

User Manual for the REDD+ Cost Model

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Contents

1. Purpose and Uses of the Model.....	1
2. Development of the Model.....	1
3. Prior to using the Model	2
4. General information on the Model.....	2
4.1 Excel Macros.....	2
4.2 REDD Cost Model Framework	3
4.3 Input Cells & Output Cells	3
4.4 Buttons	3
4.5 Functions	4
4.6 Budget Category	5
4.7 Additional Cost classifications	5
4.8 Prohibited actions when using the Model	6
5. Input Sheets	6
5.1 “General” Sheet.....	6
5.2 “Personnel” Sheet	8
5.3 “Contractor” Sheet	8
5.4 “Supplies” sheet	10
5.5 “Assets” sheet.....	10
5.6 “Travel” sheet.....	12
5.7 “Others” sheet.....	13
5.7.1 Occupancy.....	13
5.7.2 Fees and taxes.....	14
5.7.3 Miscellaneous	14
5.8 “Activities” sheet	15
6. Output Sheets	16
6.1 Sheet “Summary”	16
6.2 “Graphs”	17
7. References	17
Contact Information.....	18

This User Manual provides guidance and instruction on the use of an Excel-based cost model as designed for REDD+ project costing exercises. This model was developed to improve understanding of the implementation costs of sub-national REDD+ initiatives in collaboration with, and as part of, CIFOR's [Global Comparative Study on REDD+](#) (GCS). The model is available for download from <http://www.cifor.org/gcs/publications/toolboxes/>

1. Purpose and Uses of the Model

The REDD+ Cost Model is an open-access tool that standardizes the collection, categorization, and analysis of budget data on subnational REDD+ initiatives. The costing tool is a comprehensive, bottom-up, Excel-based budgeting and cost forecasting model built with Excel Visual Basic for Application (VBA). It provides a structured and consistent framework for collecting data on the implementation costs (including transactions and institutional costs that are on-budget) incurred by the entities involved in REDD+ on the ground. This ensures that budgeting is thorough and rigorous, prompting users to consider costs across various budget categories and project functions and preventing double-counting.

The model also facilitates the exploration of design alternatives by automating budget calculations and the creation of charts that show – for example – temporal trends in costs by category and function. By providing various means to classify costs, it supports intra-project cost analysis, including identification of key cost drivers. Finally, by imposing a consistent structure and approach, it supports comparisons and generalizations of costs across initiatives. This makes the model potentially useful to researchers and policy analysts who need to project how much REDD+ will cost implementing organizations.

Our ultimate objective in developing the model is to improve decision-making about REDD+ by providing greater clarity about its costs. Insights into key cost drivers and variance in costs across REDD+ project types and locations may be used by potential investors and proponents to inform decision making and planning and may help to demystify typical financing considerations and payback periods. Policy analysts and decision-makers could use the tool to compile data needed to compare the “cost/ton” of REDD+ with other mitigation options, to identify cost barriers to REDD+ that could be reduced with appropriate policies, and to assess alternatives for benefit-sharing that reward actors appropriately.

2. Development of the Model

The REDD+ Cost Model is based on Starling Resources' Marine Protected Area (MPA) Financial Model, a comprehensive, bottom-up budgeting and cost forecasting model for MPAs. This MPA financial model has been widely used since 2006, particularly to develop sustainable financial strategies for protected areas in the Asia Pacific (Indonesia, Philippines, Cambodia, Papua New Guinea, Fiji, and Kiribati), with some adjustment to accommodate the specific needs of each protected area. Starling adapted the model to use with a common type of REDD+ project in Indonesia, authorized as Ecosystem Restoration Concessions or ERCs ([Madeira et al. 2010](#), CCIF 2011). As part of the GCS, CIFOR collaborated with Starling to further develop and test the model with diverse sub-national REDD+ initiatives in Brazil, Indonesia, and Tanzania. The specific initiatives where the model has been tested are described in [Sills et al. 2014](#): Jari/Amapá, Transamazon, Katingan, KCCP, Mpingo, and Zanzibar. The researchers who helped test the model included Demetrius Kweka and Eduardo Marinho. In this user guide, the components of the model are illustrated with examples from the [Katingan project](#) in Indonesia.

3. Prior to using the Model

This user guide explains how to enter data and operate the Excel-based financial model. The model provides a tool for analysis but does not generate recommendations on specific project designs or activities. Rather, the user must enter the costs associated with each plan or design under consideration. The model was developed and tested with sub-national REDD+ initiatives that already had written plans (e.g., PDDs), which they were starting to implement. In this context, the model can be used for both *ex post* analysis of costs incurred to date and *ex ante* projection of future budget needs. In order to use this model, the analyst needs to first obtain the following information:

- Work plan of the project, including its timeline and functions (i.e. major activities or goals).
- Detailed costs of personnel who have been involved in the project and plans to hire personnel in the future.
- Detailed costs of contractors needed during the project period.
- Detailed costs of assets owned by the project and assets to be purchased.
- Detailed costs associated with occupying buildings and spaces, such as rent and utilities.
- Details on other costs that may become relevant during the project period.

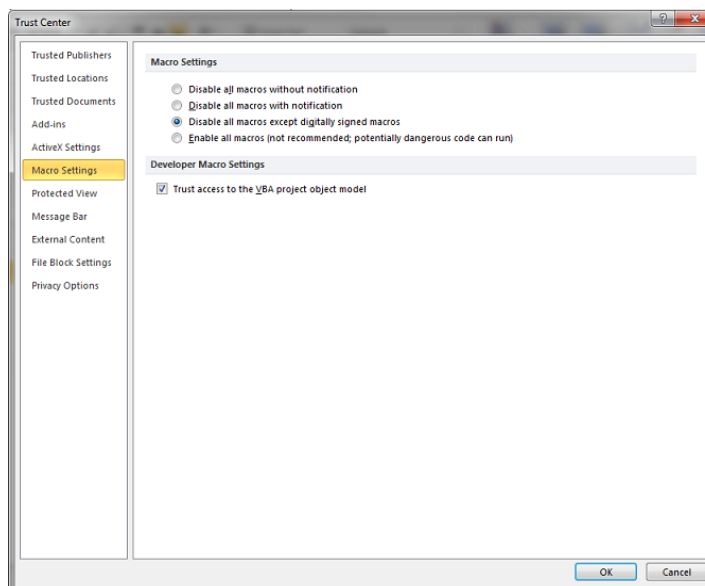
4. General information on the Model

4.1 Excel Macros

The model was developed using **Excel Visual Basic for Applications (VBA)** to allow for the flexible manipulation of data and calculations. The model will only work correctly if Excel Macros have been enabled. Normally the option to enable macros will appear as shown below when the Excel model is first opened (Excel version 2010 or higher):



