The Sustainable Diner Cost-Benefit Monitoring Tool

Instruction Manual

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Contents

Energy

Water

Waste

Sourcing

SCP Investments

Summarized Data

Calculator

FAQs

Scan to learn more.
bit.ly/SCPProject

Introduction

Welcome!

Thank you for using WWF-Philippines' The Sustainable Diner Cost-Benefit Monitoring Tool (TSD-CB Monitoring Tool), co-developed with the Wallace Business Forum.

The overriding goal for adopting sustainable consumption and production (SCP) practices is to support sustainable development, which is the efficient and responsible use of resources (creating less pollution and waste) so they remain abundant for present and future generations in their pursuit for a better quality of life. However, adopting SCP practices can be daunting, especially for businesses looking to balance social responsibility with business viability.

One of the ways to help is through the use of technology as a tool to enable businesses to easily track and measure the benefits and costs of adopting specific SCP practices into their business operations. The TSD-CB Monitoring Tool is one such tool developed specifically for food service establishments in the Philippines. It was created using Microsoft Excel, a program already being widely used in many businesses, to cut down on upfront costs and assist in ease of integration of SCP practices monitoring into the regular workflow of restaurants.

The TSD-CB Monitoring Tool was designed based on the learnings from a Cost Benefit Analysis Study wherein it was confirmed that SCP practices in four (4) categories – Energy, Water, Waste Management, and Sourcing – are being applied or considered by restaurants in the Philippines. The TSD-CB Monitoring Tool is meant to aid these restaurants in their planning and decision-making by giving them an easy-to-use tool to track and analyze the costs and benefits of applying SCP practices.

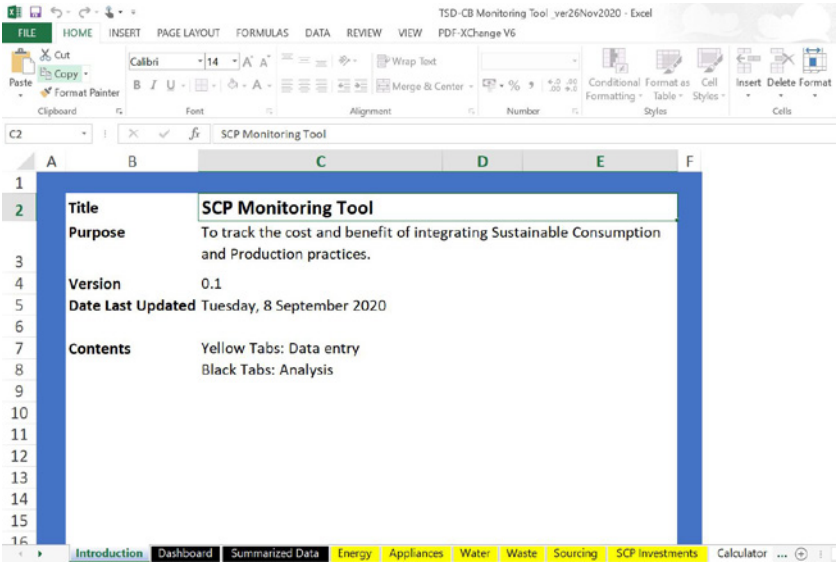
This instruction manual was prepared to support the restaurants' use of the TSD-CB Monitoring Tool.

Let's Get Started!

Watch the instructional video at **bit.ly/CBToolVideo** or scan the QR code.

Download the TSD-CB Monitoring Tool at **bit.ly/CBTool.**

Read this manual or access the e-copy at **bit.ly/CBToolManual**.



Definition of Terms

Bokashi	A convenient and quick way of converting food waste into fertilizer using effective microbes and without needing oxygen.
Contract Farming	An agreement between restaurants and farms wherein restaurants provide farms with some of the inputs to grow specific produce and then sell the produce back to the restaurants at an agreed upon price.
Cost Benefit Analysis	Cost benefit analysis (CBA) is the determination of the benefits of implementing sustainability plans into day-to-day business operations of a fully functioning restaurant, weighed against their corresponding costs.
Cost Benefit Monitoring Tool	The technological intervention applied in aid of CBA and project sustainability. In this case, this is the utilization of an excel worksheet to efficiently track and monitor specific indicators meant to measure the costs and benefits of the application of SCP principles into business operations.
Cost of CO_2 Emissions	The measure of the economic and social harm of carbon emissions, expressed as the dollar value of the total damages from emitting one ton of carbon dioxide into the atmosphere. The current central estimate of the social cost of carbon is over $50 per ton in today's dollars.

Equipment (a.k.a System Cost)	Capital expenditure stemming from the implementation of an SCP practice. Example – water filtering system.
Food Waste	This pertains to unused and unconsumed food. This consists of kitchen waste, either uncooked or spoiled raw food, and dining waste, the served meal not consumed by the customers or leftovers.
Import Replacement	The process of replacing the purchase of imported raw food ingredients from outside the local community or city where the restaurant is located, to a source within the restaurant's city or province. The practice of reducing the travel distance of the raw food ingredient source to the kitchen.
Labor (a.k.a Manpower)	All staff and management involved in the execution and monitoring of the SCP practice.
Local Sourcing	The sourcing, purchasing, or procurement of food, ingredients, and other consumable products from within a specific radius (distance) from where they will be used or sourced, or from a given geographical area.
Material expense	All consumable parts that must be regularly replaced or purchased to properly implement or execute the SCP practice. For example, filters for the water purification system.

Own Farm Production	Raw food ingredients sourced by the kitchen from own farms located within restaurant premises or within short-travel distance from farm to kitchen (no air travel).
Repurposed Food	Food waste that is recycled for another use – usually as fertilizer or animal feed.
SCP Investments	The cost of adopting and implementing an SCP practice. Includes labor cost, equipment, and material costs.

Acronyms

CBA	Cost Benefit Analysis
CO_2	Carbon Dioxide
KWH	Kilowatt per Hour
H_2O	Water
M^3	Cubic Meters
PHP	Philippine Peso
SCP	Sustainable Consumption and Production
SQM	Square Meter
TSD-CB	The Sustainable Diner Cost-Benefit
USD	United States Dollar

Parts of the Monitoring Tool

The TSD-CB Monitoring Tool contains 11 tabs or sheets, namely:

1. Introduction
2. Dashboard
3. Summarized Data
4. Energy
5. Appliances
6. Water
7. Waste
8. Sourcing
9. SCP Investments
10. Calculator
11. Data Tables (for programmers)

Restaurants are expected to use tabs 1-10 of the TSD-CB Monitoring Tool. The 11th tab or worksheet, entitled Data Tables, is for programming or data analytics.

Color Codes

The TSD-CB Monitoring Tool contains tabs or sheets that have different colors to help users navigate more easily and guide them in determining the level of input needed from them for the given tab. The color legend is elaborated below.

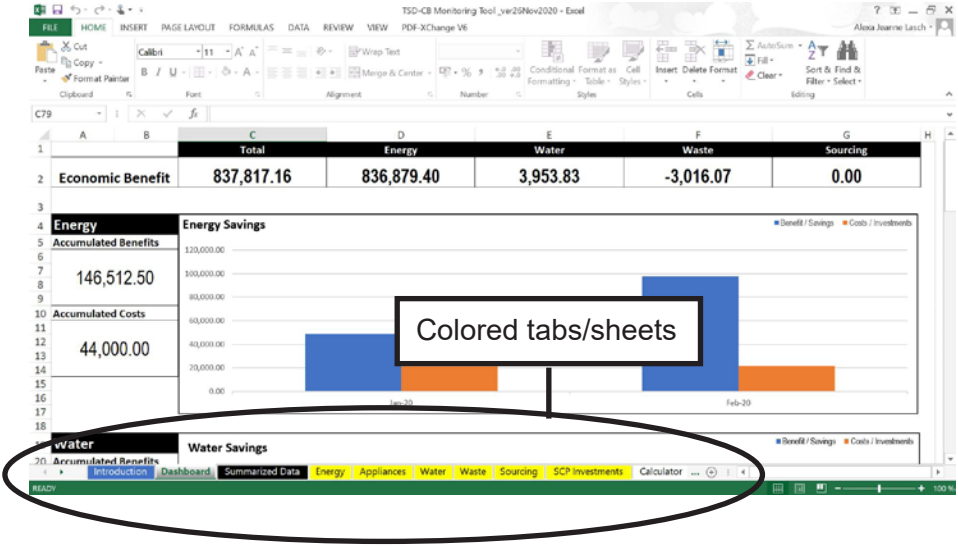
Tabs and Sheets

Blue – Action needed. User first step.

