOCC/OCC grades of recycled paper
- A Containerboard production plant comprising (2 lines) with an annual capacity of 1 million tpa – utilising primarily imported wastepaper AOCC and OCC grades.

Finished products are exported mainly to China for utilisation by the Sun Paper Group

Figure 1: Notional Structure. Sun Paper Holdings (Lao PDR)

VALTIP 3



- The Sun Paper plantation estate is in early stages of development.
- Almost all eucalypt hybrids:
 - 10,000 ha planted and company-managed
 - 22,000 ha purchased from Birla Lao in 2018
 - 6,450 ha smallholders – scattered and of variable quality

Sun Paper has target of facilitating 70,000 ha of smallholder plantings to produce wood chips for their pulp mill

The company has requested access to 231,000 ha of additional land from the GoL in degraded Production Forest Areas (PFA) to expand their company-managed plantation estate and to support expanded pulp production

Commissioned May 21, 2018. A “swing” designed pulp mill to produce either Bleached Hardwood Kraft Pulp (BHKP) or Dissolving Pulp (DP)

Original design capacity of 300,000 tpa BHKP/250,000 DP.

Expanded design capacity of :

- 400,000 tpa BHKP based upon a combination of eucalypts and acacia wood furnish

OR

- 300,000 tpa DP based upon almost 100% eucalypt fibre

BHKP exported to Sun Paper facilities in China or used for Sepone containerboard facility

Commissioned May 21, 2018. A “swing” designed pulp mill to produce either Bleached Hardwood Kraft Pulp (BHKP) or Dissolving Pulp (DP)

Originally design capacity of 250,000 DP. Expanded design capacity of to 300,000 tpa DP based upon almost 100% eucalypt fibre supplied from Thailand and domestic sources

DP exported to Sun Paper facilities in China

Company estimates suggest annual domestic wood fibre needs for current DP and BHKP production are 350,000 m³ (company presentation, December, 2019). Wood import/product export analysis suggest that current annual wood consumption from all domestic sources is an est. 450,000 m³

China's need for unbleached recycled fibre pulp (URP) is growing. URP, also referred to as recycled fibre (RCF) pulp, is a newer grade of market pulp that did not exist before 2017. Sun Paper has built an URP/RCF mill with a design capacity of 400,000 tpa based upon imported North American AOCC/OCC grades of waste paper.

Production of 400,000 tonnes of URP will require an input of 680,00 tonnes AOCC#11 + OCC (*)

(*) 1.7 tonnes of AOCC # 11 wastepaper produces 1 tonne of URP/RCP (Sun Paper Interviews with Plantation Taskforce).



Entity: Containerboard: 1 million tonnes/yr

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A Packaging board/Containerboard production plant with an annual capacity of 1 million tpa based upon recycled fibre, and limited inputs of locally produced BHKP and RCF when required.

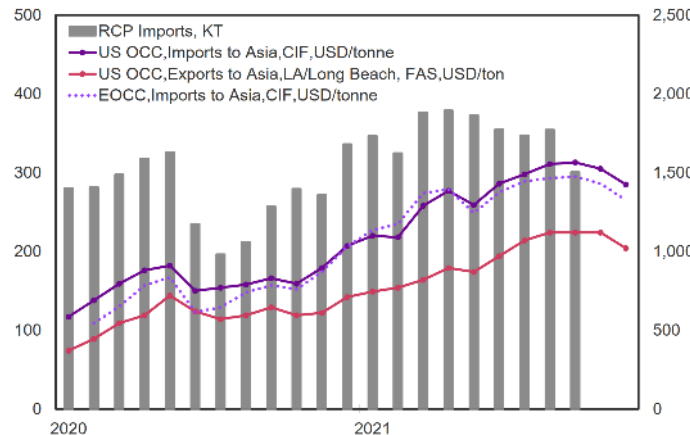
2 Voith processing lines: PM 1 with an annual output of 520,000 tonnes and PM 2 with an annual capacity of 480,000 tonnes

Planned future import needs 1,334,400 tpa wastepaper:

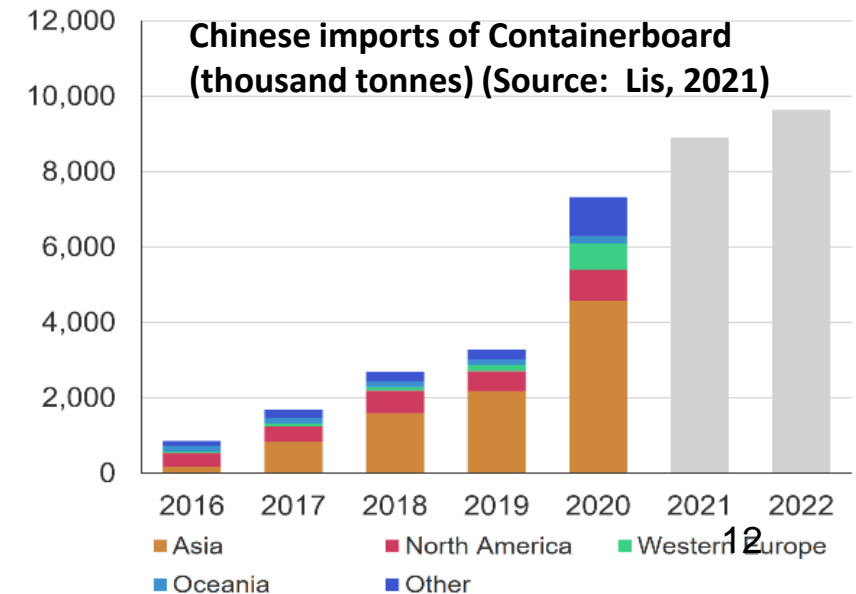
- AOCC = 892,000 tonnes/yr @ est US\$250/ dry tonne(**)
- OCC = 442,400 tonnes/vr @ est US\$240/ dry tonne (**)



**Sun Paper (2018).
Feasibility Study Report



Xu (2021)