In order to enable macros, click "Enable Content" before opening the file. If the option is not presented or to enable macros after the file is opened, the user may enable macros in MS Excel through the menu: *File, Options, Trust Center, Trust Center Settings, Macro Settings*: chose the third or fourth option as shown in the picture below:



4.2 REDD Cost Model Framework

The two major components of the model are data **inputs**, and tabular and graphical **outputs**. The worksheets are grouped into these two components as follows:

Component	Explanation
Inputs	All tab names in green are designed for user inputs
- General	The “ <i>General</i> ” sheet captures the basic profile of the project and all the assumptions used in the model. Ideally, these assumptions should be input first, before completing other input sheets.
- Personnel	The “ <i>Personnel</i> ” sheet captures the all-in costs of project or program staff, including benefits.
- Contractors	The “ <i>Contractor</i> ” sheet captures the costs of hiring contractors and consultants. This sheet is intended to record the costs of contractors and consultants who provide services to the REDD+ project. Contracts for specific inputs to activities implemented by the proponent should be included in the “ <i>Activities</i> ” sheet.
- Supplies	The “ <i>Supplies</i> ” sheet captures supplies and materials cost. This sheet is intended to record the costs of general supplies for the project, as opposed to inputs needed for specific activities.
- Assets	The “ <i>Assets</i> ” sheet captures the cost of purchase, the lifetime, and the operation costs – including fuel and maintenance - of equipment.
- Travel	The “ <i>Travel</i> ” sheet records travel costs. This sheet is intended to record the costs of travel for the project in general, as opposed to travel for specific activities.
- Others	The “ <i>Others</i> ” sheet captures occupancy cost, fees and taxes, and other miscellaneous costs. As above, these are costs for the project as a whole.
- Activity	The “ <i>Activity</i> ” sheet lists specific activities (or sub-projects) and their costs, including contractors and consultants, supplies and materials, fuel, travel costs and miscellaneous costs.
Outputs	All tab names in yellow contain model outputs
- Summary	Provides a summary of total costs in table format. Through a drop-down list, the user can specify whether costs should be categorized and reported by budget category; function; relationship of costs to reducing carbon emissions (REDD+ transactions costs vs. costs not directly related to reducing carbon emissions vs. joint costs); or fixed vs. variable costs.
- Graphs	Provides a summary of total costs in graph format. Through a drop-down list, the user can specify whether costs should be categorized and reported by budget category, function, relationship of costs to reducing carbon emissions, or fixed vs. variable costs.


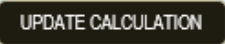

4.3 Input Cells & Output Cells

Input cells are cells with grey borders and blue font color within sheets where the user can input data. Input can be text, numbers or selection from options in a dropdown list. The user should only input data into input cells and should not attempt to make changes to other cells.

The results of calculations will appear in the output cells. Output cells always contain black font color and are mostly found in the summary sheets.

4.4 Buttons

The buttons in the model trigger execution of specific commands, as explained below:

Buttons	Explanation
	<p>“New” and “Delete” buttons are located in the top left corner of each input sheet. The “New” button is used to add a line of data to the row selected. The “Delete” button is used to delete a selected line. Lines with input cells can be added or deleted. Line item 1 cannot be deleted because its location and formation is used by the macro as a reference.</p>
	<p>This button is located in the top left of the “Summary” sheet, below the title. After all data have been input, the user should click this button to run total cost calculations. When the calculations are finished, the results will appear in the output sheets (Summary and Graph). If assumptions or input data are changed, the user must click this button in order to update outputs.</p>
	<p>This button located in the “Graph” sheet is used to obtain the desired graphical output. Once a particular output is selected from the dropdown list, located next to the “Refresh” button, the user must click “Refresh” to generate the desired graph.</p>

4.5 Functions

Functions allow the user to design a tailored classification scheme for project costs. The capacity to allocate costs to user-determined functions was designed to give project implementers an understanding of the costs associated with a project’s central work streams, or functions. These are groupings of activities and costs that support particular sub-objectives of projects. For example, project designers may wish to understand and compare costs between natural resource “protection and enforcement” and “outreach, education and communication” activities. There are eight functions available in this model. Their default names and definitions are provided in the assumption sheet. All functions can be changed to reflect the REDD+ project being costed.

When data are input, the user must allocate each cost across the various functions by assigning percentages to each. A “non-function” is also provided for costs that are partially allocated outside of the project – for example a full time staff member whose time is split between the REDD+ project being costed and another separate initiative. The sum of the percentages allocated to each function, plus the non-function, must equal 100 percent for each line of input data. An “Ok” sign appears on the right side if the total percentage is 100%; otherwise, an “X” sign appears. If the allocation to functions (and non-function) is less than 100%, the percentage of costs not allocated will not be included in model calculations and outputs. In the example below, the data entry cells are circled in green. By allocating each cost across functions, the user obtains a detailed cost break-down by function.

Katingan Project Financial Model										FUNCTIONS									
CONTRACTORS INPUT										Policy and Planning (A) E Community Development Protection and Enforcement (B) F Information, Education & Communication Ecosystem Restoration (C) G Marketing Methodology Development and MRV (D) H Finance and Administration Non-function (I)									
Note: Select the row data (or just a cell) and then click "New" button to add/insert a new row data or click "Delete" button to delete the row selected. Links: Menu Summary																			
New Delete Cost/unit When incurred? (in year) % role in Functions No longer needed																			
Item	Name of Contractor	Unit	Currency	Amount	Quantity	First Incurred	Frequency	No longer needed		A	B	C	D	E	F	G	H	I	Cost Classification (Emission)
CONTRACTORS																			
1	Carbon - PDD writer team	per year	IDR	2,500,000,000	1.0	2012	Every year	2015		100%									Reducing Emission & other
2	Carbon - GIS Consulting	per year	IDR	300,000,000	1.0	2012	Every year	2014		100%									Reducing Emission & other
3	Carbon - Carbon stock analysis	per year	IDR	1,000,000,000	1.0	2012	Every year	2013				100%							Reducing Emission
4	Carbon - Biodiversity analysis	per year	IDR	500,000,000	1.0	2012	Every year	2016					100%						Other
5	Carbon - CCBA Project Validation	per year	IDR	300,000,000	1.0	2014	Every year	2015					100%						Reducing Emission
6	Carbon - VCS Project Validation and Verification	per year	IDR	700,000,000	1.0	2014	Every year	2015					100%						Reducing Emission