Yellow – Action needed. Users need to encode data in this section for the tool to function.

Black – Analytics. No action needed. These pages contain summarized insights based on data/information supplied in yellow colored tabs.

White – Support tool for users.

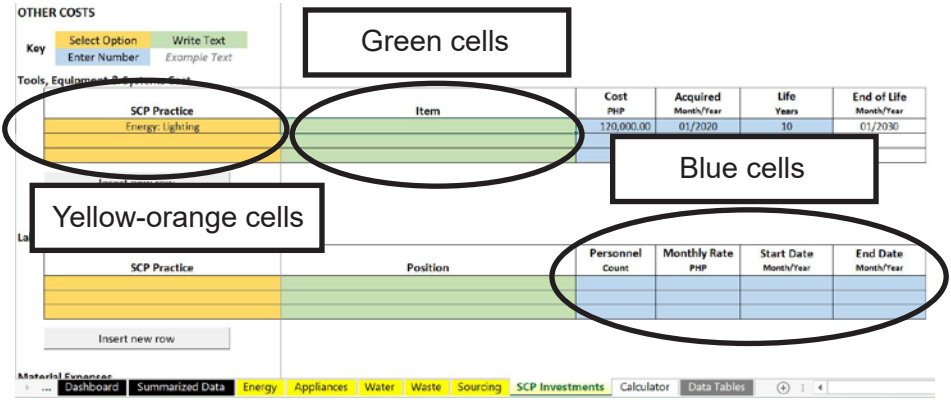


Cells

Yellow-orange – Action needed. Drop down selection.

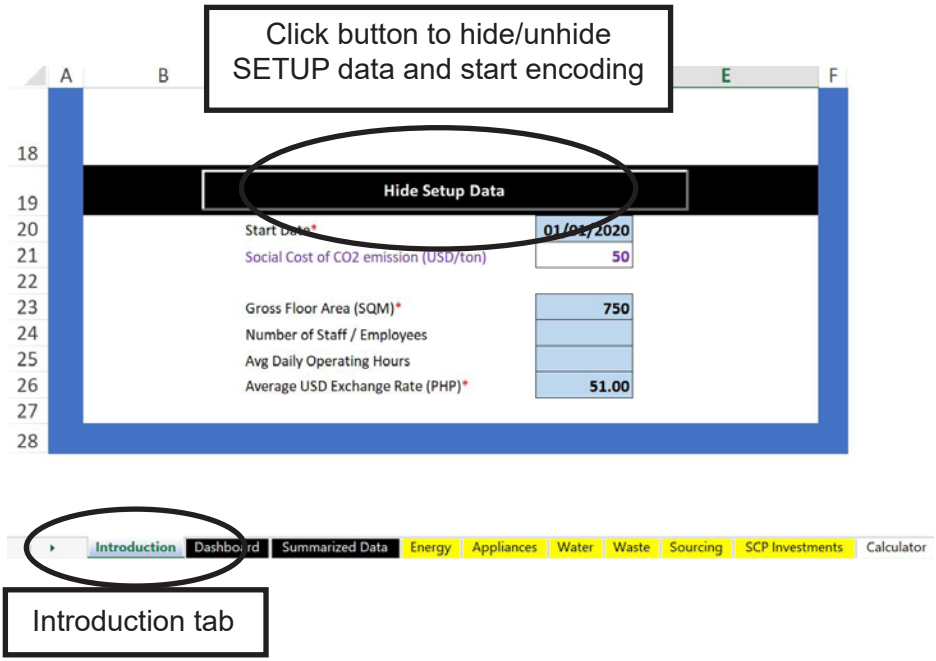
Blue – Action needed. Enter number data.

Green – Action needed. Enter text data.



Setting Up

Step one in using the TSD-CB Monitoring Tool is the **encoding of the SETUP DATA** found in the blue colored tab entitled, “Introduction”.



The red asterisk (*) means that encoding a number in the blue cell is required. The other cells without asterisk are **optional**. The white cell with violet text called Social Cost of CO_2 emission is provided by the TSD-CB Monitoring Tool and is based on existing studies.

The Sustainable Consumption and Production (SCP) Practice Categories

The TSD-CB monitoring tool tracks data on **four (4) SCP practice categories – Energy, Water, Waste Management, and Sourcing**. Each category has a dedicated input sheet in the excel-based tool and users need to encode the relevant information to determine the cost and benefit of integrating that particular SCP practice into the business operations of their food service establishment.

Energy

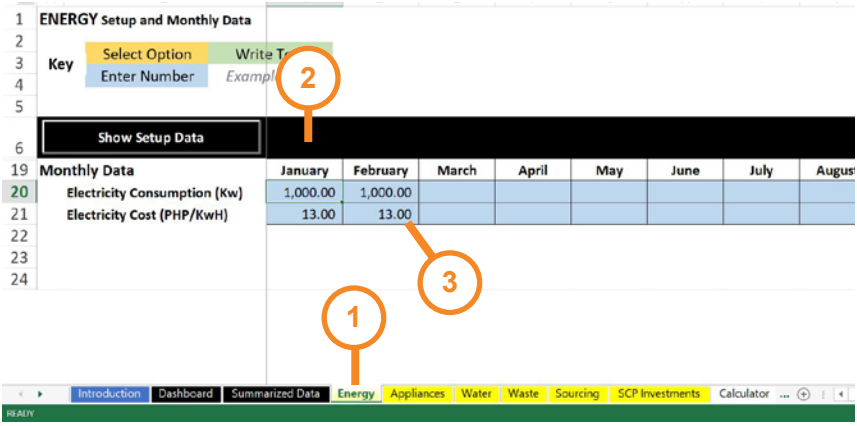
The benefits of SCP practices in **Energy** is recorded and quantified in the monitoring tool by encoding relevant information in the two yellow-colored excel sheets marked “Energy” and “Appliances”.

Energy [Mandatory]

The Energy sheet/tab requires the encoding of the energy setup data consisting of **Electricity Consumption (a)**, and **Electricity Cost (b)**. Both of these are found in the monthly electric bill given by electricity distribution companies, such as MERALCO or VECO, etc.

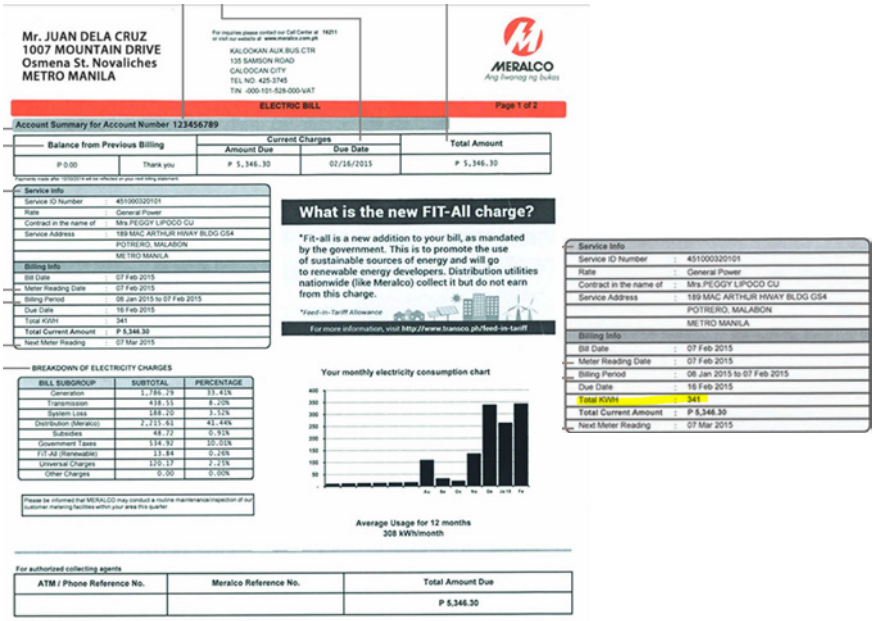
How to input data on the Energy Tab:

1. Click on the **Energy** tab.
2. Encode **Electricity Consumption (a)** on the cell under the corresponding month.



3. Encode **Electricity Cost (b)** on the cell under the corresponding month.

Sample electricity bill that shows where (a) and (b) could be found:



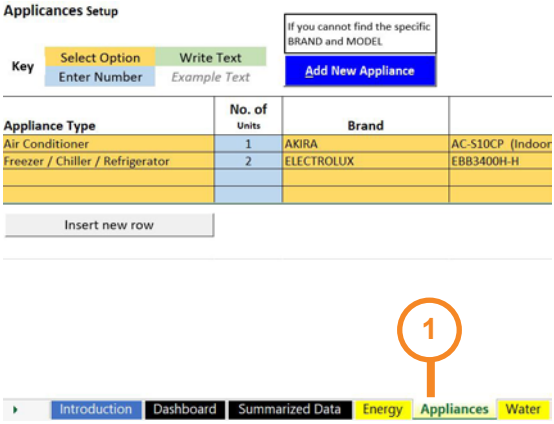
Source: Meralco (https://biz.meralco.com.ph/billings-and-payments/understanding-your-bill)

Appliances

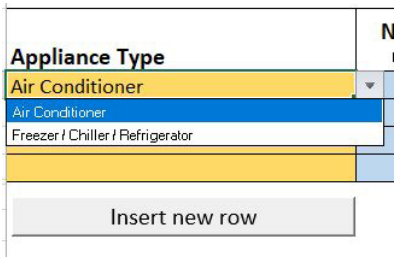
An important aspect of computing the benefits of energy-related SCP practices is the identification of the main appliances in a food service establishment that consumes the most energy. Based on research, four (4) types of electrical appliances in food service establishments commonly consume the most energy. These are air conditioners, freezers, chillers, and refrigerators.

How to input data on the Appliances Tab:

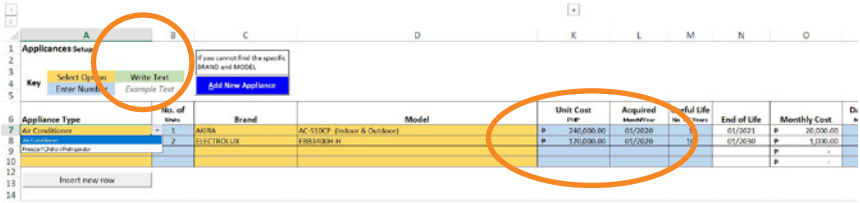
1. Click on the **Appliances** Tab.



2. Fill out the **yellow-orange cells** by clicking on the drop down list to choose the appropriate information (Appliance Type, Brand, Model).



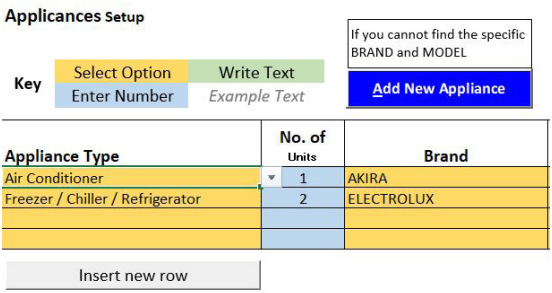
3. Fill out the **blue cells** by encoding the required information.



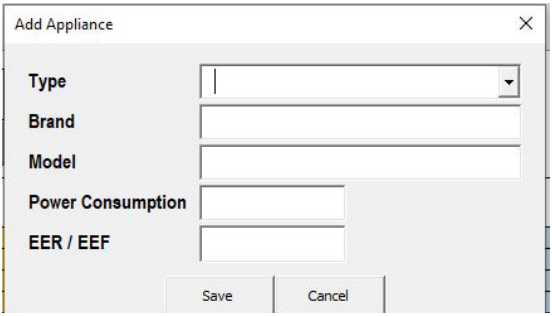
Blue cells need data input

How to Add New Appliance if the Appliance Brand or Model is not found in the drop-down list:

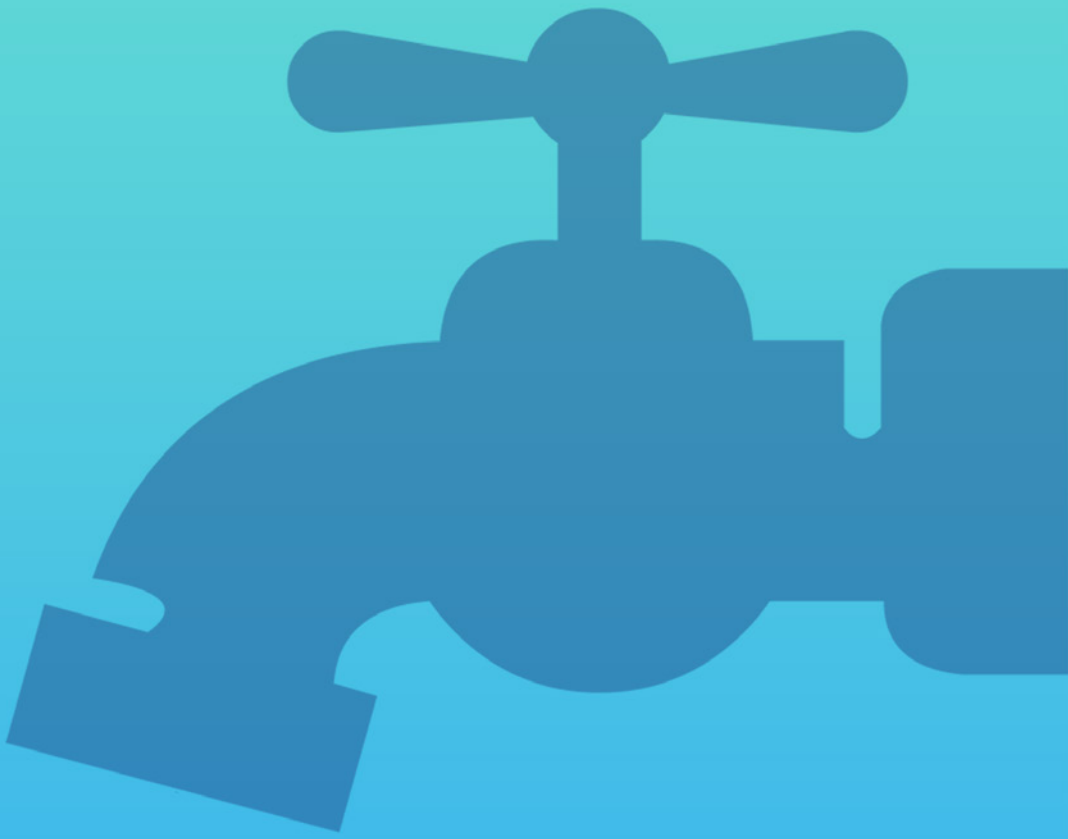
1. Click on **Add New Appliance**.



2. A dialog box will appear. Fill-out with the necessary information.



3. Click **Save**. Then proceed with filling out the monthly log.



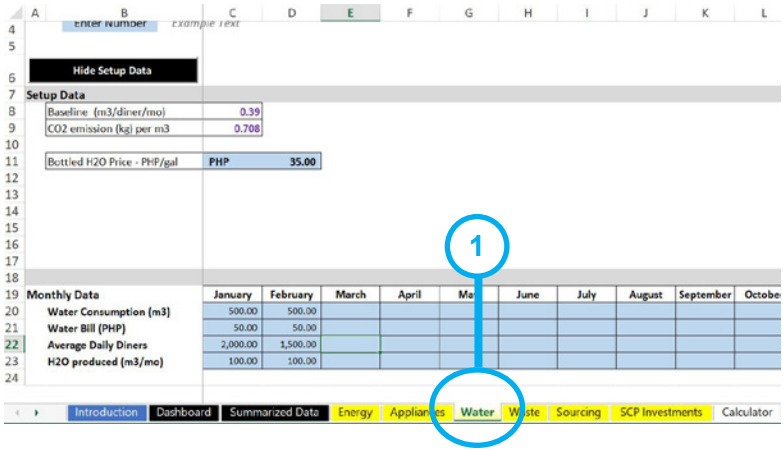
Water

The yellow colored sheet named “**Water**” monitors the benefits and cost of applying SCP practices when using water.