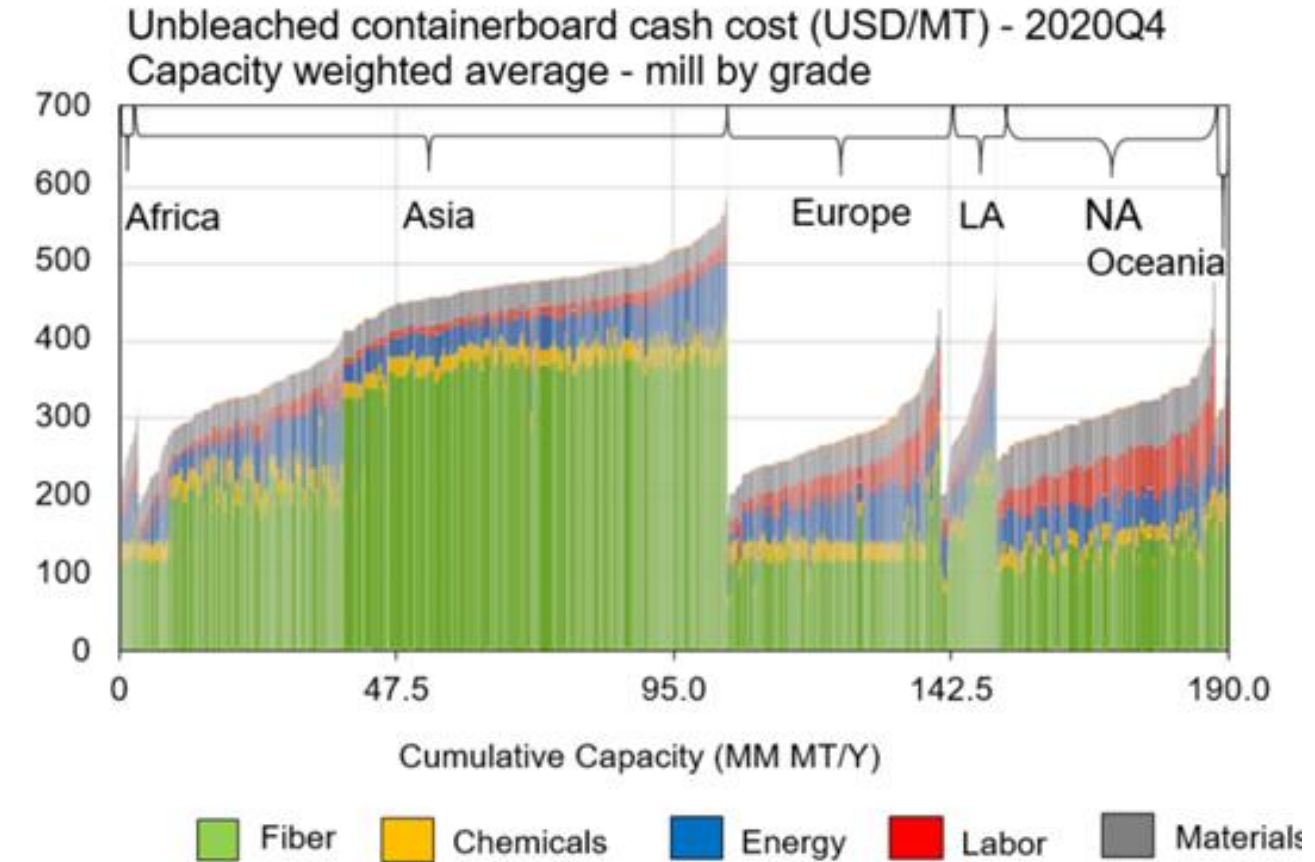
Packaging board/Containerboard production has high demands for energy and this is a dominant cost factor.

- Sun Paper Holdings has a majority interest in the Xe Lanong 1 Hydro project (60Mw) and a minor shareholding (5%) in the Xe Lanong Project (70Mw) both on the Xe Banghiang
- 110-megawatt coal-fired power plant is being built (Lao Daily, October 2020) requiring about 582,900 tonnes of coal annually. Solid waste from the production of wastepaper pulp will be dried and added to coal for combustion.
- Sourced at: <https://laoedaily.com.la/2020/10/01/84069/> published 01 October, 2020.

Containerboard production

Dominant cost factors for containerboard are fibre and energy.

Low costs for both are major attractions for investment in Lao PDR

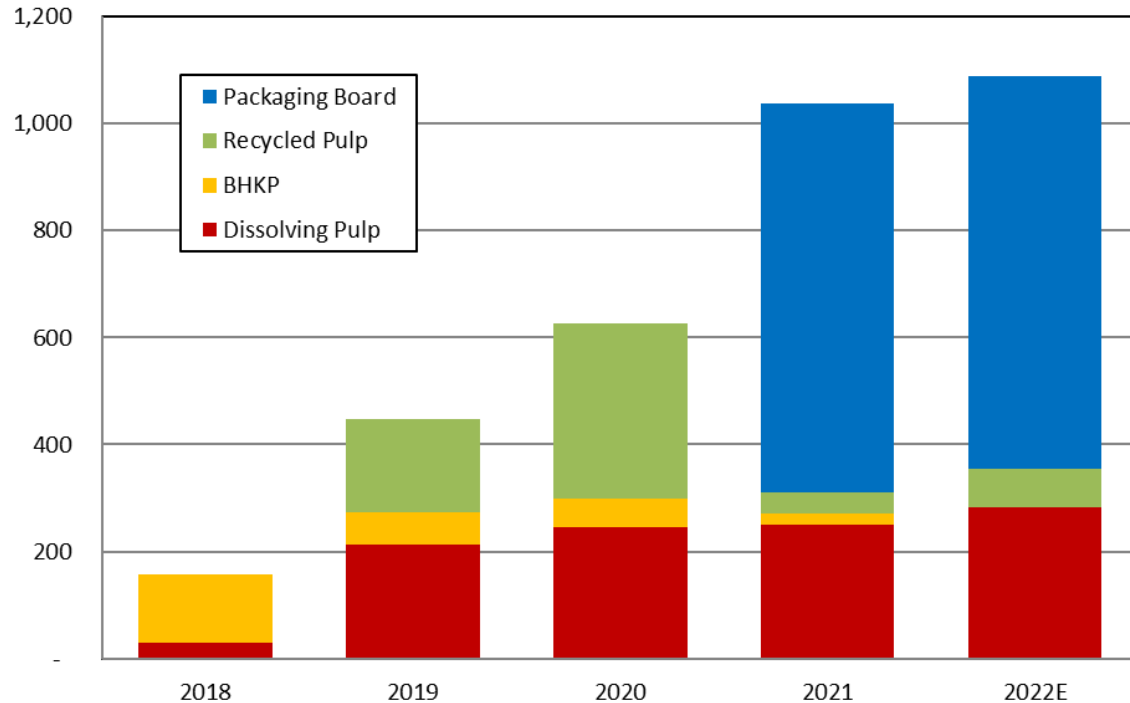


Source: Fastmarkets RISI.