The model, as designed for use in costing REDD+ projects and as discussed here, includes the following default functions:

- Policy and Planning
- Protection and Enforcement
- Ecosystem Restoration
- Methodology Development and MRV
- Community Development
- Information, Education & Communication
- Marketing
- Finance and Administration

4.6 Budget Category

Project costs are also delineated based on defined budget categories. These are as follows:

Budget category	Input sheets
Personnel: employee salaries, benefits and bonus expenses	“Personnel”
Contractors: contractor and consultant fees	“Contractors” and “Activities”
Consumable supplies: office and field supplies	“Supplies” and “Activities”
Occupancy: rent, utilities, communications, etc.	“Others” and “Activities”
Capital Assets: purchase price of assets, separated into fuel burning and non-fuel burning assets.	“Assets”
Assets Maintenance: cost of maintaining the assets	“Assets”
Fuel: cost of fuel such as gasoline and oil	“Assets” and “Activities”
Travel: cost of transportation, accommodations and meals	“Travel” and “Activities”
Fees and Taxes: charges such as concession fees and taxes	“Others” and “Activities”
Miscellaneous: any costs that do not fall in above categories	“Others” and “Activities”

Costs in most budget categories can be entered in either the tab for that category or the activities tab. In order to determine where to enter these costs, the user must first understand the budgeting and accounting structure of the project under consideration. If budgets are planned and costs are accounted for by activity, then the activities tab could be completed first, leaving only the costs that support the project as a whole and that could not be assigned to specific activities to be input into the tabs for each budget category. Alternatively, if the project has one unified budget and accounting system, it may be difficult to identify the costs of particular activities. In that case, all costs should be entered directly into the tabs for each budget category. It is critically important to consider the options and make a choice at the outset of data collection, in order to prevent double-counting.

4.7 Additional Cost classifications

Two additional columns appear to the far right of cost input sheets that prompt the user to further classify costs in two ways. The ‘cost classification’ column enables the identification of costs associated with accessing climate mitigation funding, whether through sale of carbon offset credits or through multi-lateral or bi-lateral aid for climate change mitigation. These costs are taken to include the costs of quantifying, monitoring, reporting, and verification of reductions in carbon emissions as well as the

marketing and/or sale of projects or credits generated. Using a drop down list, costs are classified as one of the following:

- Access climate mitigation funding (i.e., cost would *not* have been incurred for similar avoided deforestation project that was *not* seeking to quantify and possibly transact reduced emissions);
- Other (i.e., cost would likely have been incurred by similar forest conservation project even if it were not labeled “REDD+”);
- Access climate mitigation funding and other.

The final column classifies costs according to whether they are fixed (per project) or variable. Fixed costs are further sub-divided into “first-mover” costs – those that are incurred only by the first REDD+ project in a region (e.g. development of a locally appropriate methodology for carbon accounting) – and costs that will be incurred by all REDD+ projects in the region (e.g. hiring a project manager or paying taxes). Variable costs are divided into those that increase at a consistent rate, without any economies of scale, and those that increase at a decreasing rate, providing “economies of scale.” The variable costs that exhibit economies of scale are further subdivided into those that develop with the geographic size of the project area, the population in the project area, or both. Thus, the categories are as follows:

- Fixed cost (first mover only)
- Fixed cost
- Variable cost (increases with no economies of scale)
- Variable cost (economies of scale – land area)
- Variable cost (economies of scale – population)
- Variable cost (economies of scale – land area and population)

The model employs the data input into these columns to sum and present costs in these categories.

4.8 Prohibited actions when using the Model

- Do not manually cut or insert rows or columns unless you clearly understand the macro running the model. Instead, use the buttons provided to add or delete rows of data.
- Only enter input into input cells. Do not delete or make any changes in other cells.

5. Input Sheets

These sheets record information on the project budget. For projects that have just been initiated, the data are likely to be a mix of information on actual expenditures and projections of future expenditures. The user needs to obtain this information from the project manager and possibly other stakeholders. In general, the user should complete the “*General*” sheet first. The other sheets may be completed in any order convenient. For example, it may be easiest to start with the overhead costs in the “*Other*” sheet. Alternatively, if the project’s financial records are organized by activity, then it may be easiest to start with the “*Activity*” sheet.

5.1 “General” Sheet

On this sheet, the user should record a general profile and basic information about the project, including the following key assumptions:

Assumptions	Explanation
Program	Name and describe up to eight core functions of the project.
Financial assumptions <ul style="list-style-type: none"> - Annual Salary Raise - Inflation Rate - Exchange rate 	These assumptions are used to project costs over the lifetime of the project: <ul style="list-style-type: none"> - <i>Annual Salary Raise</i> is the rate for salary increase in each personnel category. - <i>Inflation Rate</i> is used to project nominal costs. Information on the national inflation rate can usually be obtained from central banks. This should be the national rate, in the currency applicable to most project expenditures (e.g. rupiah in Indonesia). The user can enter the same or different inflation rates for the US dollar and the Euro, currencies typically used by funders. Calculations of future costs reflect the assumed inflation rate. All costs should be entered into the spreadsheet in terms of expenditures in the "current year" (defined below). - <i>Exchange rate</i> is the value of one currency for the purpose of conversion to another. In general, the user should input the national (local) currency and currency symbol in the first row, and the conversion rate in the "current year" between the national currency and the US dollar and the national currency and the Euro in the next two rows. These can be obtained from sources such as Oanda.com
Concession cost and taxes	The user can input land taxes on a per hectare basis. These cells can also automatically calculate Indonesian Ecosystem Restoration Concession (ERC) fees in accordance with regulations as of 2016. Check the box to enable use of the ERC fee calculation function.
Travel cost assumptions <ul style="list-style-type: none"> - Transportation cost - Accommodation and meals cost 	Recurring travel costs are detailed here and are linked to the "Travel" input sheet and related calculations. This allows the user to more easily adjust travel costs to reflect changes in actual prices without manually adjusting multiple line items on the "Travel" sheet. <ul style="list-style-type: none"> - <i>Transportation cost</i> is used to specify the total travel costs of a particular site-to-site trip. Users should identify all travel legs and modes required for site-to-site travel, for all site-to-site trips common to the project. - <i>Accommodation</i> is the cost of accommodation (hotel, lodging) associated with staff travel. Meals are eating and drinking costs associated with staff travel. Accommodation and meal costs may vary by location. Users should estimate the costs of accommodation and meals for all relevant locations.
Fuel cost	Fuel needs are input on the sheet "Assets." These costs are often a large component of REDD+ budgets, because activities take place in remote locations. For example, if transportation to the site is by speedboat, fuel costs can be very large. Thus, a change in fuel price would have a significant impact on the total cost of the project, which users may wish to model to understand implications for the budget. In this sheet, users need to enter the price per unit for each type of fuel used. The unit used to report prices here must be the same as the unit used to report quantities in the "Assets" sheet. Liters are recommended as the standard unit.
Projection Period <ul style="list-style-type: none"> - Current Year - Start year - End year 	"Start Year" and "End Year" are the beginning and end of the projection in this model. "Start year" should normally be the year when project activities begin. The "Current Year" is the year whose currency is used to enter data on costs (e.g., salaries, fuel prices, and consulting contracts). For example, all costs could be reported in terms of 2010 USD, if they are based on 2010 budget reports. Or all costs could be entered in terms of 2016 USD, if they are based on expenditures in 2016. The "Current Year" is often (but not always) the year when data are being entered.

5.2 “Personnel” Sheet

On this sheet, the user should record information on all individuals that serve the REDD+ project through particular job functions or programs. These are usually considered staff positions.

Katingan Project Financial Model
PERSONNEL INPUT

Note: Select the row data (or just a cell) and then click "New" button to add /insert a new row data or click "Delete" button to delete the row selected.

Links: Menu Summary

FUNCTIONS
 A Policy and Planning
 B Protection and Enforcement
 C Ecosystem Restoration
 D Methodology Development and MRV
 E Community Development
 F Information, Education & Communication
 G Marketing
 H Finance and Administration
 I Non-function

Item	Position	# of people	Working Year		Salary & Benefit / year		% role in Functions							Cost Classification (Emission)	Fixed/Variable Cost			
			Start	End	Currency	Amount	A	B	C	D	E	F	G			H	I	
2	General Manager	1	2014	2033	IDR	600,000,000	15%	15%	10%	15%	15%	15%					Reducing Emission & other	Fixed cost
3	Kabag Perencanaan dan Teknik	1	2015	2033	IDR	104,000,000	50%		50%								Reducing Emission & other	Fixed cost
4	Kasie Perencanaan	1	2015	2033	IDR	39,000,000	50%		50%								Reducing Emission & other	Fixed cost
5	Kasie Teknik	1	2015	2033	IDR	39,000,000	50%		50%								Reducing Emission & other	Fixed cost

All inputs requested on this sheet are described in this table below.

Input	Type of input	Explanation
Position Name	Text	Job title.
# of people	Number	Specifies the number of people with the same position titles and terms (years). This allows for multiple staff within the same position and with the same start/end dates and salary details to be input simultaneously. Staff with the same position but with differing terms of employment (years, salary or role) should be entered separately in different rows.
Working year - Start - End	Calendar year	The years in which the staff started working (<i>Start</i>) and stop working (<i>End</i>)
Salary & Benefit / year - Currency - Amount	- Dropdown list - Number	Total of salary, benefits and bonuses received per person in the year defined as the “current year” on the “General” tab. The monetary amount should be entered in the column “Amount” and the currency selected in the column “Currency” (currency options are input in the general tab). If no currency is selected, the default is the local currency.
% role in Functions	Percentage	Distribution of employee time to each function. Can include zeros. Must sum to 100%, including time allocated outside of REDD+ recorded in the “non-function” column.
Cost Classification (costs of accessing carbon funding)	Dropdown list	Classifies costs according to whether they are required only to access climate mitigation or carbon funding, only for other activities unrelated to accessing carbon funding, or both. Users select from a dropdown list.
Fixed/Variable Cost	Dropdown list	Classifies costs according to whether they are fixed or variable. Fixed costs are further categorized according to whether they are incurred only by first-mover REDD+ projects or every REDD+ project. For variable costs, the user selects if the cost is subject to economies of scale, and if so, the primary driver of such economies of scale: number of hectares, number of households, or both.

5.3 “Contractor” Sheet

Contractor costs relate to the costs of external individuals/institutions hired to fulfill a specific program requirement or to handle a particular activity. Hiring can be short-term or long-term. Certain project activities may require contracting, such as the hiring of certified validators/verifiers to validate project

design and verify emission reductions against established carbon standards. Other tasks may be carried out by either contracted organizations or in-house personnel. As such, the personnel and other related costs for a particular task may be specified in the contractor sheet for some projects, while personnel costs for the same task may be captured in the "Personnel" tab for other projects, depending on the approach taken by the project managers.

Katingan Project Financial Model
CONTRACTORS INPUT

FUNCTIONS

- A Policy and Planning
- B Protection and Enforcement
- C Ecosystem Restoration
- D Methodology Development and IRV
- E Community Development
- F Information, Education & Communication
- G Marketing
- H Finance and Administration
- I Non-function

When incurred? (in year)

Item	Name of Contractor	Unit	Currency	Amount	Quantity	First incurred	Frequency	No longer needed	A	B	C	D	E	F	G	H	I	Cost Classification (Emission)	Fixed/Variable Cost
1	Carbon - POD writer team	per year	IDR	2,500,000,000	1.0	2012	Every year	2015	100%									Reducing Emission & other	Variable cost (no economies of scale)
2	Carbon - GIS Consulting	per year	IDR	300,000,000	1.0	2012	Every year	2014	100%									Reducing Emission & other	Variable cost (no economies of scale)
3	Carbon - Carbon stock analysis	per year	IDR	1,000,000,000	1.0	2012	Every year	2013				100%						Reducing Emission	Variable cost (economies of scale)
4	Carbon - Biodiversity analysis	per year	IDR	900,000,000	1.0	2012	Every year	2016				100%						Other	Fixed cost
5	Carbon - CCSA Project Validation	per year	IDR	300,000,000	1.0	2014	Every year	2015				100%						Reducing Emission	Variable cost (no economies of scale)
6	Carbon - VCS Project Validation and Verification	per year	IDR	700,000,000	1.0	2014	Every year	2015				100%						Reducing Emission	Variable cost (no economies of scale)

The following table describes the inputs requested on the sheet "Contractor".

