

UNEP-CI PROJECT (2017-2019)

National Cleaner Production Centre,
66/1,
Dewala Road,
Nugegoda.



Inventory Tables for Life Cycle Inventory (LCI) Analysis – RiceProcessing Year 2015 - 2017

Factory Details

Name :
Address :
District :
Province :
GPS Location : Latitude Longitude
Tel. No. :

Contact Person's Details

Name :
Designation :
Tel. No. :
Email Address :

Field Assistant's Details

Name :
Tel. No. :
Email Address :

.....

Field Assistant's Signature

.....

Visited Date

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1)Plant layout

Plant layout of factory should be included here. Sample plant layout has been provided in **Appendix** section.

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2) PROCESS FLOW DIAGRAM

Machine wise process flow diagram should be included here. Sample process flow diagram has been provided in **Appendix** section.

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3) PRELIMINARY INFORMATION

1) What is the type of rice produced?

- Raw rice Parboiled rice Parboiled &Raw rice

2) What is the technology used in the parboiling plant?

- Traditional (Sun drying) Modern (Online) Other (Specify).....

3) What are the different types of packaging materials used in the factory?

.....

4) Is there any other electricity generating methods in addition to the national grid?

- Generator (Fuel Type) CEB electricity Other energy

5) What are the different type of grades of rice produced?

.....
.....

6) What are the fuels used to generate hot air and steam?

- Biomass (Specify) Fuel (Specify) Electricity

7) What is the source of water supply?

- Water board supply Deep well River Other (Specify).....

8) Which internal transporting methods used in factory?

- Conveyors (Specify) Elevators (Specify)

9) What are the technical, social and environmental problems faced by the factory?

.....
.....
.....
.....
.....
.....

10) How many permanent and contract employees attached to the factory?

.....
.....

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4.1) TRANSPORT INFORMATION – PADDY COLLECTION SOURCE

Supplier/ Collection Point	Source index	Location	Distance (km)
Junasinghe/Padaviya	xx	Padavi Parakramapura	140

√ Extensible

HINTS:

- Source (District/Collection Point) to Destination (Factory) should be taken based on route direction not aerial distance.
- Google map on area or vehicle meter reading can be used to measure the distance.
- Own indexing syntax can be used to prepare the list.

4.2) TRANSPORT INFORMATION – PADDY TRANSPORTING VEHICLE DETAILS

Time Duration : 1 Week

Vehicle Type	Brand Name	Vehicle Model	Vehicle Reg. #	Load Capacity	Fuel Type	Ownership of Vehicle`		
						Own Asset	Hired	Other
Ex: Tipper	TATA	xxx	62-5060	1 Cube	Diesel			

√ Extensible

HINTS:

- Details of all vehicles which are arrived to factory during 1 week should be recorded.
- Ownership of the vehicle should be concerned according to the factory perspective.
- Own indexing syntax can be used to prepare the list.

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5.1) TRANSPORT INFORMATION – RESOURCE COLLECTION SOURCE

Resource	Collection Point	Source index	Location	Distance (km)
Ex:Biomass – Husk	xx	BM1	Rabawa	50

√ Extendable

HINTS:

- Consider fuel types (ex: biomass, diesel) and packaging materials (ex: sacks bag,s) for
- Source (District/Collection Point) to Destination (Factory) should be taken based on route direction not aerial distance.
- Google map on area or vehicle meter reading can be used to measure the distance.
- Own indexing syntax can be used to prepare the list.
- If one resource is transported from different locations include all sources under such resource category.

5.2) TRANSPORT INFORMATION – RESOURCE TRANSPORTING VEHICLE DETAILS

Type of Resource	Vehicle Model	Vehicle Reg. #	Load Capacity	Load Allocation	Ownership of Vehicle`		
					Own Asset	Hired	Other
Ex:Diesel	xxxxxx	62-5060	13200L	80 %			√

√ Extendable

HINTS:

- Most commonly transported vehicle should be considered for particular resource transportation
- Ownership of the vehicle should be concerned according to the factory perspective.
- Own indexing syntax can be used to prepare the list.

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6.1) PADDY INPUT INFORMATION (DAILY BASIS)

Time Duration: October, November, December of 2017

Last 30 days:

#	Date	Daily processing data /(kg)		
		Paddy pre cleaning	Parboiling Plant	Rice milling plant (Raw & Parboiled)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

√ Extendable for other months

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6.2) PADDY INPUT INFORMATION (MONTHLY BASIS)

Duration: Year 2017

Month	Monthly processing data / (kg)		
	Paddy pre cleaning	Parboiling Plant	Rice milling plant (Raw & Parboiled)
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

6.3) PADDY INPUT INFORMATION (YEARLY BASIS)

Duration: 3 Years

Year	Yearly production data / (kg)		
	Paddy pre cleaning	Parboiling Plant	Rice milling plant (Raw & Parboiled)
2015			
2016			
2017			

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7.1) ENERGY & RESOURCE CONSUMPTION INFORMATION (MONTHLY BASIS)

Time Duration : Year 2017

Month	Monthly Resource Consumption – 2017							
	Biomass(.....)		Re.1		Re. 2		Water for parboiling	
	Units	Rs.	Units	Rs.	Units	Rs.	L	Rs.
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								

7.2) ENERGY & RESOURCE CONSUMPTION INFORMATION (YEARLY BASIS)

Time Duration : 3 Years

Year	Yearly Resource Consumption							
	Biomass(.....)		Re. 1		Re. 2		Water for parboiling	
	Units	Rs.	Units	Rs.	Units	Rs.	L	Rs.
2015								
2016								
2017								

Energy types using in factory

- Husk (Specify)
 Diesel
 Kerosene
 Other (Specify)

Water sources used for factory

- Water board supply
 Deep well
 Stream
 Other

If water pumps are used to pumping water, please provide following information.