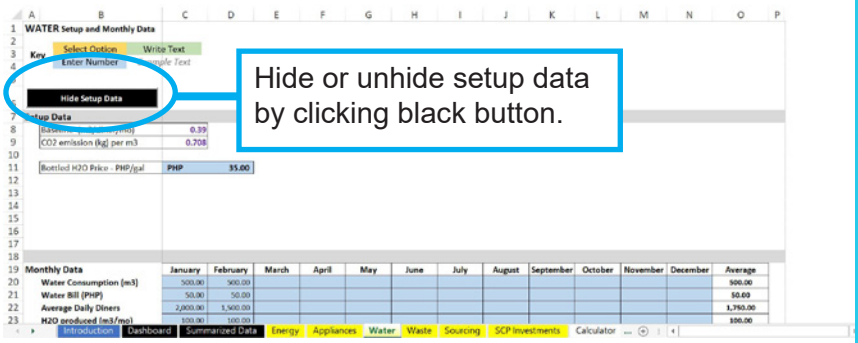
Water [Mandatory]

How to input data on the **Water** Tab:

1. Click on the **Water** Tab.

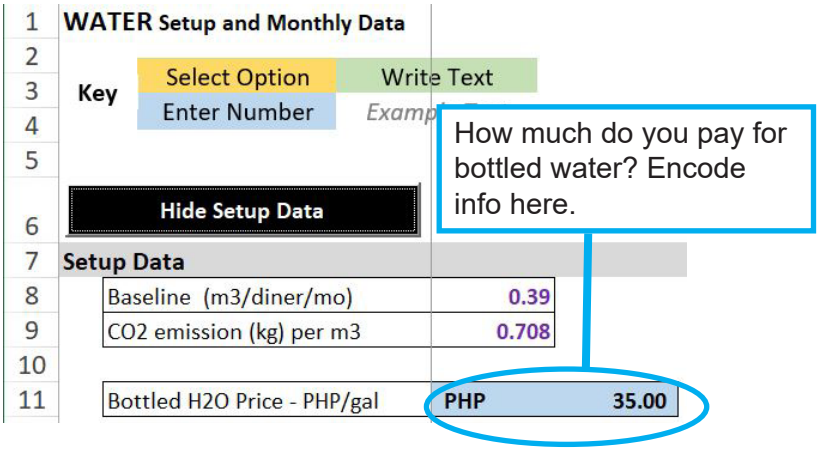


2. Encode **Setup Data**: Click Show Setup Data.

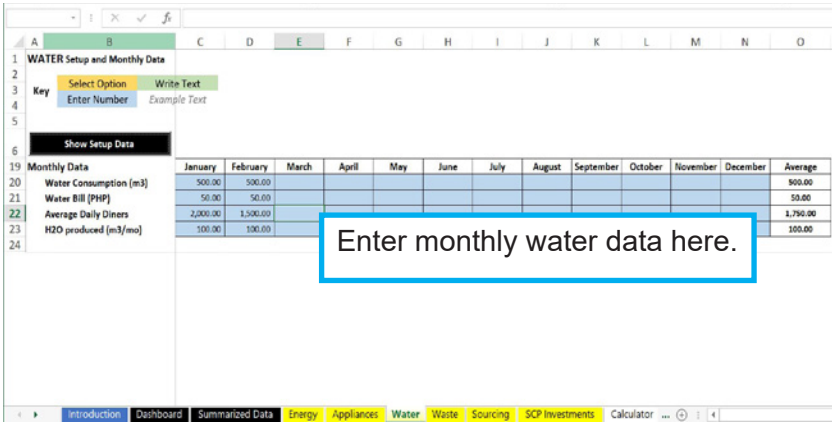


3. Encode the price of bottled water purchased in the blue box.

The purchase price of bottled water per gallon can be the average market purchase price per year, or the actual average purchase price per year based on accounting or financial records.

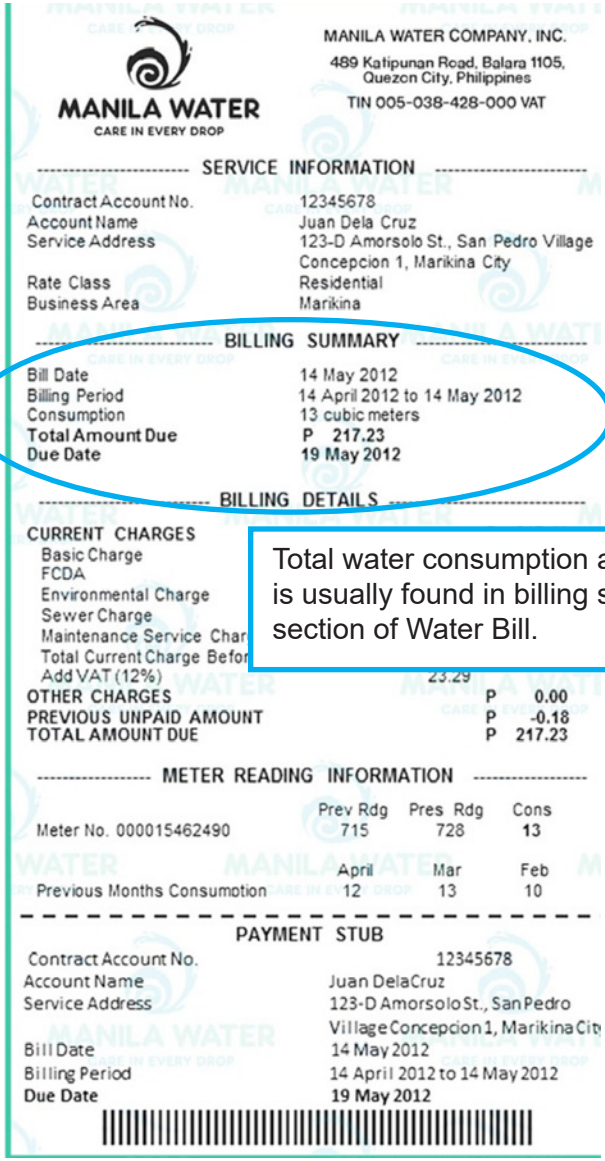


4. Enter monthly data in the corresponding blue boxes.



Where to find Water Consumption and Water Bill using monthly bill from water provider?

Here's a sample water bill from a water provider:



MANILA WATER
CARE IN EVERY DROP

MANILA WATER COMPANY, INC.
489 Katipunan Road, Balara 1105,
Quezon City, Philippines
TIN 005-038-428-000 VAT

SERVICE INFORMATION

Contract Account No.	12345678
Account Name	Juan Dela Cruz
Service Address	123-D Amorsolo St., San Pedro Village Concepcion 1, Marikina City
Rate Class	Residential
Business Area	Marikina

BILLING SUMMARY

Bill Date	14 May 2012
Billing Period	14 April 2012 to 14 May 2012
Consumption	13 cubic meters
Total Amount Due	**P 217.23**
Due Date	**19 May 2012**

BILLING DETAILS

CURRENT CHARGES	
Basic Charge	
FCDA	
Environmental Charge	
Sewer Charge	
Maintenance Service Char	
Total Current Charge Befor	
Add VAT (12%)	23.29
OTHER CHARGES	P 0.00
PREVIOUS UNPAID AMOUNT	P -0.18
TOTAL AMOUNT DUE	P 217.23

Total water consumption and bill is usually found in billing summary section of Water Bill.

METER READING INFORMATION

	Prev Rdg	Pres Rdg	Cons
Meter No. 000015462490	715	728	13

	April	Mar	Feb
Previous Months Consumption	12	13	10

PAYMENT STUB

Contract Account No.	12345678
Account Name	Juan DelaCruz
Service Address	123-D Amorsolo St., San Pedro Village Concepcion 1, Marikina City
Bill Date	14 May 2012
Billing Period	14 April 2012 to 14 May 2012
Due Date	**19 May 2012**

Waste

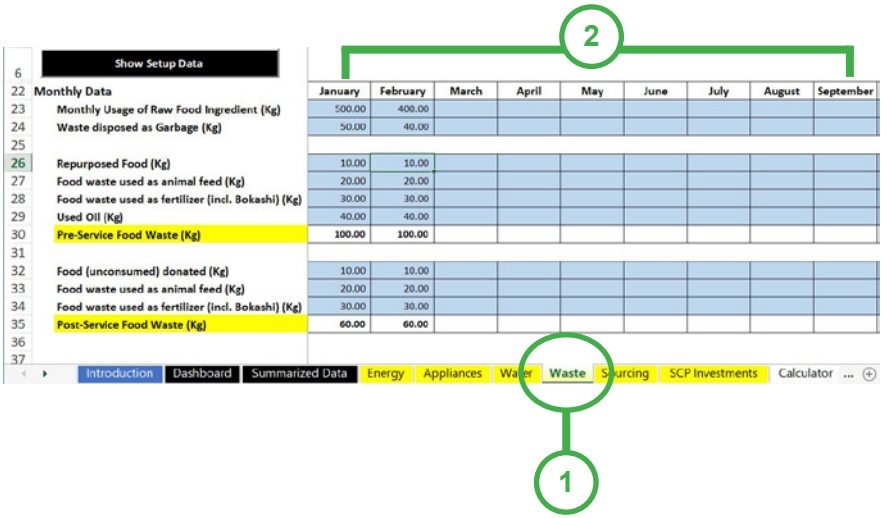
The yellow colored sheet named “**Waste**” monitors the benefits and cost of applying SCP practices when managing waste.