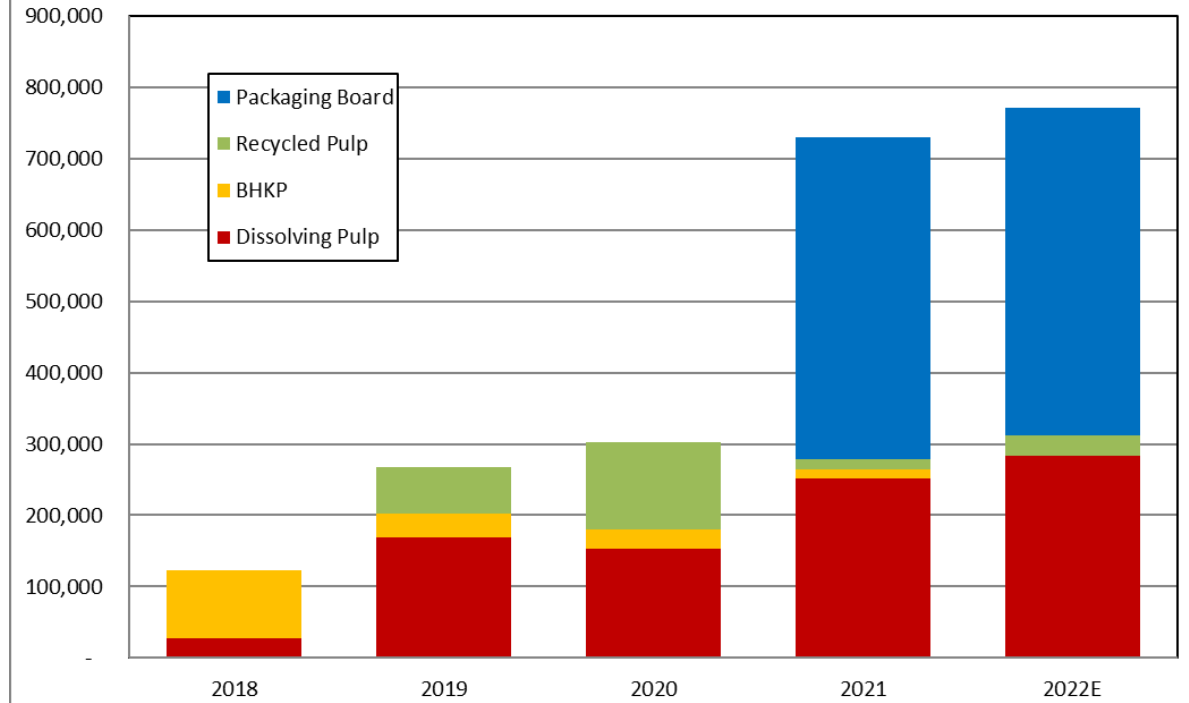
Tariff concessions.

*The Tariff Commission of the State Council issued a notice on October 28 2020, saying that, in accordance with China's commitment to grant 97% of the tariff products of the least developed countries with zero tariff treatment, and according to the exchange of letters between China and the Lao People's Democratic Republic, from December 1, 2020, the preferential tax rate of zero will be applied to 97% of tariff products originating in the Lao People's Democratic Republic. 97% of the tax items are 5161 items marked as "beneficiary country LD" in the preferential tax rate column of "PRC import and export tariff (2020)" (notice of the Tax Commission [2019] No. 9), 2911 tax items of "beneficiary country 1ld1", and 184 tax items of "beneficiary country 2ld2", totaling 8256 tax items. When the packaging line becomes operational, **packaging paper products exported to China will enjoy zero tariff** (normal tax rate: 5%). (Plantations Taskforce, 2021*)*

Laos Export to China Annual Base Thousand Tonnes



Laos Export to China Annual Base Thousand USD (Landed China Value)



HS Codes:

Dissolving Pulp (DP): 470200

Bleached Hardwood Kraft Pulp (BHKP): 470329

Recycled Pulp (RCF): 470620

Packaging Board/ Containerboard: 480524 and 480525

2022 exports (est):