Parameter	Unit	Amount
Total Power	kW/HP	
Flow rate	L/h	
Frequency	Hrs/day	

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8.1) ELECTRICITY BILL INFORMATION (MONTHLY BASIS)

Time Duration : Year 2017

Monthly Electricity Bill Information – Year 2017					Generator		Other Electricity (kWh)	
Month	Consumption (kWh)				kVA	Units (kWh)		Fuel (L)
	Peak	Day	Off-Peak	Total				
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								

8.2) ELECTRICITY BILL INFORMATION (YEARLY BASIS)

Time Duration : 3 Years

Yearly Electricity Bill Information					Generator		Other Electricity (kWh)	
Year	Consumption (kWh)				kVA	Units (kWh)		Fuel (L)
	Peak	Day	Off-Peak	Total				
2015								
2016								
2017								

Electricity sources using in factory

- National Grid Supply
- Generator
- Solar Energy
- Other (Specify)

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9.1) PRODUCTION DATA INFORMATION (DAILY BASIS)

Time Duration : October, November, December of 2017

Selected Month :

Daily Section wise production data (kg/day or kg/hour)									
#	Date	Paddy cleaning	Parboiling	Husk separator	Paddy separator	Recycle amount %	DE-stoning	Polishing	Grading
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

√ Extensible for other months

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9.2) PRODUCTION DATA INFORMATION (MONTHLY BASIS)

Time Duration : 1 Year

Monthly production data (kg)								
Month	Paddy cleaning	Parboiling	Husk separator	Paddy separator	Recycle amount %	DE-stoning	Polishing	Grading
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								

9.3) PRODUCTION DATA INFORMATION (YEARLY BASIS)

Duration : 3 Years

Yearly production data (kg)								
Year	Paddy cleaning	Parboiling	Husk separator	Paddy separator	Recycle amount %	DE-stoning	Polishing	Grading
2015								
2016								
2017								

HINTS:

- Sections should be divided as Paddy clean, Parboiling, Husk separator, Paddy separator, DE-stone, Polishing, Grading.

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11.1) SECTIONWISEWORKING HOURS RELATED INFORMATION (BATCH BASIS)- 1

Time Duration: 1 week

No	Parameter	Unit	Parboiling			
			Paddy pre cleaning	Soaking	Steaming	Drying
	Start Time	Date/h:min				
	End Time	Date/h:min				
	Process Amount	kg				
	Start Time	Date/h:min				
	End Time	Date/h:min				
	Process Amount	kg				
	Start Time	Date/h:min				
	End Time	Date/h:min				
	Process Amount	kg				
	Start Time	Date/h:min				
	End Time	Date/h:min				
	Process Amount	kg				
	Start Time	Date/h:min				
	End Time	Date/h:min				
	Process Amount	kg				
	Start Time	Date/h:min				
	End Time	Date/h:min				
	Process Amount	Kg				
	Start Time	Date/h:min				
	End Time	Date/h:min				
	Process Amount	kg				
	Start Time	Date/h:min				
	End Time	Date/h:min				
	Process Amount	kg				
	Start Time	Date/h:min				
	End Time	Date/h:min				
	Process Amount	Kg				

√ Extendable for rest of batches

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11.2) SECTION WISE WORKING HOURS RELATED INFORMATION (MONTHLY BASIS)-1

Time Duration: 1 Year

Month	Monthly Total Working Hours (2017)			
	Paddy pre cleaning	Soaking	Steaming	Drying
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

11.3) SECTION WISE WORKING HOURS RELATED INFORMATION (YEARLY BASIS)-1

Duration : 3 Years

Year	Yearly Total Working Hours			
	Paddy pre cleaning	Soaking	Steaming	Drying
2015				
2016				
2017				

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11.4) SECTIONWISE WORKING HOURS RELATED INFORMATION (DAILY BASIS) - 2

No	Parameter	Unit	Section wise data				
			Husk separation	Paddy separation	DE-Stoning	Polishing	Grading
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	kg					
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	kg					
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	kg					
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	kg					
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	kg					
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	kg					
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	Kg					
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	kg					
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	kg					
	Start Time	Date/h:min					
	End Time	Date/h:min					
	Processed Amount	Kg					



Extendable for rest of trips

HINTS:

- Take the start time just with switching on the motor
- Take the end time just with the switching off the motor