Waste [Mandatory]

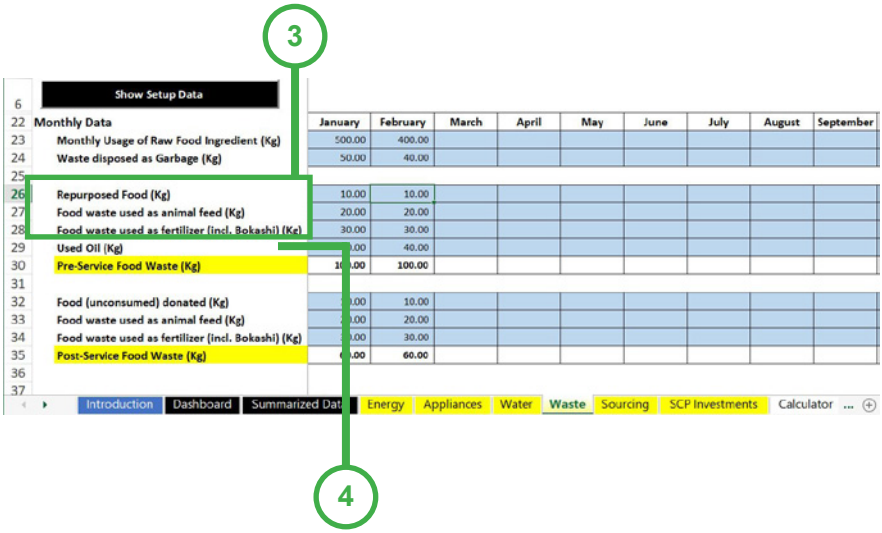
How to input data on the **Waste** Tab:

1. Click on the **Waste** Tab.

2. Enter information in mandatory fields: **Monthly Usage of Raw Food Ingredient** and **Waste Disposed as Garbage**. Encode data in blue-colored cells under the corresponding month.

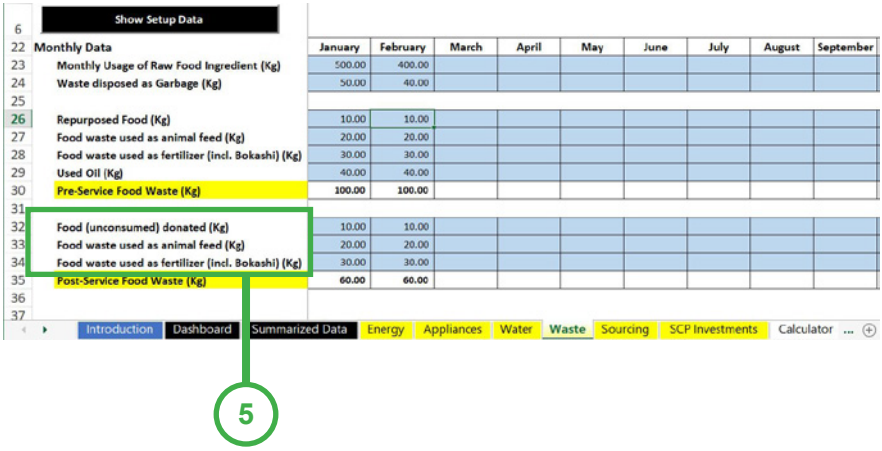


3. Enter information in optional fields: **Repurposed Food, Food waste used as animal feed, Food waste used as fertilizer**. Only input if this SCP practice is being applied in the restaurant. Otherwise, encode “0”.



4. The data entry for **Used Oil** is mandatory. Enter information in the blue field.

5. Enter optional information on **Food (unconsumed) donated, Food waste used as animal feed and Food waste used as fertilizer (e.g. Bokashi)**. Only input if the SCP practice is being applied in the restaurant. Otherwise, encode “0”.



	Show Setup Data									
22	Monthly Data	January	February	March	April	May	June	July	August	September
23	Monthly Usage of Raw Food Ingredient (Kg)	500.00	400.00							
24	Waste disposed as Garbage (Kg)	50.00	40.00							
25										
26	Repurposed Food (Kg)	10.00	10.00							
27	Food waste used as animal feed (Kg)	20.00	20.00							
28	Food waste used as fertilizer (incl. Bokashi) (Kg)	30.00	30.00							
29	Used Oil (Kg)	40.00	40.00							
30	Pre-Service Food Waste (Kg)	100.00	100.00							
31										
32	Food (unconsumed) donated (Kg)	10.00	10.00							
33	Food waste used as animal feed (Kg)	20.00	20.00							
34	Food waste used as fertilizer (incl. Bokashi) (Kg)	30.00	30.00							
35	Post-Service Food Waste (Kg)	60.00	60.00							
36										
37										

Introduction | Dashboard | Summarized Data | Energy | Appliances | Water | Waste | Sourcing | SCP Investments | Calculator

5

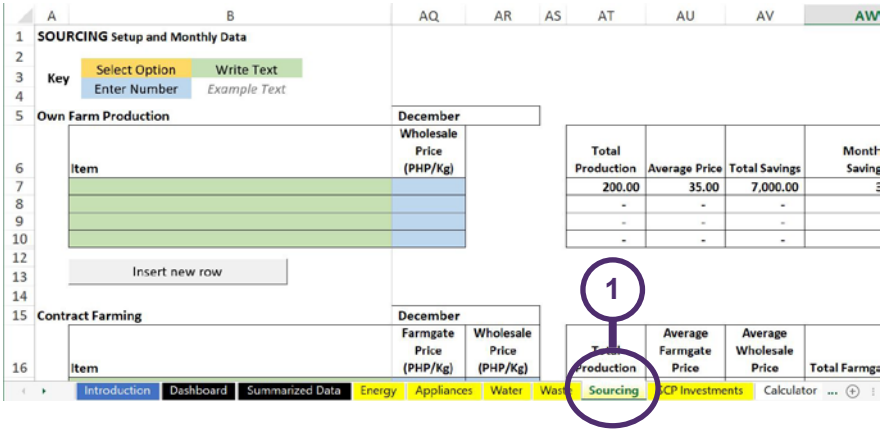
Sourcing

The yellow-colored sheet named “**Sourcing**” monitors the benefits and costs of applying SCP practices in sourcing raw food ingredients.

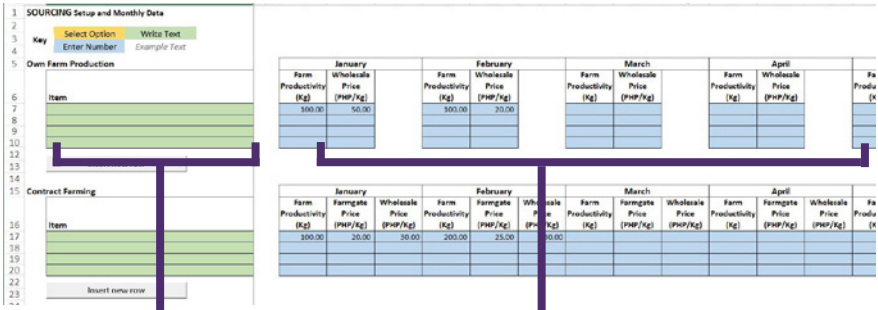
Sourcing [Mandatory]

How to input data on the **Sourcing** Tab:

1. Click on the **Sourcing** Tab.



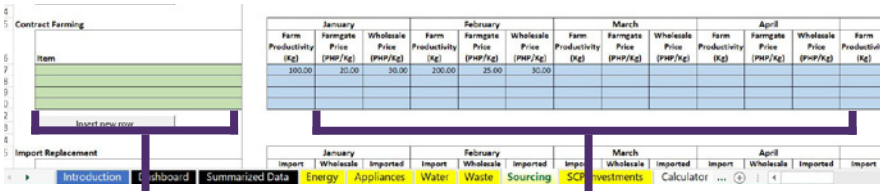
2. When practicing **Own Farm Production**, encode in the green-colored cells all the raw food ingredients sourced by the kitchen from your own farm. Also, enter the corresponding information needed per food ingredient in the blue colored cells. This section is optional.