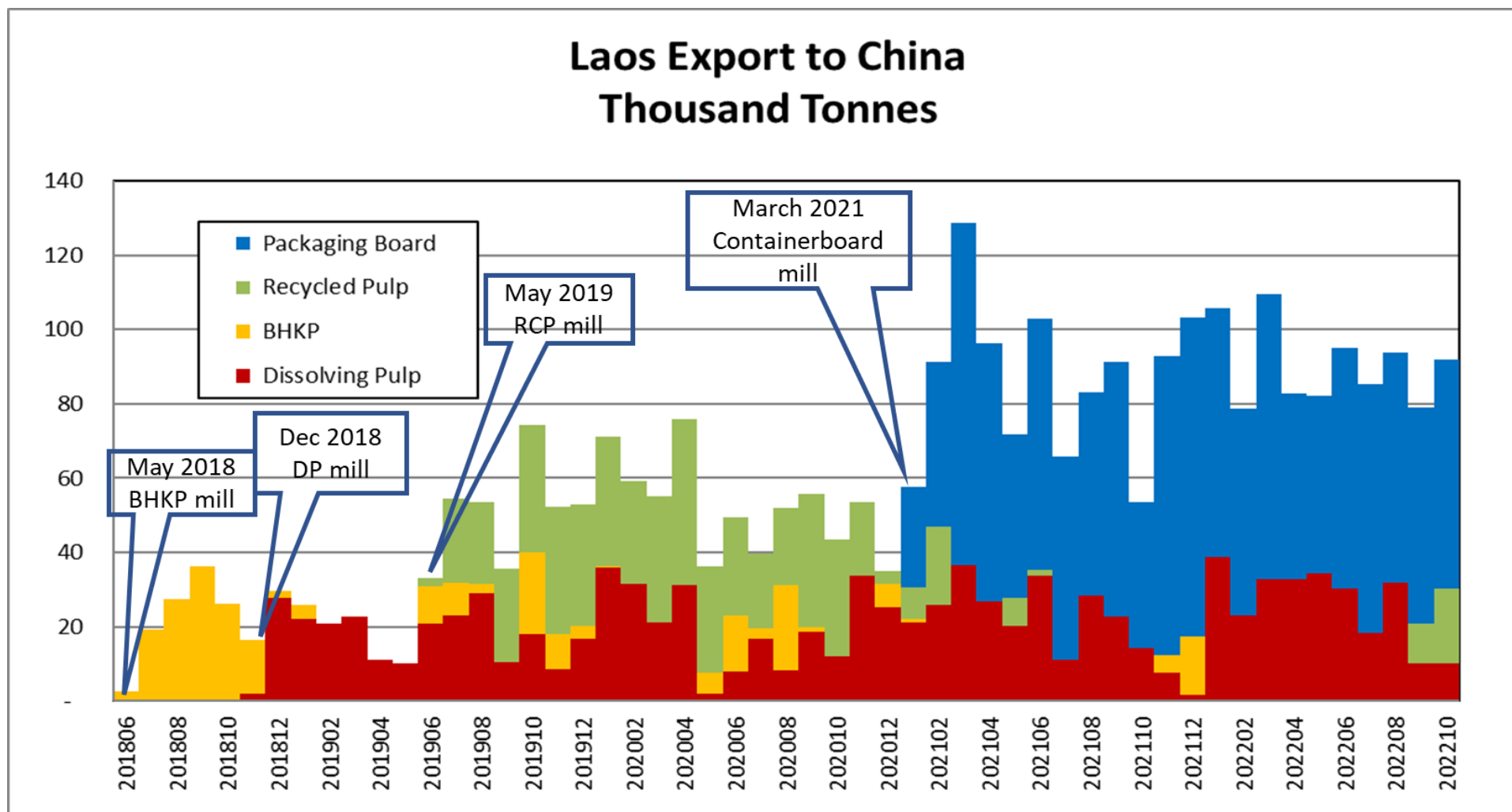
Packaging Board: US\$459 million

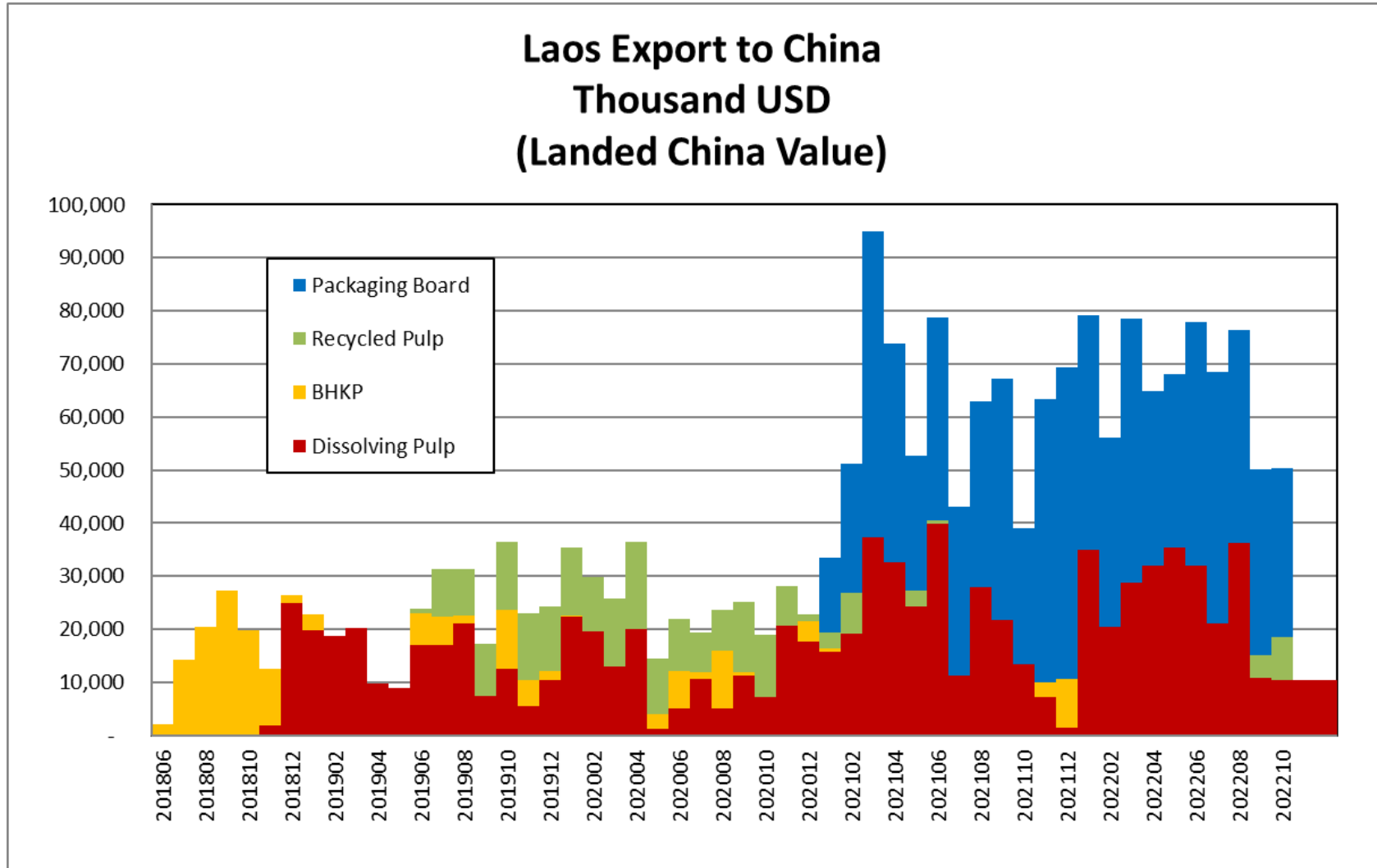
RCF: US\$28 million

Dissolving Pulp: US\$ 283 million

- May 2018: BHKP mill commissioned (300,000 tpa)
- September 2018: Birla sale to Sun Paper confirmed (incl 22,000 ha plantations).
- December 2018: DP mill commissioned (250,000 tpa) swing mill.
- May 2019: 400,000 tpa URP/RCF mill commissioned
- June 2019: Pulp mill capacity increased to 400,000 tpa BHKP and 300,000 tpa DP
- March 2021: 1 million tpa packaging board commissioned (Voith)

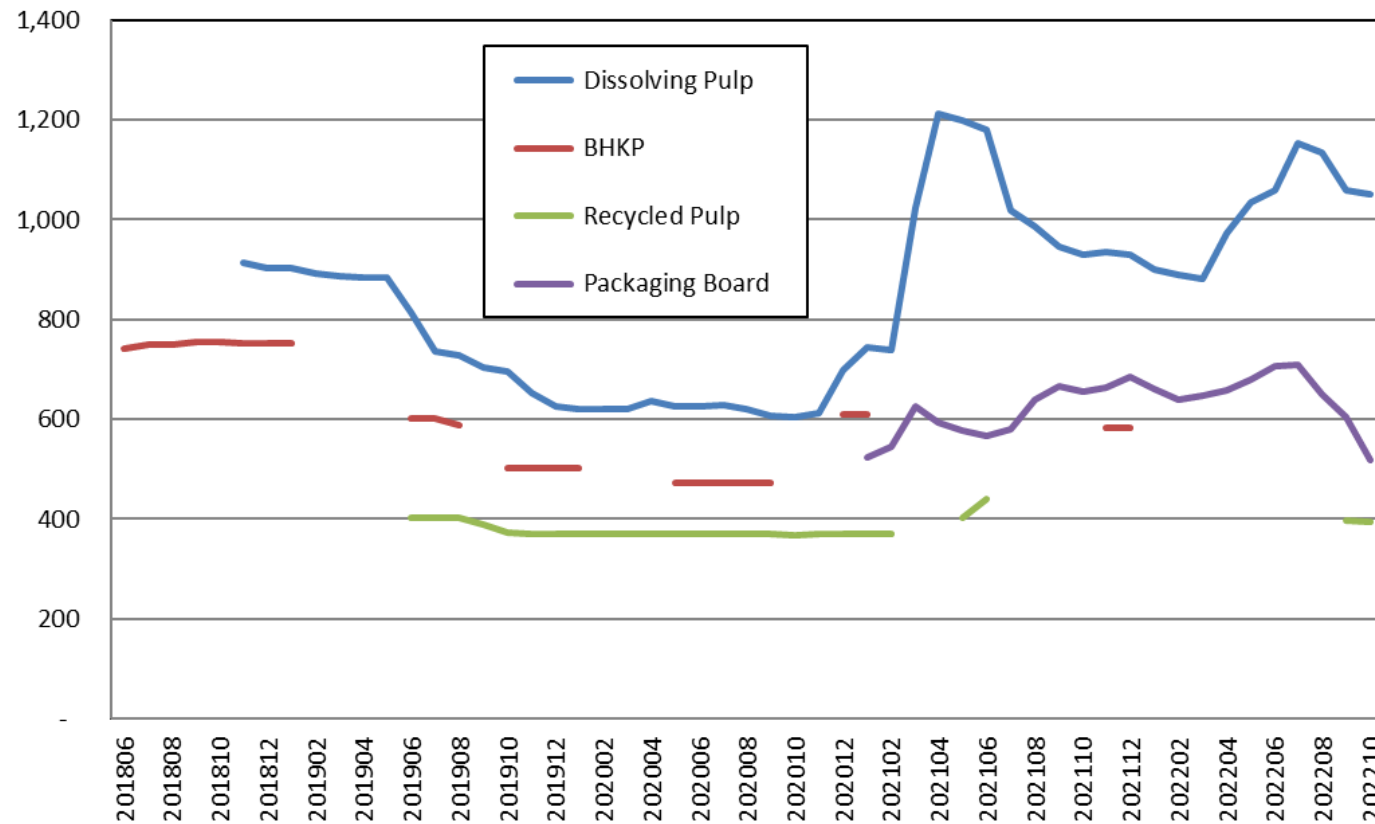
Quantities of product exports to China change as the processing capacity in Lao PDR evolves: BHKP – DP – URP - Containerboard