Input	Type of input	Explanation
Name of contractor/ description	Text	A label for each contract needed to support the REDD+ initiative, which can be the name of the contractor or the name of the contracted activity.
Unit	Text	Measurement unit for the contracted activity. User selects from a prepopulated dropdown list.
Cost/unit	-	Captures contractor fees per measurement unit for each contract. Enter the appropriate amount in the "Amount" column and select a currency from the drop-down list in the "Currency" column (if nothing selected, defaults to local currency).
- Currency	- Dropdown list	
- Amount	- Number	
Quantity	Number	Quantity of units needed per year. If one contract will span two years, then 0.5 should be entered.
When incurred? (in year):		<i>First incurred</i> is the first year of the contract.
- First incurred	- Calendar year	<i>Frequency</i> indicates how often the contractor is needed. A dropdown box allows the user to select every year, every two years, and so on. If no selection is made, the default assumption is that the contractor is hired for one year.
- Frequency	- Dropdown list	
- No longer needed	- Calendar year	<i>No longer needed</i> is first year in which the contractor is no longer needed.
% role in Functions	Percentage	Distribution of contractor role to each function
Cost Classification (costs of accessing carbon funding)	Dropdown list	Classifies costs according to whether they are required only to access climate mitigation or carbon funding, only for other activities unrelated to accessing carbon funding, or both. Users select from a dropdown list.
Fixed/Variable Cost	Dropdown list	Classifies costs according to whether they are fixed or variable. Fixed costs are further categorized according to whether they are incurred only by first-mover REDD+ projects or every REDD+ project. For variable costs, the user selects if the cost is subject to economies of scale, and if so, the primary driver of such economies of scale: number of hectares, number of households, or both.

5.4 “Supplies” sheet

Supplies and material costs that are specifically and exclusively for particular activities should be inputted in the “Activity” sheet. However, general purpose supplies (e.g. paper for the office) are input on this sheet.

The following table describes the inputs requested on the “Supplies” sheet.

Input	Type of input	Explanation
Name of supplies	Text	Name of each type of supply or material.
Unit	Text	Measurement unit of the supplies or materials
Cost/unit		Cost per measurement unit. Enter total cost in the column "Amount" and select currency from the drop-down box in the column "Currency" (if nothing selected, defaults to local currency).
- Currency	Dropdown list	
- Amount	Number	
Quantity	Number	Number of units needed per year
When incurred? (in year):	Calendar year	<i>First incurred</i> is the first year that supplies or materials are needed.
- First incurred		
- Frequency	Dropdown list	<i>Frequency</i> specifies how often a supply or material is needed: every year, every two years, etc. If left blank, the default setting is one year. A user can specify a supply or material cost for a two-year period by inputting 0.5 in the <i>quantity</i> column and <i>every year</i> in the <i>frequency</i> column.
- No longer needed	Calendar year	<i>No longer needed</i> is the dates (by year) of the supplies and materials cost will no longer be needed.
% role in Functions	Percentage	Distribution of supplies to each function
Cost Classification (costs of accessing carbon funding)	Dropdown list	Classifies costs according to whether they are required only to access climate mitigation or carbon funding, only for other activities unrelated to accessing carbon funding, or both. Users select from a dropdown list.
Fixed/Variable Cost	Dropdown list	Classifies costs according to whether they are fixed or variable. Fixed costs are further categorized according to whether they are incurred only by first-mover REDD+ projects or every REDD+ project. For variable costs, the user selects if the cost is subject to economies of scale, and if so, the primary driver of such economies of scale: number of hectares, number of households, or both.

5.5 “Assets” sheet

The “Assets” sheet records the costs of purchasing, maintaining, and fueling capital assets. These are assets that an organization can use over a period of time greater than one year. If an organization purchases something with the intention to use it for more than one year, it should be classified as a

capital asset. Many assets need regular maintenance. This cost can be estimated as a percentage of the asset value or based on actual records of maintenance costs. Assets are classified into two categories: "Fuel burning assets" and "Non-fuel burning assets". The cost of fuel is captured in this sheet as well.

The following table describes the inputs requested on the sheet "Assets."

Input	Type of input	Explanation
Asset name	Text	Name of the asset that to be purchased
Purchasing		How many units (<i>Qty</i>) of the asset are purchased?
- Qty (Quantity)	Number	In what year (<i>Year</i>) is the asset purchased?
- Year	Calendar year	
Purchasing cost		Cost per unit of the asset. Enter total cost into the column " <i>Amount</i> " and select currency from the drop-down box in the column " <i>Currency</i> " (if nothing selected, defaults to local currency).
- Currency	- Dropdown list	
- Amount	- Number	
Lifespan	Number	Number of years that the asset is expected to be in use.
Replacement	Check box	Checked means that the assets will be replaced at the end of their lifespan. This will automate expenditure for repurchasing of the assets.
Maintenance / year		Cost of maintenance estimated either as a percentage of the initial value of the assets (example: if the asset was purchased for \$1,000 and you estimate the cost of maintenance is \$50, then the maintenance cost is 5%) or as actual expenditures.
- %	- Percentage	
- Actual	- Number	
Fuel consumed per year		The amount of fuel needed each year of an asset's lifespan. This is specific to the category of fuel burning assets.
- Type of fuel	- Dropdown list	- <i>Type of fuel</i> (type of fuel required)
- Qty	- Number	- <i>Qty</i> (The amount of fuel needed for one year, in units defined previously on the sheet " <i>General</i> ")
% role in Functions	Percentage	Use of assets for each function
Cost Classification (costs of accessing carbon funding)	Dropdown list	Classifies costs according to whether they are required only to access climate mitigation or carbon funding, only for other activities unrelated to accessing carbon funding, or both. Users select from a dropdown list.
Fixed/Variable Cost	Dropdown list	Classifies costs according to whether they are fixed or variable. Fixed costs are further categorized according to whether they are incurred only by first-mover REDD+ projects or every REDD+ project. For variable costs, the user selects if the cost is subject to economies of scale, and if so, the primary driver of such economies of scale: number of hectares, number of households, or both.