Do you source ingredients from your own farm? If yes, enter here all the varieties of produce you use in the kitchen from your own farm.

Input how much you harvest from your farm every month, and how much you would sell it for. Encode information per produce, per month.

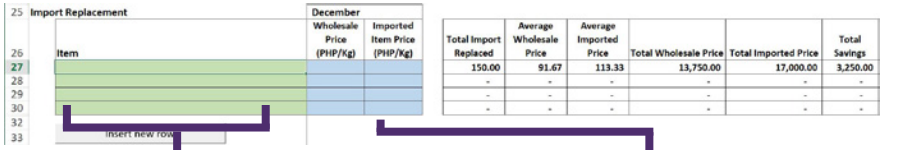
3. When practicing **Contract Farming**, encode in the green-colored cells all the food ingredients sourced by the kitchen through contract farming. Also, enter the corresponding information needed per food ingredient in the blue-colored cells. This section is optional.



Do you source ingredients from contract farming? If yes, enter here all the varieties of produce you use in the kitchen from contract farming.

Input how much of each ingredient you get from contract farming every month, and how much you bought it for (farmgate) and how much you would sell it for on wholesale.

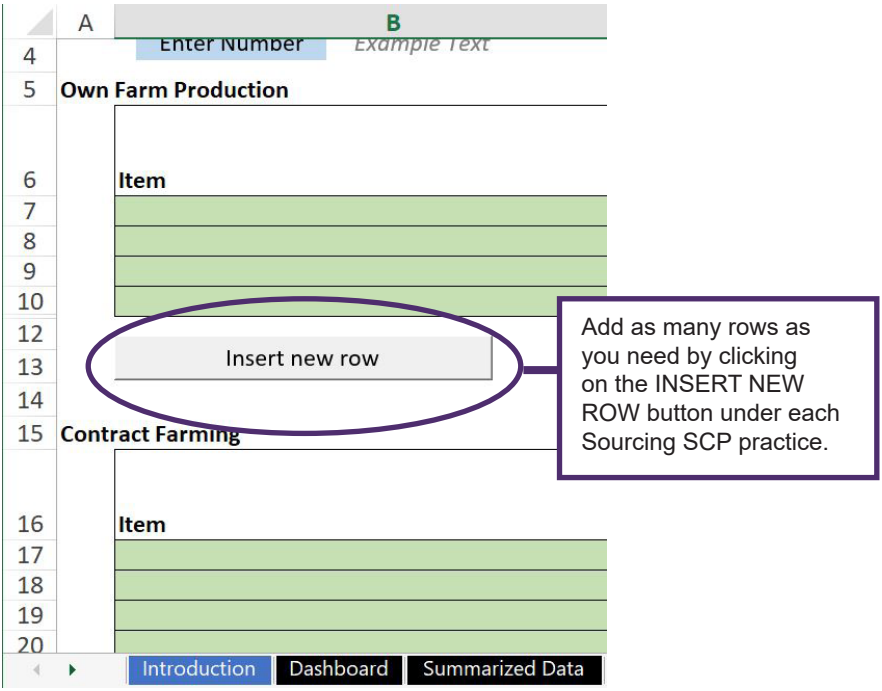
4. When practicing **Import Replacement**, encode in the green-colored cells all the food ingredients that were previously imported and replaced with locally sourced produce. Also, enter the corresponding information needed per food ingredient in the blue-colored cells. This section is optional.



Are you replacing imported ingredients with locally produced ones? If yes, enter here all the varieties of ingredients you use in the kitchen that you are now sourcing locally.

Enter all relevant information relating to food ingredients here. All fields are mandatory.

When encoding information in the Sourcing Tab and you need to add additional rows to accommodate the various food ingredients affected by each SCP practice, click on the **INSERT NEW ROW** button.



Caution!

Do not attempt to insert additional rows using other shortcuts in Excel. Please use INSERT NEW ROW button instead.

SCP Investments

Every SCP practice adopted would entail investments in terms of time and money from food service establishments. To complete the analysis, the monitoring tool asks users to input details of the cost of implementing SCP practices into their business operations.

SCP Investments [Mandatory]

The monitoring tool identifies 3 areas of investments – (1) Tools, Equipment & System Cost, (2) Labor or Manpower; and (3) Material Expense.

Definition of SCP Investments:

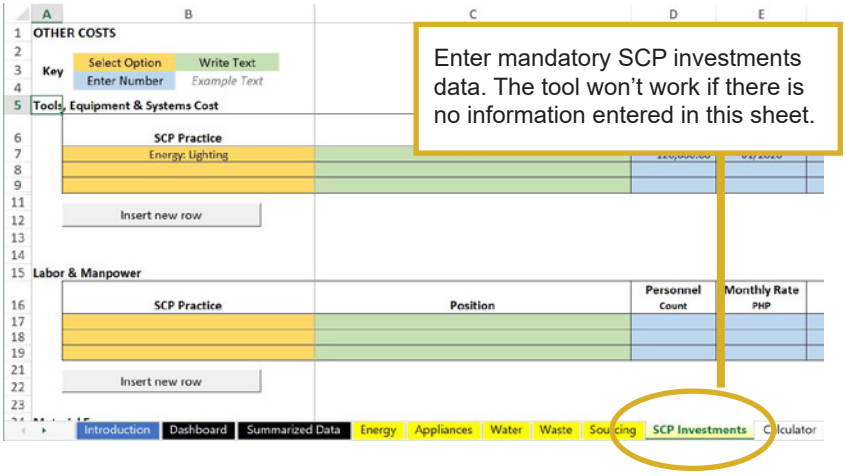
Tools, Equipment & System Cost – capital expenditure related to the implementation of the SCP practice. Example: water filtering system.

Labor & Manpower – all staff and management involved in the execution and monitoring of the SCP practice.

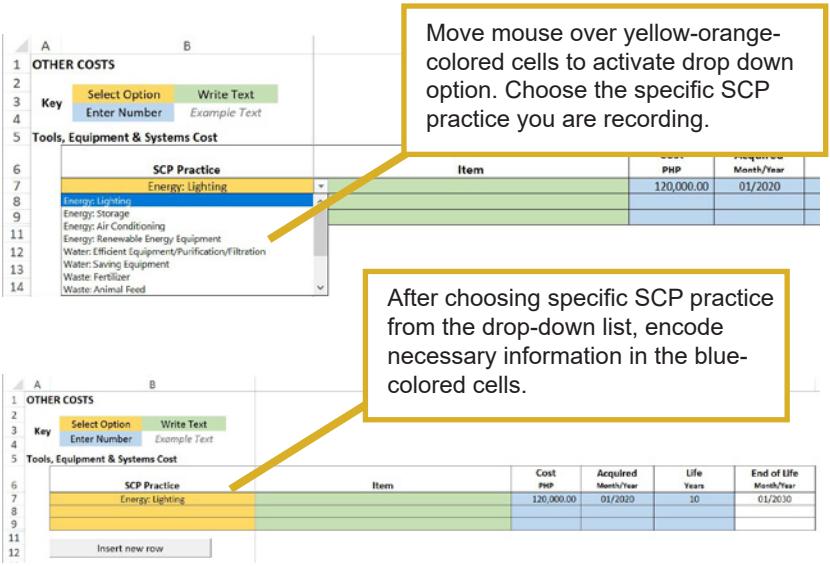
Material Expense – all consumable parts that must be regularly replaced/purchased to properly implement/execute the SCP practice. For example, filters for the water purification system.

