GREEN VALUE
A Tool for Simplified Financial Analysis of Forest - Based Initiatives

Green Value: A tool for simplified financial analysis of forest-based initiatives

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USAID FROM THE AMERICAN PEOPLE

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Background

GREEN VALUE
A Tool for Simplified Financial Analysis of Forest - Based Initiatives

- From 2006 – 2008, Shoana Humphries and Dr. Thomas Holmes (US Forest Service) investigated the financial viability and socio-economic impacts of new forest enterprises in Brazil.
- They turned their research method into a financial analysis tool, which became Green Value.
- From 2012 – 2017, the Strengthening Community-based Forest Enterprises in the Amazon Region project was implemented through Earth Innovation Institute.
- Green Value is now being promoted in the US and around the globe.

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What?

Green Value provides a **method** and **materials** for monitoring and analyzing costs and income:

- different types of products and/or services
- 1 to 3 products at a time
- 1 to several production cycles

Simplified approach with six steps

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What?

Green Value – *additional points*

- Users are encouraged to include all costs
  - subsidized machinery/equipment
  - training
  - technical assistance.
- NOT intended to replace accounting systems.

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Who?

Designed for forest-based initiatives (FIs), including:

- family forest owners / farmers
- community associations / enterprises
- small to medium scale forest enterprises
- cooperatives
- other private businesses (consultants, contractors, etc.)
- ** can be at different points in value chains.

Users include:

- administrators
- collaborators (e.g., from NGOs, government agencies, aid programs)
- service providers (e.g., consultants, contractors)
- researchers.

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Why?

- **Strengthen forest-based initiatives** with regard to:
  - management capacity (financial information, decisions, transparency)
  - long-term viability and sustainability.
- **Increase awareness** within the forestry sector about the role of FIs in:
  - local development (financial benefits)
  - management of forests and other natural resources.

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Why?

- **Motivate** governments, donors, industries, and other collaborators to:
  - invest in FIs: credit, technical assistance, purchases
  - improve the context in which FIs operate: illegal markets, inappropriate and/or conflicting policies, highly bureaucratic systems, poor infrastructure.

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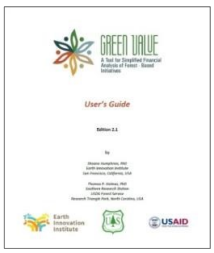
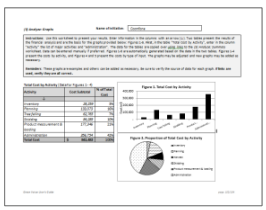
How?

The tool comprises a **User's Guide & pre-formatted worksheets** for each step.





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How?

The **worksheets** are used to organize financial information by

- costs
  - activity: 3 – 5 main productive activities + administrative activities
  - types of inputs: labor, materials/services, and machinery/equipment
- income
  - sales
  - other sources of income.

The **worksheets** are completed for each productive period (maximum 1 year).

How?

Options:

- The worksheets are adaptable for each FI.
- The Net Present Value worksheet can be used to analyze results for multiple productive periods.
- Once you have complete cost and income information, Green Value can be used to run alternative scenarios.

Diverse products/services analyzed to date

Timber products:

- Standing trees
- Logs in forest and in the patio
- Lumber
- Finished products

NTFPs and services:

- Artisan textiles
- Bamboo
- Brazil nut
- Natural latex
- Agricultural crops
- Fruit pulp
- Freshwater fishery
- Ecosystem services
- Tourism

Photos: EII

Potential uses in the US

- Timber harvests in natural forests or plantations
- Firewood
- Agroforestry systems
- Silvo-pastoral models
- Non-timber forest products (e.g., pine straw, mushrooms)
- Services (e.g., hunting, fishing, environmental services)

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Example from Latin America

Producer: community enterprise in Latin America

Product: dimensional lumber from a natural forest

Time period: 1 year

Activities:

(1) Plan
(2) Fell trees
(3) Tree removal
(4) Log measurement/transport
(5) Milling
+ Administrative costs

Note: the financial information shown in the following worksheets has been modified and is not from any particular community forest enterprise in Latin America.

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(2, 3) Enter: Labor (Time) **Name of Initiative**:

Instructions: Use this worksheet for the "Time" option to enter information about temporary workers for each major activity related to the product being analyzed (e.g., Inventory, Harvesting, etc.), as defined in Step 1. .....