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11.5) SECTION WISE WORKING HOURS RELATED INFORMATION (MONTHLY BASIS)-2

Time Duration: 1 Year

Month	Monthly Total Working Hours (2017)				
	Husk separator	Paddy separator	DE-Stoning	Polishing	Grading
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

11.6) SECTION WISE WORKING HOURS RELATED INFORMATION (YEARLY BASIS)-2

Time Duration: 1 Year

Year	Yearly Total Working Hours				
	Husk separator	Paddy separator	DE-Stoning	Polishing	Grading
2015					
2016					
2017					

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12.1) OUTPUT WASTE INFORMATION (MONTHLY BASIS)

Time Duration : Year 2017

Output waste information data – Year 2017				
Month	Output category			
	Husk (kg or %)	Broken rice(kg or %)	Ash(kg or %)	Other
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

12.2) OUTPUT WASTE INFORMATION (YEARLY BASIS)

Duration : 3 Years

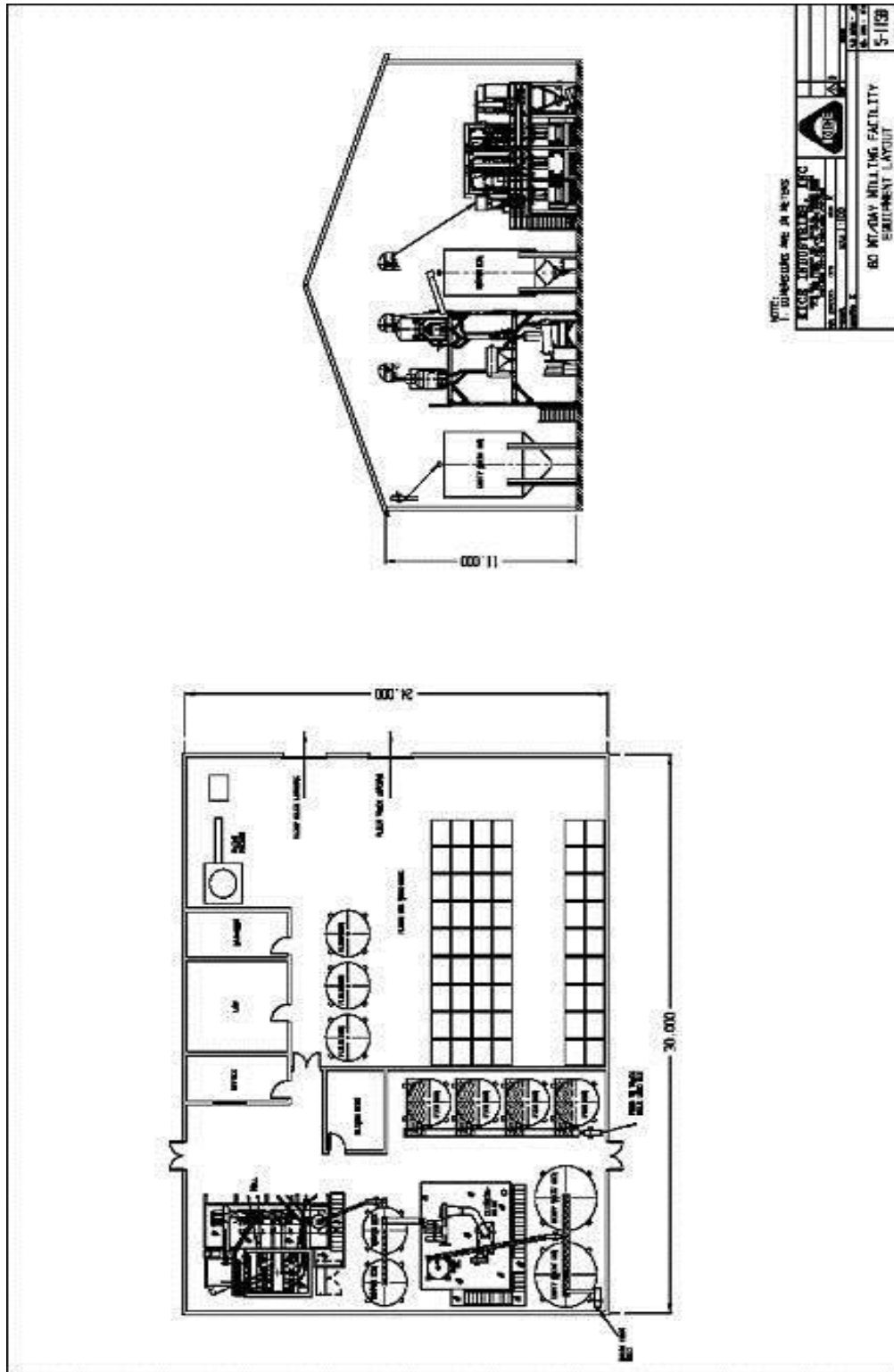
Output waste information data – Year 2017				
Year	Output category			
	Husk (kg or %)	Broken rice(kg or %)	Ash(kg or %)	Other
2015				
2016				
2017				

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APPENDIX

EX: Plant layout



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EX: Process flow diagram