Value of exports expands as processing capacity expands

**Laos Export to China
Different Products Unit Price Trends**

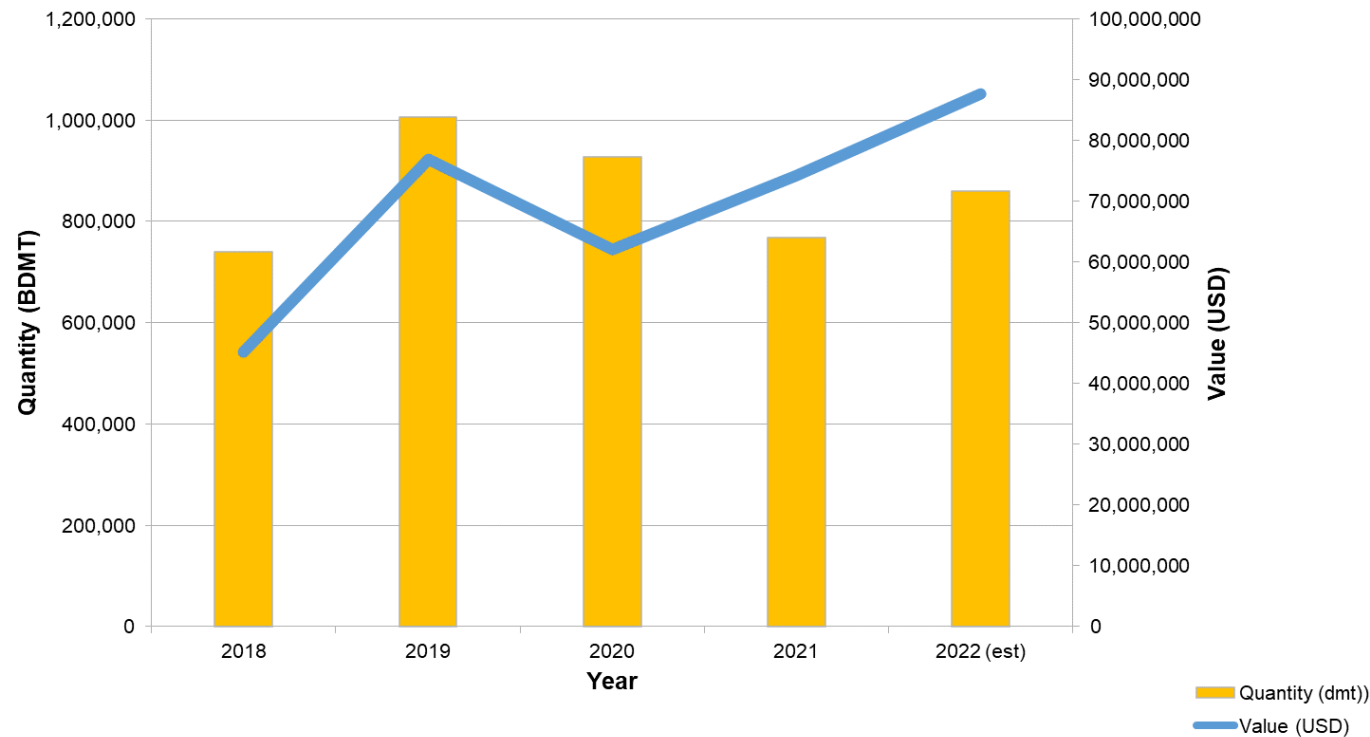


Declared Prices (US\$/t CIF)

DP: US\$1050/tonne (Oct 2022)
BHKP: US\$582 (Dec 2021)
RCF: US\$395/tonne (Average 2022)
Packaging Board: US\$626/tonne (Average 2022)

Quantity (BDMT) and Value (USD) of Lao imports of wood chips from Thailand and Vietnam 2018 - 2022

Lao imports of hardwood wood chip from Thailand & Vietnam : 2018-2022 (est)



HS 44012200 (KG) Non-coniferous wood (e.g. : eucalyptus, acacia etc.) in chips or particles

Source: Vietnam Customs via Quang Tri Provincial Authorities/Customs Department of Thailand

2022

Quantity: 1.3 mill GMT

Value: US\$90 million

Border Gate Declared Unit Value:

US\$77/GMT (November 2022) Historically US\$68/GMT.

FOB Prices: Thai Ports (Q3, 2022):

US\$151/BDMT (China Trade)

Compare with FOB eucalypt prices for October, 2022 (Massey, 2022):