How to input data on SCP Investments Tab:

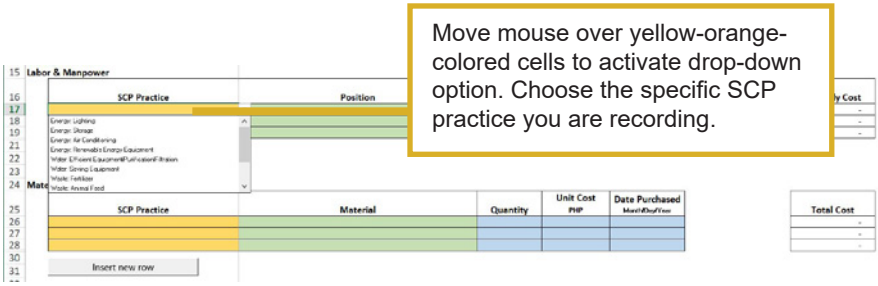
1. Click on the SCP Investments Tab.

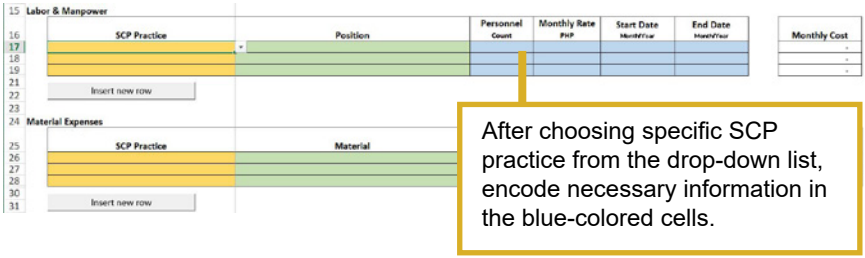


2. Encode Tools, Equipment & Systems Cost. Click on the yellow-orange-colored cell and choose the SCP practice from the drop-down selection. Enter the corresponding information in the blue-colored cells.

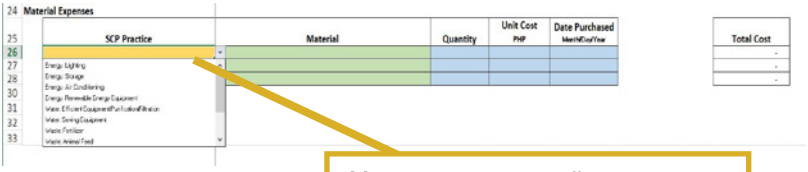


3. Encode Labor & Manpower Cost. Click on the yellow-orange-colored cell and choose the SCP practice from the drop-down selection. Enter the corresponding information in the blue-colored cells.

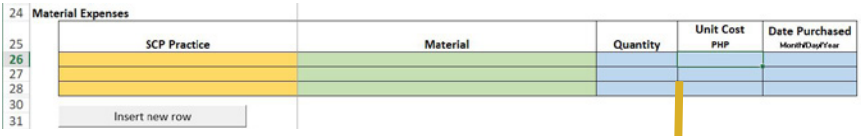




4. Encode Material Expenses. Click on the yellow-orange-colored cell and choose the SCP practice from the drop-down selection. Enter the corresponding information in the blue colored cells.



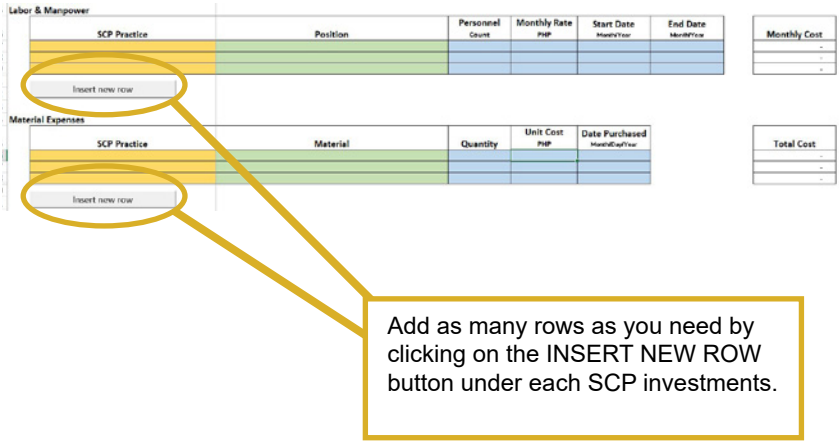
Move mouse over yellow-orange-colored cells to activate drop-down option. Choose the specific SCP practice you are recording.



After choosing specific SCP practice from the drop-down list, encode necessary information in the blue-colored cells.

How to insert additional rows:

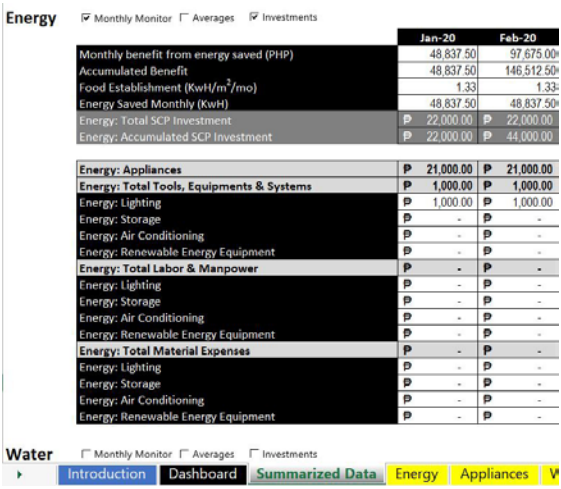
When encoding information under the various SCP INVESTMENTS and you need to add additional rows, click on the INSERT NEW ROW button.



Summarized Data

For the purposes of decision making, this sheet details, summarizes, and translates each encoded data from the various yellow-colored sheets in the TSD-CB Monitoring Tool. It collects the information from Energy, Water, Waste, Sourcing, and SCP Investments.

This is the programmed data analytics section of the monitoring tool. **No action is required from the user.**



Energy ☑ Monthly Monitor ☐ Averages ☑ Investments

	Jan-20	Feb-20
Monthly benefit from energy saved (PHP)	48,837.50	97,675.00
Accumulated Benefit	48,837.50	146,512.50
Food Establishment (KwH/m^2/mo)	1.33	1.33
Energy Saved Monthly (KwH)	48,837.50	48,837.50
Energy: Total SCP Investment	₱ 22,000.00	₱ 22,000.00
Energy: Accumulated SCP Investment	₱ 22,000.00	₱ 44,000.00
Energy: Appliances	**₱ 21,000.00**	**₱ 21,000.00**
Energy: Total Tools, Equipments & Systems	**₱ 1,000.00**	**₱ 1,000.00**
Energy: Lighting	₱ 1,000.00	₱ 1,000.00
Energy: Storage	₱ -	₱ -
Energy: Air Conditioning	₱ -	₱ -
Energy: Renewable Energy Equipment	₱ -	₱ -
Energy: Total Labor & Manpower	**₱ -**	**₱ -**
Energy: Lighting	₱ -	₱ -
Energy: Storage	₱ -	₱ -
Energy: Air Conditioning	₱ -	₱ -
Energy: Renewable Energy Equipment	₱ -	₱ -
Energy: Total Material Expenses	**₱ -**	**₱ -**
Energy: Lighting	₱ -	₱ -
Energy: Storage	₱ -	₱ -
Energy: Air Conditioning	₱ -	₱ -
Energy: Renewable Energy Equipment	₱ -	₱ -

Water ☐ Monthly Monitor ☐ Averages ☐ Investments

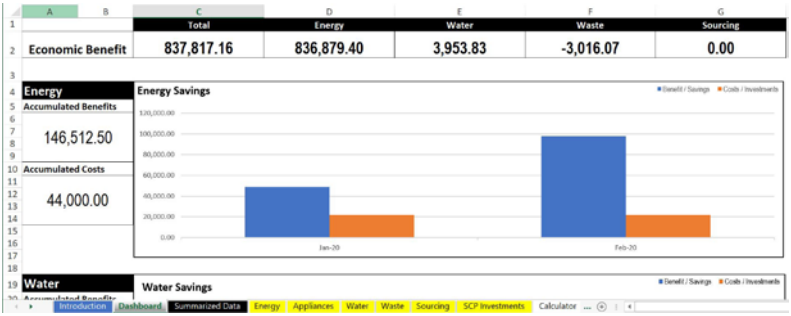
Introduction | Dashboard | Summarized Data | Energy | Appliances

Dashboard

The results of the data analytics are visually represented in charts and graphs on the dashboard for easy reference.

This is a programmed section of the monitoring tool.

No action is required from the user.