5.6 “Travel” sheet

Travel costs includes transportation, meals and accommodation of the traveling personnel. Travel costs are often for a specific activity and therefore input in the sheet “Activity”. The “Travel” sheet is only for travel costs that are not associated with one particular activity, but rather travel for a range of activities combined, or for the project overall.

The following table describes the inputs requested on the sheet “Travel”.

Input	Type of input	Explanation
Travel cost description/Activity	Text	Name of the trip with brief explanation of its purpose.
Region	Dropdown list	Destination or region of the trip. Selected from a dropdown list created under travel assumptions in the “General” sheet.
# of trip per year	Number	The number of trips to that region in a year
# of people per trip	Number	The number of staff who travel to that region every trip. This is used to calculate the number of tickets needed per trip.
# of days per trip	Number	The number of days for a trip, used to calculate per diem and lodging cost of a trip.
Transportation Name	Dropdown list	Type of transportation selected from a dropdown list created under travel assumptions in the sheet “General”.
Lump cost per trip		
- Currency	Dropdown list	Alternative way to enter total cost of a trip that cannot be estimated based on the assumptions about transportation, per diem, and lodging costs given in the “General” sheet. Enter total cost in the “Amount” column and select currency from the dropdown list in the “Currency”. If no currency is selected, the model defaults to local currency. This total lump sum cost per trip will be added to any automated calculation of costs in the same row (from cells above).
- Amount	Number	
When incurred? (in year)		
- First incurred	Calendar year	<i>First incurred</i> is the first year in which this type of trip is needed.
- Frequency	Dropdown list	<i>Frequency</i> is how often the trip is needed (every year, every two years, and so on). If not completed, the default assumption is that trips are only made in one year.
- No longer needed	Calendar year	<i>No longer needed</i> is the first year in which trips are no longer made.
% role in Functions	Percentage	Purpose of trips distributed across functions.
Cost Classification (costs of accessing carbon funding)	Dropdown list	Classifies costs according to whether they are required only to access climate mitigation or carbon funding, only for other activities unrelated to accessing carbon funding, or both. Users select from a dropdown list.
Fixed/Variable Cost	Dropdown list	Classifies costs according to whether they are fixed or variable. Fixed costs are further categorized according to whether they are incurred only by first-mover REDD+ projects or every REDD+ project. For variable costs, the

Input	Type of input	Explanation
		user selects if the cost is subject to economies of scale, and if so, the primary driver of such economies of scale: number of hectares, number of households, or both.

5.7 “Others” sheet

The “Others” sheet captures overhead costs such as occupancy, fees and taxes, as well as miscellaneous costs. These costs are commonly for general purposes and not related to specific activities.

Katingan Project Financial Model
OCCUPANCY & MISCELLANEOUS INPUT

Note: Select the row data (or just a cell) and then click "New" button to add/insert a new row data or click "Delete" button to delete the row selected.

Links: [Menu](#) [Summary](#)

FUNCTIONS
 Policy and Planning (A) Community Development (E)
 Protection and Enforcement (B) Information, Education & Communication (F)
 Ecosystem Restoration (C) Marketing (G)
 Methodology Development and MRV (D) Finance and Administration (H)
 Non-function (H)

Item	Cost name / description	Year Period		Currency	Amount	% role in Functions									Cost Classification (Emission)	Fixed/Variable Cost	
		Start	End			A	B	C	D	E	F	G	H	I			
OCCUPANCY COST																	
1	Utility (Electricity and Water)	2014	2033	IDR	30,000,000										100%	Other	Fixed cost
2	Radio Fee & Supplies	2014	2033	IDR	6,000,000										100%	Other	Fixed cost
3	Telephone	2014	2033	IDR	24,000,000										100%	Other	Fixed cost
4	Satellite connectivities	2014	2033	IDR	20,000,000										100%	Other	Fixed cost
5	Office Rental - pre-concession	2010	2013	IDR	18,000,000										100%	Other	Fixed cost
6	Office Rental	2013	2016	IDR	50,000,000										100%	Other	Fixed cost
7	Mendawai Office Rental	2014	2033	IDR	18,000,000										100%	Other	Fixed cost
8																	
FEE & TAXES COST																	
1	Concession Fee	2013	2013	IDR	16,547,812,500										100%	Other	Variable cost (economies of s
2	Land Tax	2014	2033	IDR	541,275,000										100%	Other	Variable cost (economies of s
3	Concession Fee (additional for 49,000 ha)	2015	2015	IDR	7,350,000,000										100%	Other	Variable cost (economies of s
4	Land Tax (additional for 49,000 ha)	2016	2033	IDR	245,000,000										100%	Other	Variable cost (economies of s
5																	
MISCELLANEOUS COST																	
1																	
2																	
3																	
4																	

5.7.1 Occupancy

Occupancy includes the costs associated with occupying certain buildings and spaces.

Input	Type of input	Explanation
Cost description	Text	Name or description of the cost associated with occupying certain buildings and spaces (office rent, utility bills, etc.).
Time Period	Calendar year	The first (<i>Start</i>) and last (<i>End</i>) year this cost is paid.
- Start		
- End		
Cost / year		Total cost in a year. Enter total cost in the " <i>Amount</i> " column and select a currency from the dropdown list in the " <i>Currency</i> " column. If left blank, local currency will be used as a default.
- Currency	- Dropdown list	
- Amount	- Number	
% role in Functions	Percentage	Distribution of occupancy cost by function
Cost Classification (costs of accessing carbon funding)	Dropdown list	Classifies costs according to whether they are required only to access climate mitigation or carbon funding, only for other activities unrelated to accessing carbon funding, or both.
Fixed/Variable Cost	Dropdown list	Classifies costs according to whether they are fixed or variable. Fixed costs are further categorized according to whether they are incurred only by first-mover REDD+ projects or every REDD+ project. For variable costs, the user selects if the cost is subject to economies of scale, and if so, the primary driver of such economies of scale: number of hectares, number of households, or both.