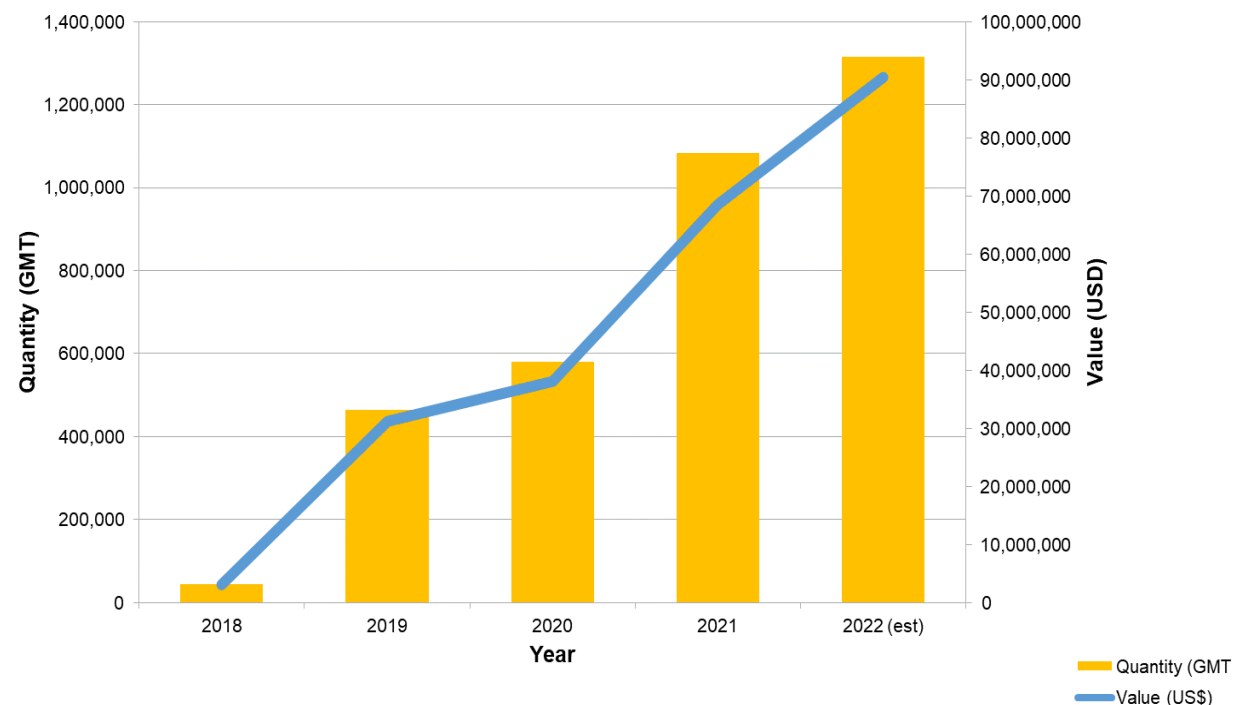
Australia: US\$180/BDMT

Chile: US\$147/BDMT

South Africa: US\$130/BDMT

Volume increase reflects the high demand for DP and the preference for eucalypts over acacia in DP production

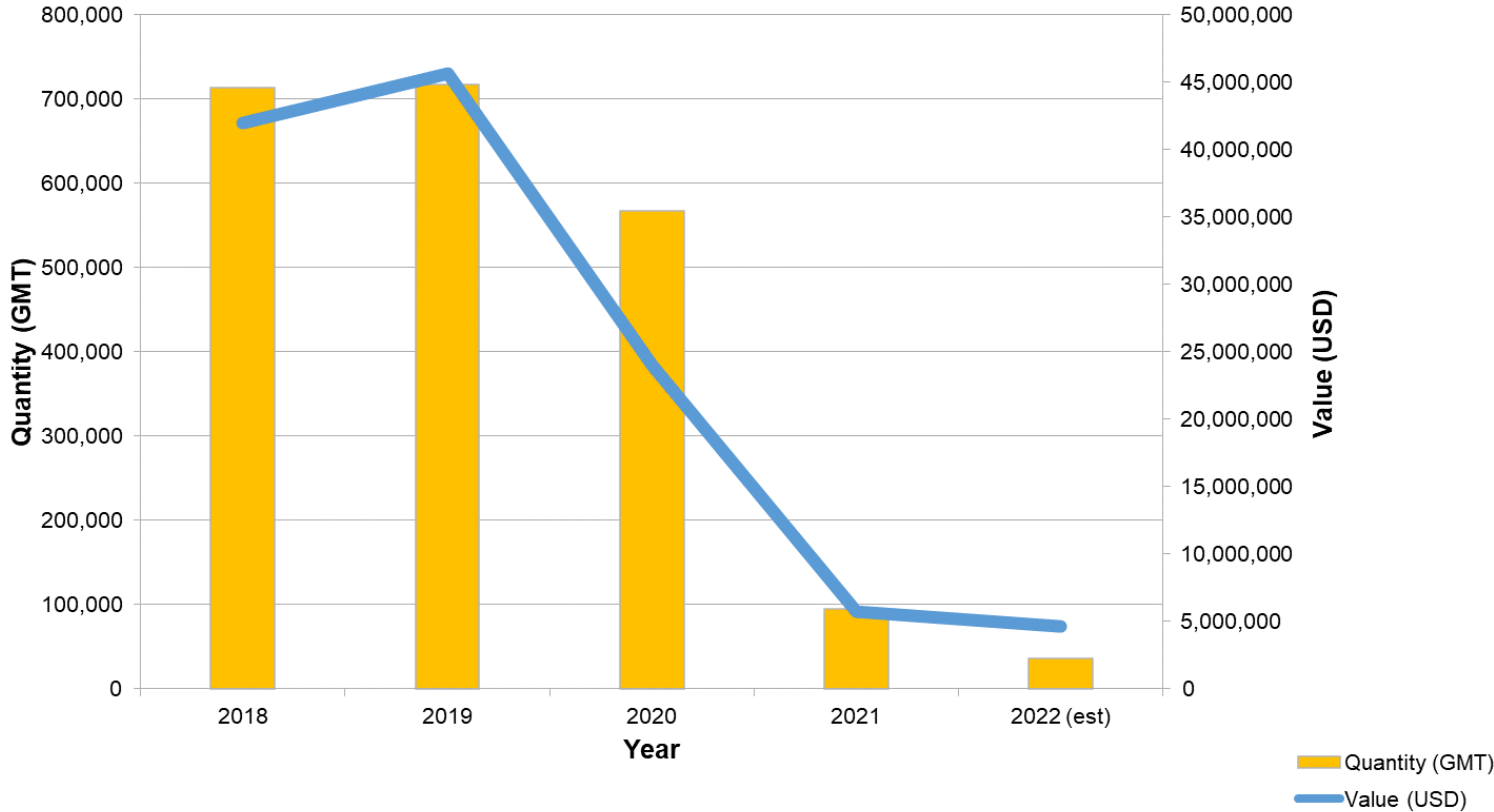
Eucalypt wood chip export Thailand to Lao PDR: 2018-2022 (est)



HS 44012200 (KG) Non-coniferous wood (e.g. : eucalyptus etc.) in chips or particles

Source: Information and Communication Technology Centre with Cooperation of the Customs Department of Thailand

Acacia wood chip export Vietnam to Lao PDR: 2018-2022 (est)



2022

Quantity: 36,100 GMT

Value: US\$4.6million

Border Gate Declared Unit

Value: US\$129/GMT (Note sharp increase from US\$60 /GMT in 2021)

Average Vietnam FOB Prices

(Q3, 2022): US\$190/BDMT

(Q1, 2023): US\$175/BDMT

Decline reflects the preference for eucalypts for production of DP + cost changes

HS 44012200 (KG) Non-coniferous wood (e.g. : eucalyptus etc.) in chips or particles
Source: Vietnam Customs via Quang Tri Provincial Authorities