Activity: (1) Plan **Supervisor:** Carlos

eneral Informatio			Workers											
First day of the week			Name of Worker	Position	Days Worked (1 = one complete day, 0.5 = half day, 0 = did not work)							Subtotal of Days Worked	Daily Wage ($)	* Subtotal of Wages ($)
Day	Mo.	Year			M	T	W	Th	F	Sat	Sun	Sum		
1	5	13	Joaquin	Compass operator	1	1	1	1	1	0	0	5	90.00	450.00
1	5	13	Jaime	Machete operator	1	1	1	1	1	0	0	5	85.00	425.00
1	5	13	Laura	Tree identifier	1	1	1	1	1	0	0	5	100.00	500.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
											Subtotals per activity	15		$ 1,375.00

Activity: (2) Fell trees **Supervisor:** Enrique

eneral Informatio			Workers											
First day of the week			Name of Worker	Position	Days Worked (1 = one complete day, 0.5 = half day, 0 = did not work)							Subtotal of Days Worked	Daily Wage ($)	* Subtotal of Wages ($)
Day	Mo.	Year			M	T	W	Th	F	Sat	Sun	Sum		
1	7	13	Beto	Chainsaw operato	1	1	1	1	1			5	100.00	500.00
1	7	13	Clara	Assistant	1	1	1	1	1			5	85.00	425.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
											Subtotals per activity	10		$ 925.00

(2,3) Enter: Mat-Services **Name of Initiative**:

Instructions: Use this worksheet to enter data for Materials (e.g., aluminum tags, gasoline, oil) and Services (e.g., preparation of Annual Operating Plan, training) for each activity related to forest management (e.g., Inventory, Harvesting, etc.), as defined in Step 1. ****Materials are items that last less than one year or harvest season.**** .....

Activity: (1) Plan Supervisor: Carlos

Date			Cost Data				
Day	Mo.	Year	Item	Unit	Quantity	Price / Unit ($)	* Subtotal Cost ($)
1	3	2013	spray paint	box	20	108.00	2,160.00
1	3	2013	markers	box	10	48.00	480.00
1	3	2013	waterproof paper sheets	individual	24	8.00	192.00
...	...	...	...	...	...	...	...
						Subtotal per activity	**$ 2,832.00**

Activity: (2) Fell trees Supervisor: Enrique

Date			Cost Data				
Day	Mo.	Year	Item	Unit	Quantity	Price / Unit ($)	* Subtotal Cost ($)
1	7	2013	fuel	gallon	64	36.00	2,304.00
1	7	2013	oils	liters	12	50.00	600.00
1	7	2013	chainsaw chains	individual	4	360.00	1,440.00
...	...	...	...	...	...	...	...
						Subtotal per activity	**$ 4,344.00**

(2,3) Enter: Mach-Equip Ph. 1 **Name of Initiative**:

Instructions: Use this worksheet for entering data for Machinery and Equipment ....

* Total Cost = Quantity x Price / Unit
** Depreciation Cost = Total Cost / Useful life

Date			Machinery and Equipment							Activity in which Item was Used		
Day	Mo.	Year	Item	Unit	Quantity	Price / Unit ($)	* Total Cost ($)	Useful Life (in # of years or productive periods)	** Depreciation Cost ($)	*(1) Plan*	*(2) Fell trees*	...
1	1	2011	chainsaws	individual	5	5,500.00	27,500.00	3	9,166.67	√	√	
1	1	2011	helmets	individual	25	60.00	1,500.00	5	300.00		√	
1	1	2012	GPS	individual	1	4,900.00	4,900.00	5	980.00	√		
...	...	...	...	...	...	...	...	...	...	...	...	
						Total Cost of Machinery & Equipment	**$ 33,900.00**	**Total Depreciation Cost**	**$ 10,446.67**			

(2,3) Enter: Sales

Name of Initiative:

Instructions: Use this worksheet to enter monitoring data for the sale of products and/or services. .....

* Subtotal Revenue = Quantity Sold x Price / Unit Sold

Revenues from sales

Date			Name of Buyer	Product	Description of Product or Service (species, value group)	Quality Grade	Unit of Product or Service Sold (m^3, kg, liters)	Quantity Sold	Price / Unit Sold ($)	* Subtotal Revenue ($)
Day	Mo.	Year								
1	8	13	Lumber Inc.	Dimensional lumber	tropical hardwood	2	BF	246.00	7.50	1,845.00
1	8	13	Lumber Inc.	Dimensional lumber	tropical hardwood	1	BF	3,648.00	10.00	36,480.00
1	8	13	Carpentry shop	Wood residues	tropical hardwood	other	BF	35.00	0.30	10.50
...	...	...	...	...	...	...	...	...	...	...
							Total	3,929.00		**$ 38,335.50**

Other sources of income

Date			Name of source of income	Description of the type of income	Amount of income	* Subtotal Other Income ($)
Day	Mo.	Year				
			none			-
						-
						-
				Total		**$ -**

(5) Analyze: Summary

Costs by Activity and Input Type (USD)