5.7.2 Fees and taxes

Each item (a single row of data) requires the following data input:

Input	Type of input	Explanation
Cost description	Text	Name or description of the fee or tax
Time Period	Calendar year	The first (<i>Start</i>) and last (<i>End</i>) year this cost is paid.
- Start		
- End		
Cost / year		Total cost in the "current year" as defined on the "General" tab. The monetary amount should be entered in the column "Amount" and the currency selected in the column "Currency" (currency options are input in the general tab). If no currency is selected, the default is the local currency.
- Currency	- Dropdown list	
- Amount	- Number	
% role in Functions	Percentage	Distribution of fees or taxes across functions.
Cost Classification (costs of accessing carbon funding)	Dropdown list	Classifies costs according to whether they are required only to access climate mitigation or carbon funding, only for other activities unrelated to accessing carbon funding, or both. Users select from a dropdown list.
Fixed/Variable Cost	Dropdown list	Classifies costs according to whether they are fixed or variable. Fixed costs are further categorized according to whether they are incurred only by first-mover REDD+ projects or every REDD+ project. For variable costs, the user selects if the cost is subject to economies of scale, and if so, the primary driver of such economies of scale: number of hectares, number of households, or both.

Within the "Fees and Taxes" subsection, line item numbers one and two are specific to ERC projects in Indonesia. Line item one is used to display the cost of the concession in accordance with the assumptions that are described on the "General" sheet, and Item 2 is used to display the taxes due to the Indonesian government each year. The projected costs of items 1 and 2 are based on Indonesian rules as of 2015, with no adjustment for inflation. Additional lines can be used to record other fees or taxes or to make inflation adjustments as desired.

5.7.3 Miscellaneous

Miscellaneous are any costs that do not fall in the previous categories. Each input requested for miscellaneous costs on the "Other" sheet is described in the table below.

Input	Type of input	Explanation
Cost description	Text	Name or description of the miscellaneous cost
Year Period	Calendar year	The first (<i>Start</i>) and last (<i>End</i>) year that this cost is incurred.
- Start		
- End		
Cost / year		Enter total annual cost in the "Amount" column and select a currency from the dropdown list in the "Currency" column. If a currency is not selected, the model will default to local currency.
- Currency	- Dropdown list	
- Amount	- Number	
% role in Functions	Percentage	Distribution of miscellaneous costs across functions
Cost Classification (costs of accessing carbon funding)	Dropdown list	Classifies costs according to whether they are required only to access climate mitigation or carbon funding, only for other activities unrelated to accessing carbon funding, or both. Users select from a dropdown list.

Input	Type of input	Explanation
Fixed/Variable Cost	Dropdown list	Classifies costs according to whether they are fixed or variable. Fixed costs are further categorized according to whether they are incurred only by first-mover REDD+ projects or every REDD+ project. For variable costs, the user selects if the cost is subject to economies of scale, and if so, the primary driver of such economies of scale: number of hectares, number of households, or both.

5.8 “Activities” sheet

The “Activities” sheet provides a means to record costs that are tracked by activity in project accounts. These may include the costs of contractors, supplies and materials, fuels, travel and miscellaneous. Personnel are not included here, because the assumption is that they are hired to work on the project and not just discrete activities. The format for entering these costs is quite different from the other input sheets. On this sheet, costs for a given activity are entered in groups of rows under the row containing the name of that activity. The user can click the sign “+” on the left side to open a group of rows for input and click the sign “-” to condense rows.

The input requested on this sheet is described in the following table.

Input	Type of input	Explanation
Activity name	Text	Name of activity
# of activity per year	Number	Number of times that activity is conducted in a year
when incurred (In year):	Calendar year	<i>First incurred</i> is the first year the activity is conducted. <i>Frequency</i> indicates how often the activity is carried out (every year, every two years, and so on). If not completed, the model assumes that the activity lasts for just one year. <i>No longer needed</i> is the year that the activity is no longer conducted.
- First incurred		
- Frequency		
- No longer needed		
% role in Functions	Percentage	Distribution of each cost across project functions
Cost Classification (costs of accessing carbon funding)	Dropdown list	Classifies costs according to whether they are required only to access climate mitigation or carbon funding, only for other activities unrelated to accessing carbon funding, or both. Users select from a dropdown list.
Fixed/Variable Cost	Dropdown list	Classifies costs according to whether they are fixed or variable. Fixed costs are further categorized according to whether they are incurred only by first-mover REDD+

Input	Type of input	Explanation
		projects or every REDD+ project. For variable costs, the user selects if the cost is subject to economies of scale, and if so, the primary driver of such economies of scale: number of hectares, number of households, or both.
<u>Input inside the group:</u>		
Cost description	Text	Description of each cost (for contractor, supplies, fuel, travel and miscellaneous).
Unit	Text	Measurement unit for each cost.
Currency	Dropdown list	Currency of each cost. If not completed, model assumes that costs are entered in the local currency.
Amount		Monetary cost per unit.
Qty per act. (Quantity per activity)	Number	Number of units needed for an activity.

Up to 80 individual costs can be entered into the sheet “Activities.” In tests with REDD+ projects in Brazil, Indonesia, and Tanzania, this was more than sufficient.

6. Output Sheets

The projections and outputs are provided in a variety of formats (e.g., charts, graphs) and in a variety of ways (e.g., costs broken down by function or by budget categories; reported in local currency or dollar values). Output currency can be selected in the “General” tab, along with other assumptions.