Estimates of wood needs to meet known exports

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Sun Paper's wood needs to meet pulp and paper exports to China (,000 tonnes)

	Dissolving Pulp Exports (,000 tonnes)	Est Wood needs cubic metres (@ 5.8 m ³ = 1 dry	BHKP Exports (,000 tonnes)	Est Wood Needs (@ 4.4 m ³ = 1 dry tonne BHKP)	Total Wood Needs to produce exports (m ³)	Wood chip imports from Vietnam (m ³)	Wood chip imports from Thailand (m ³)	Total wood imports from Thailand and Vietnam (m ³)
2018	30	172,434	128	562,355	734,789	620,354	38,366	658,720
2019	214	1,240,307	60	264,885	1,505,192	623,519	404,973	1,028,492
2020	244	1,417,729	54	238,641	1,656,370	493,678	504,383	998,061
2021	250	1,451,369	22	94,884	1,546,253	82,352	942,172	1,024,524
2022E	282	1,637,514	-	-	1,637,514	31,407	1,154,334	1,185,741
								Requirements from Lao domestic sources (2022) 451,773

Source: China Customs via GingKo Consulting

Sun Paper's wood chip imports from Vietnam and Thailand

Acacia wood chip exports Vietnam to Lao PDR (2018 - 2022)					Eucalypt Wood chip exports Thailand to Lao PDR (2018 - 2022)				
Year	Quantity (GMT)	Value (USD)	Quantity (m ³) (1 gmt = 0.87 m ³)	Unit Value (US\$/m ³)	Year	Quantity (GMT)	Value (USD)	Quantity (m ³) (1 gmt = 0.87 m ³)	Unit Value (US\$/m ³)
2018	713,050	\$41,981,190	620,354	68	2018	44,099	\$3,166,480	38,366	83
2019	716,689	\$45,603,246	623,519	73	2019	465,486	\$31,263,144	404,973	77
2020	567,446	\$24,012,142	493,678	49	2020	579,750	\$38,094,028	504,383	76
2021	94,658	\$5,713,651	82,352	69	2021	1,082,956	\$68,525,905	942,172	73
2022 (est)	36,100	\$4,642,344	31,407	148	2022 (est)	1,326,821	\$83,000,538	1,154,334	72

Source: Vietnam Customs

Source: Thai Customs

Note: Assume 1 green metric tonne wood chip= 0.87 m³ wood

Data indicate that, in addition to imports from Thailand and Vietnam, Sun Paper utilises 450,000 m³ of pulp wood from domestic Lao sources to meet current BHKP + DP pulp exports

Wastepaper import needs for Containerboard exports

VALTIP 3

Quantity and Value of Sun Paper's wastepaper imports (AOCC + OCC) (based upon design capacity)

Mill type	Design Capacity (tpa)	Raw material inputs (OCC) (tpa)	Raw material inputs (AOCC) (tpa)	AOCC @ US\$250/tonne delivered)	OCC @ US\$250/tonne delivered)	Total Wastepaper imports (US\$)
Recycled fibre (RCF) Unbleached Recycled Pulp (URP)	400,000	680000			163,200,000	
Containerboard/Packaging Board (PM1)	580000		580000	145,000,000		
Containerboard/Packaging Board (PM2)	420000	420000			100,800,000	
Total Imports		1,100,000	580,000	\$ 145,000,000	\$ 264,000,000	\$ 409,000,000

Recycled products exported to China (Tonnes, Declared Value, and Market Unit values US\$)

Year	RCF/URP Quantity (tonnes)	RCF/URP Declared Value (US\$)	Unit Value (US\$/tonne)	Value at Market rates (US\$/tonne)	Packaging Board Quantity (tonnes)	Packaging Board Declared Value (US\$)	Declared Unit Value (US\$/tonne)	Value at Market rates (US\$/tonne)	Total Quantity (tonnes)	Total declared Value (US\$)	Total Market Value (US\$)
2018	-	0	0	0	-	0	0	0	-	-	-
2019	172,526	65,986,020	382	71,425,764	-	0	0	0	172,526	65,986,020	71,425,764
2020	328,116	121,661,013	371	135,840,024	-	0	0	0	328,116	121,661,013	135,840,024
2021	38,426	14,591,527	380	15,908,364	728,099	451,376,580	620	448,508,984	766,525	465,968,107	464,417,348
2022E	71,850	28,399,536	395	29,745,900	733,726	459,339,195	626	459,312,476	805,576	487,738,731	489,058,376

Estimates of AOCC/OCC needs to match exports

Year	China imports RCF/URP (Quantity, tonnes)	Wastepaper Import Requirements (AOCC/OCC tonnes) (@ 1.7 tonnes = 1 tonne URP)	China Imports of Packaging Board (Quantity, tonnes)	Wastepaper requirements (AOCC/OCC tonnes @ 1.1 tonnes = 1 tonne Packaging board)	Total demand for AOCC + OCC to match production
2021	38426	65,324	728099	800,909	866,233
2022E	71850	122,145	733726	807,099	929,244

Conversion factors need to be ratified and figures balanced against data from Lao Customs for wastepaper imports of AOCC + OCC. Note Thai Customs report Lao containerboard exports to Thailand Jan – Oct 2022 of 446 tonnes worth US\$265,000 = US\$594/tonne) <https://tradereport.moc.go.th/Report/ReportEng.aspx?Report=HarmonizeCommodity&Lang=Eng&ImExType=1&Option=1>

Lao PDR Wastepaper imports: 2022 (Lao Customs)

Country	HS Code 470710			HS Code 470620			HS Code 480524			HS Code 480525		
	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonne)	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonne)	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonne)	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonne)
Brazil	3,341	1,035,643	310									
Canada	90,106	27,959,659	310	5,372	3,856,528	718						
Chile	3,054	900,868	295									
China	9,364	2,909,493	311									
Costa Rica	3,406	1,055,723	310									
Spain	16,074	4,320,462	269									
France	2,991	822,568	275	10,924	8,742,089	800						
Japan	-	-		1,614	1,400,358	868						
Great Britain	11,985	2,857,660	238									
Greece	14,578	4,044,904	277									
Italy	20,596	4,221,890	205									
Mexico	2,695	916,180	340									
Nicaragua	9,666	2,781,112	288									
Netherlands	3,367	909,004	270									
Saudi Arabia	3,537	1,089,402	308									
Thailand	-	-					1,779	1,095,022	616			
USA	730,955	223,396,361	306	14,993	11,574,622	772						
Vietnam	-	-					542	309,830	572	6	4,189	729
Total	925,714	279,220,930	302	32,902	25,573,597	777	2,320	1,404,852	606	6	4,189	729
Total (all Wastepaper)	960,941	306,203,568										

- North America (Canada and USA) remain the largest suppliers of wastepaper (AOCC + OCC)
- Wastepaper imports for 2022 exceed 960,941 tonnes valued at US\$306 million
- Close match with total estimated demand to meet exports (previous slide)
- Total design capacity for recycled fibre requires annual AOCC/OCC inputs of 1.6 million tonnes valued at est. US\$409 million.