	Total	Energy	Water	Waste	Sourcing
Economic Benefit	837,817.16	836,879.40	3,953.83	-3,016.07	0.00

Energy

Accumulated Benefits

146,512.50

Accumulated Costs

44,000.00

Energy Savings

Water

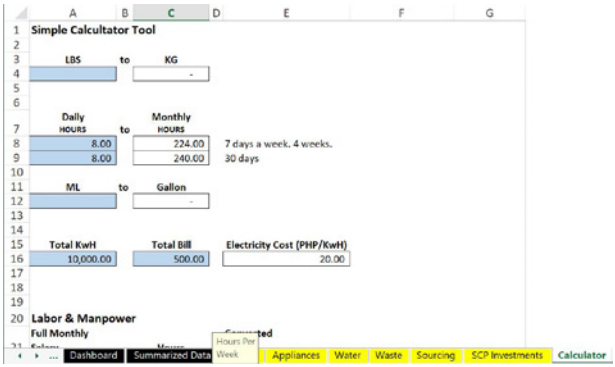
Water Savings

Introduction | Dashboard | Summarized Data | Energy | Appliances | Water | Waste | Sourcing | SCP Investments | Calculator

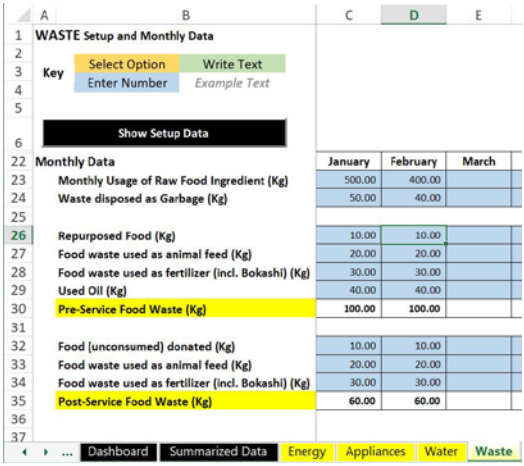
Calculator

For easy computation and conversion of available information into data that the monitoring tool can recognize, a built-in calculator is provided for users.

For easy computation and conversion of available information into data that the monitoring tool can recognize, a built-in calculator is provided for users.



Users can use this tool to convert their data to the appropriate unit of measurement required by the tool. The unit of measurement required for every data entry is indicated inside parentheses.



Reminder: Inputting data in the correct unit of measurement is important so that the tool can properly compute for the benefits.

FAQs

Frequently Asked Questions

General FAQs

- **What is the main difference between the Greenhouse Gas Abatement Cost Model (GACMO) tool and this TSD-CB Monitoring Tool?**

The GACMO tool mainly tracks energy consumption and greenhouse gas (GHG) emissions from the specific activity areas of establishments, such as air-conditioning, water heating, lighting, equipment operations, food delivery and preparation. The TSD-CB Monitoring Tool tracks benefits in the form of resource (energy, water, food) savings, added value creation, reduced carbon emissions, etc. associated with sustainable consumption and production (SCP) practices in four (4) areas of sustainability, namely energy, water, waste (food and non-food), and local sourcing.

GACMO therefore focuses on the environmental impacts of the various activities of food service establishments (e.g., what type of energy is utilized, how much pollution is added or reduced based on activity). It does not include analysis on the expanded economic impacts, such as the value generated by re-use and recycling of waste, and social conditions which were considered in the expanded cost-benefit study which was the basis of the TSD-CB Monitoring Tool.

GACMO was also created specifically for hotels while the TSD-CB Monitoring Tool was created for food service establishments and used local (Philippine) data.

- **What are the technical requirements of the TSD-CB Monitoring Tool?**

1. A PC running Windows 10
2. Latest version of Microsoft EXCEL
3. Latest version of TSD-CB Monitoring Tool

- **Can I use a personal tablet device for the TSD-CB Monitoring Tool?**

No. EXCEL for Macintosh does not have the full technical capabilities versus the Microsoft EXCEL version. EXCEL apps for

small screens - mobile and personal tablets - are also different from computer-based EXCEL and have limited features. The TSD-CB Monitoring Tool uses advanced features only accessible via the Microsoft Excel personal computer version.

- **Where can I get more information on how to use the TSD-CB Monitoring Tool?**

Apart from this TSD-CB Monitoring Tool Manual, a good source of additional information is the TSD-CB Monitoring Tool video training. The video training contains the following information:

Timestamps:

1:02 What's In It For Me?
1:48 Limitations
2:00 Technical Requirements
2:49 Setting Permissions
4:46 General Set-up
5:22 Getting Started
9:15 Investments
15:10 Energy
21:00 Energy (Appliances)
25:49 Water
29:51 Waste
34:59 Sourcing
38:34 Calculator
39:54 Dashboard
48:58 Contact Details

Watch the instructional video at **bit.ly/CBToolVideo** or scan the QR code.

- **Where can we find the summarized results?**

The summarized results are found in the summarized data in the TSD-CB Monitoring Tool and illustrated in the dashboard tab.

FAQs on SCP Practices

- **Aside from the four common appliances given, do we need to add other types of appliances?**

No, the TSD-CB Monitoring only asks for four (4) types of appliances. This is because the CBA Study and its accompanying research, that is the basis of the formulas used in the TSD-CB Monitoring Tool, discovered that these four (4) appliances are the biggest consumers of electricity in food service establishments. An average food service establishment in the Philippines were also found to have all of these four (4) types of electricity equipment in their business.

- **How to compute the H_2O produced (m3/mo)?**

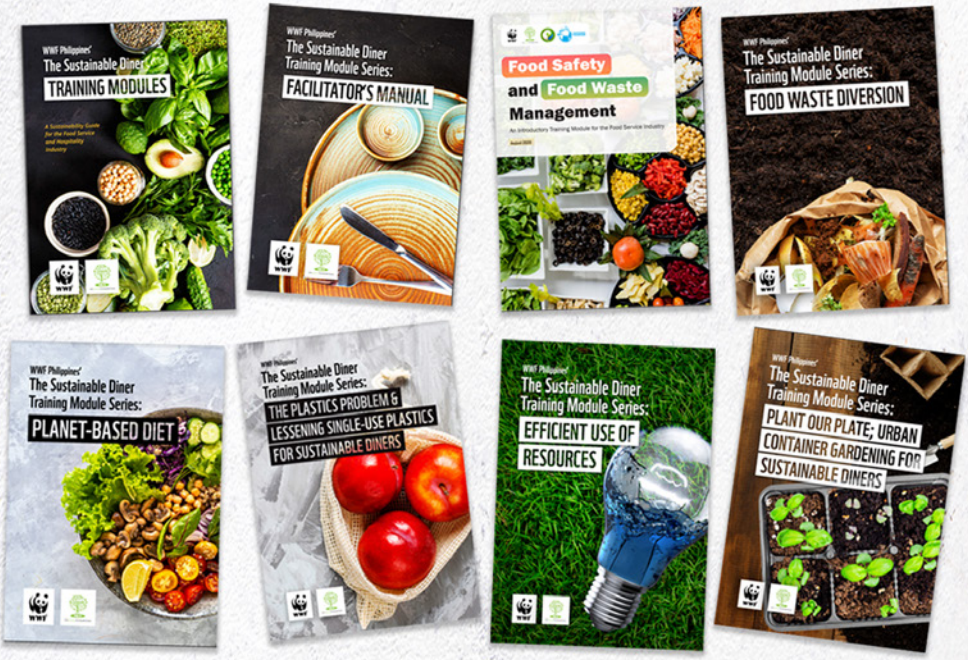
The H_20 produced can be computed by the maximum volume capacity of the water tank multiplied by the number of times in a month the water tank needs to be refilled.

- **What is the difference between the "distance difference" and "average mileage" data in the Sourcing?**

Distance difference is the actual distance from the restaurant (origin) to the location where the raw ingredients are sourced (e.g. farm or market). Average mileage is the distance difference divided by the number of raw food ingredients sourced in a particular location.

- **Why is it that the quality of food source is not factored in the computation of cost-benefit in the application of SCP practices in local sourcing?**

One of the acknowledged limitations under the scope of research of the cost-benefit analysis (CBA) of SCP practices in Food Service Establishments is the exclusion of the measure food source quality. What inputs are needed in the TSD-CB Monitoring Tool and how they are computed are all taken from the CBA Study so the tool also carried with it the limitation of the CBA Study.



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