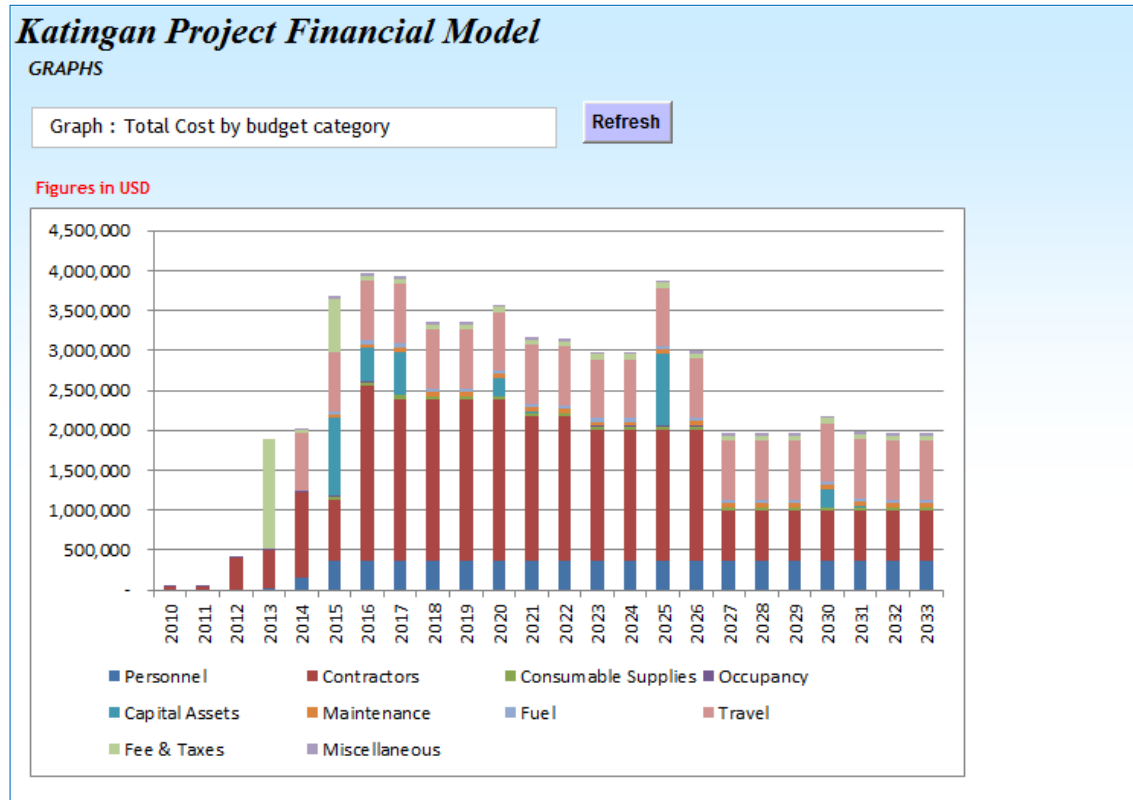
6.1 Sheet “Summary”

The Summary sheet tabulates all costs incurred and projected over the project lifetime, reported in the currency and the current year defined on the general sheet. No input is required directly into this sheet. Annual costs are reported by cost category and by function. The user needs to (1) choose a summary option from the dropdown box at the top of the sheet, (2) click “update calculation,” and (3) scroll down/up to see detailed cost information.

Katingan Project Financial Model											
SUMMARY											Summary Options
											Total Cost
UPDATE CALCULATION											
Year projection -->											
Figures in USD	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
TOTAL ALL COST											
BY FUNCTIONS	43,167	43,167	401,500	1,892,901	2,013,523	3,674,124	3,968,540	3,928,540	3,358,540	3,358,540	3,577,124
A Policy and Planning	-	-	233,333	233,333	208,333	-	-	-	-	-	-
B Protection and Enforcement	-	-	-	2,708	33,875	652,517	252,136	269,636	187,731	187,731	228,838
C Ecosystem Restoration	-	-	-	2,708	102,208	411,056	1,602,758	1,453,991	1,400,020	1,400,020	1,429,877
D Methodology Development and MRV	-	-	125,000	48,708	501,375	518,181	543,216	477,383	423,812	423,812	453,669
E Community Development	-	-	-	173,708	195,208	281,368	430,154	447,654	394,083	394,083	423,523
F Information, Education & Communication	-	-	-	2,708	10,208	96,368	78,487	95,987	42,416	42,416	71,856
G Marketing	-	-	-	-	561,667	619,660	576,779	769,279	549,041	549,041	578,481
H Finance and Administration	43,167	43,167	43,167	1,429,026	400,648	1,094,974	485,010	415,010	361,439	361,439	390,879
BY BUDGET CATEGORY	43,167	43,167	401,500	1,892,901	2,013,523	3,674,124	3,968,540	3,928,540	3,358,540	3,358,540	3,577,124
1 Personnel	-	-	-	24,917	156,083	357,583	357,583	357,583	357,583	357,583	357,583
2 Contractors	41,667	41,667	400,000	483,333	1,060,833	769,167	2,202,500	2,035,833	2,020,833	2,020,833	2,020,833
3 Consumable Supplies	-	-	-	-	11,250	43,070	43,070	43,070	43,070	43,070	43,070
4 Occupancy	1,500	1,500	1,500	5,667	12,333	12,333	12,333	8,167	8,167	8,167	8,167
5 Capital Assets	-	-	-	-	-	982,333	426,667	541,667	-	-	218,583
6 Maintenance	-	-	-	-	-	29,994	38,828	54,661	54,661	54,661	54,661
7 Fuel	-	-	-	-	11,250	43,070	43,070	43,070	43,070	43,070	43,070
8 Travel	-	-	-	-	715,000	749,000	749,000	749,000	735,667	735,667	735,667
9 Fee & Taxes	-	-	-	1,378,984	45,106	657,606	65,523	65,523	65,523	65,523	65,523
10 Miscellaneous	-	-	-	-	1,667	29,967	29,967	29,967	29,967	29,967	29,967

6.2 “Graphs”

The sheet “Graphs” generates graphical representations of the output data in the summary sheet, including costs over time by budget category and by function. The graphs available for a given model are listed and can be chosen from the dropdown menu in Cell “B4.” After clicking the “Refresh” button, the selected graph will appear. If there are any changes in the input data (e.g., new cost estimates or correction of data entry errors), then the user must first click the “update calculation” button on the “summary” sheet before clicking “refresh” on this sheet to obtain the updated figure.



7. References

Conservation and Community Investment Forum (CCIF) (2011) *CCIF REDD+ Framework and Cost Model* (Brief). Clinton Climate Initiative and Starling Resources.

Madeira, E. M., Sills, E., Brockhaus, M., Verchot, L. V., & Kanninen, M. (2010). *What is a REDD+ pilot?: a preliminary typology based on early actions in Indonesia* (No. CIFOR Infobrief no. 26, p. 8p). Center for International Forestry Research (CIFOR), Bogor, Indonesia.

Sills, E. O., Atmadja, S. S., de Sassi, C., Duchelle, A. E., Kweka, D. L., Resosudarmo, I. A. P., & Sunderlin, W. D. (Eds.). (2014). *REDD+ on the ground: A case book of subnational initiatives across the globe*. Center for International Forestry Research (CIFOR), Bogor, Indonesia.

Contact Information

The model is provided “as is” with no guarantee of performance. However, we welcome your comments, questions, and suggestions. These should be directed to Erin Sills, sills@ncsu.edu, or Noah Greenberg, noah@starlingresources.com.