Lao PDR Pulp and Paper Exports: 2022 (Lao Customs)

Country	HS 470200 (Dissolving Pulp (DP))			470329 (Bleached Hardwood Kraft Pulp (BH))			HS 470620 (Recycled Pulp (RCF/URP))			HS Code 480525 (Packaging)		
	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonne)	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonne)	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonn)	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonne)
Bangladesh										14,000	9,451,272	675
China	290,414	294,722,764	1,015	10,500	8,505,000	810	70,998	28,420,400	400	429,196	264,472,485	616
Philippines										3,158	1,984,500	628
Thailand										162	81,167	501
United Arab Emirates										55	26,601	480
Vietnam	1,000	1,150,000	1,150							3,032	1,886,063	622
Total (x HS Code)	291,414	295,872,764		10,500	8,505,000		70,998	28,420,400		449,603	277,902,089	
Total (all exports, all countries)	822,515	610,700,253										
Exports to China (all)	801,108	596,120,650										

Lao datasets indicate that Sun Paper's 2022 exports of pulp and paper totalled 801,108 tonnes, valued at US\$596 million

Lao and China Datasets for 2022

HS Codes	Lao Exports (Lao Customs)			Chinese Imports (Chinese Customs)		
	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonne)	Weight (tonnes)	Value (US\$)	Unit Value (US\$/tonne)
HS 470200 (Dissolving Pulp (DP))	290,414	294,722,764	1,015	282,330	283,290,954	1,003
HS 470329 (Bleached Hardwood Kraft Pulp (BHKP))	10,500	8,505,000	810	-	-	-
HS 470620 (Recycled Pulp (RCF/URP))	70,998	28,420,400	400	71,850	28,399,536	395
HS 480525 (Packaging)	429,196	264,472,485	616	733,726	459,339,195	626
Total	801,108	596,120,650		1,087,906	771,029,685	

Despite consistencies in the datasets (e.g. unit values), gaps are noted within Lao datasets. For example:

For 2021, Lao data for imports of HS 4401 2200 woodchips = 0. However, data from Thai Customs (1,082,956 GMT valued at USD68 million) and Vietnam Customs (94,658 valued at USD5.7 million) suggest woodchip imports were significant.

Anomalies exist and between Lao, Thai and Chinese datasets:

- For 2022, Lao data suggest exports of HS 470329 (BHKP) 10,500 tonnes valued at US\$8,505,000. China data = 0.
- 2022 Packaging exports 429,196 tonnes (Lao data) Vs 733,726 tonnes (Chinese data)

Further work and re-examination are needed to resolve import and export anomalies in Lao data for HS Chapters 44, 47 and 48.

Declared value for Imports of eucalypt woodchips from Thailand

EXPORTS OF THAILAND CLASSIFIED BY COMMODITY 2022

HS 44012200 (Kg) Non-coniferous wood (e.g. : eucalyptus etc.) in chips or particles

Country	Nov-22						Jan. - Nov. 2022					
	Quantity (kg)	Quantity (tonnes)	Value (Baht)	Unit Value (baht/tonne)	Unit Value (USD/tonne) @ USD1.00 = THB 33.5	% Share	Quantity (kg)	Quantity (tonnes)	Value (Baht)	Unit Value (baht/tonne)	Unit Value (USD/tonne) @ USD1.00 = THB 33.5	% Share
WORLD	376,378,527	376,379	1,646,560,025	4,375	131	100.00	4,045,840,277	4,045,840	13,178,070,421	3,257	97	100.00
CHINA	105,916,592	105,917	535,268,626	5,054	151	32.51	1,488,768,724	1,488,769	5,624,100,992	3,778	113	42.68
JAPAN	145,299,150	145,299	709,962,606	4,886	146	43.12	1,051,072,170	1,051,072	3,794,722,733	3,610	108	28.80
LAOS	59,800,940	59,801	154,306,380	2,580	77	9.37	1,222,647,925	1,222,648	2,740,449,152	2,241	67	20.80
TAIWAN	20	0	38	1,900	57	0.00	168,644,753	168,645	567,951,836	3,368	101	4.31
INDONESIA	65,361,790	65,362	247,017,182	3,779	113	15.00	114,706,670	114,707	450,840,515	3,930	117	3.42
MACAO	35	0	5,193	148,371	4,429	0.00	35	0	5,193	148,371	4,429	0.00

SOURCE : INFORMATION AND COMMUNICATION TECHNOLOGY CENTER WITH COOPERATION OF THE CUSTOMS DEPARTMENT . Accessed at: http://www.ops3.moc.go.th/infor/hs/export/export_commodity/report.asp

Quoted Unit values (November 2022) for exports to China (US\$151/BDMT) and Japan (US\$146/BDMT) differ from those to Lao PDR (US\$77/tonne). Possible explanation relates to quoted prices at sea ports and land borders and conversion factors from GMT to BDMT.

Sun Paper's investment in Lao PDR makes commercial good sense, responding to strong long-term regional and Chinese demands for dissolving pulp, recycled fibre, and containerboard.

- Containerboard demand in China and the region will remain strong in the foreseeable future
- Demand for URP/RCF wood pulp will remain strong (especially in China)
- Demand for Dissolving Pulp (DP) is expanding in China and the region.
- BHKP is an important component for Sun Paper's overall business and production can be managed as needed.
- Wood chip imports will remain an integral part of Sun Paper's business model
- Thailand (eucalypts) and Vietnam (acacia) will remain the dominant source of supply for 10+ years with Lao domestic supply comprising ~20% wood furnish.
- The RCF and containerboard sections of the business will remain based primarily upon North American sources of AOCC and OCC grades of waste paper with smaller amounts from several other suppliers.
- Export figures suggest that pulping and containerboard facilities are operating under capacity.
- Further work and re-examination are required for Lao Customs data to increase data consistency and resolve import and export anomalies for HS Chapters 44, 47 and 48. Clarity required for Thai export data for wood chips.

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BDMT	Bone Dry Metric Tonne (commonly used in the global woodchip trade)	HS	Harmonised Scheme international trade
GMT	Green Metric Tonne (normally measured over a weighbridge)	CIF	Cost Insurance Freight
m³	Cubic metre (notionally 2.1 m ³ = 1 BDMT)	FOB	Freight on Board
BHKP	Bleached Hardwood Kraft Pulp	tpa	tonnes per annum
DP	Dissolving Pulp	PM	Paper Machine
RCF	Recycled Fibre	URP	Unbleached Recycled Fibre Pulp
OCC	Old Corrugated Containers. Used boxes, containers or other packaging made from unbleached, un-waxed paper with a ruffled, or corrugated, inner liner. These corrugated materials, also called containerboard	AOCC	American Old Corrugated Containers . North American OCC with higher proportions of virgin fibre

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