Activity	Labor	Materials and Services	Machinery and Equipment	Subtotal Cost ($)	Percent	Average Cost per unit ($)
(1) Planning	44,550	22,507	5,061	**72,118**	4%	0.26
(2) Fell trees	17,410	16,584	574	**34,568**	2%	0.13
(3) Tree removal	21,750	200,860	1,972	**224,582**	11%	0.82
(4) Log measurement/ transport	8,250	198,580	6,236	**213,066**	11%	0.78
(5) Milling	117,804	41,742	98,215	**257,761**	13%	0.94
Administration	507,347	390,966	255,240	**1,153,553**	59%	4.20
Subtotal Cost	**717,111**	**871,239**	**367,298**	**1,955,649**	**100%**	**7.13**
Percent	**37%**	**45%**	**19%**			

Revenue, Net Revenue, Rate of Return

Financial Indicator	Value
Total Revenue	2,542,344
Total Costs	1,955,649
Net Revenue (Profit)	**586,695**
Rate of Return	**30%**

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Cost per activity in $ and %

Cost per type of input in $ and %

Total cost

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The amount that the FI must save to replace equipment in the future

Cost per unit sold

Critical information for forest-based initiatives

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Income for workers and local families

Income for local businesses

Critical information for collaborators, donors, researchers, governments

Financial viability

Other examples

- In a community pine plantation in Peru, the edible mushrooms that appear in the plantations are more lucrative than the trees.
- In Colombia, official papers for permission to transport timber (which cost 5 times as much as fake ones) increased total cost for an intermediary by 16% (USD 46,000). Fake papers generate zero revenue for the state and interrupt the legal chain of custody.
- A bamboo enterprise in Ecuador was able to increase profitability by 43% after purchasing machinery to replace labor.

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Example of potential use in the US

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Example of potential use in the US: silvopastoral system

Producer: landowner in Southeastern US

Products: timber and calves

Time period: 16 years

Phases of production for each product:

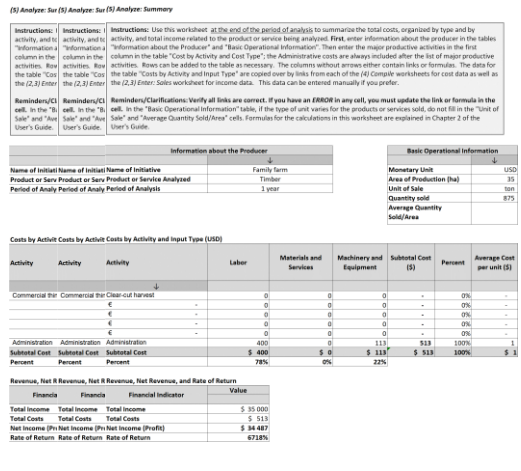
	Timber			Calves			
Year	Second thin	Third thin	Final harvest	Establish pasture	Improve pasture	Spray and Burn	Graze and Maintain
2012	X			X			
2013					X		X
2014					X		X
2015							X
2016							X
2017							X
2018							X
2019							X
2020		X				X	X
2021							X
2022							X
2023							X
2024							X
2025							X
2026							X
2027			X				X

Example of potential use in the US: silvopastoral system

A set of worksheets was completed for each phase of activities for each product.

Timber – 3 phases

Calves – 4 phases



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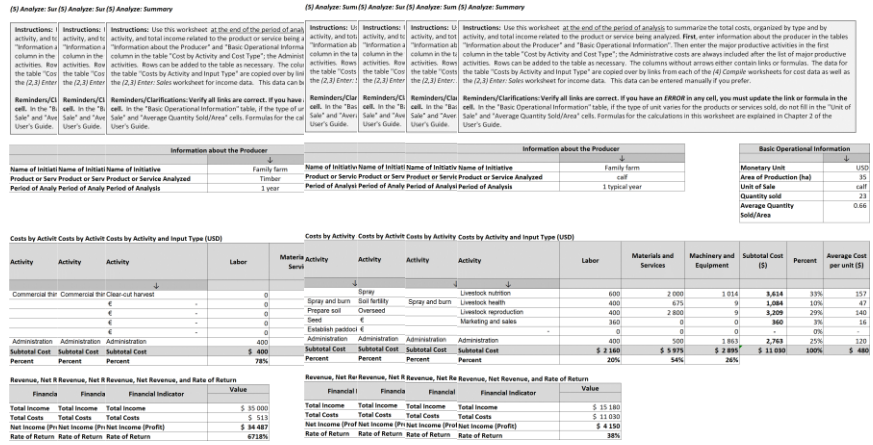

Example of potential use in the US: silvopastoral system

Net Present Value for Multiple Productive Periods **Name of Initiative:**

Instructions: This worksheet ....

$$* Net\ Present\ Value\ (NPV) of\ Total\ Cost = \frac{\text{Total Cost}}{(1 + \text{Discount rate})^{\text{years}}}$$

Number of years 16
Discount rate 5%

Data entered by (Name):
Data entered on (Date):

	Timber			Calves			Overall		
Year	Total Cost	Total Income	Net Income	Total cost	Total Income	Net Income	Total cost	Total Income	Net Income
2012	35,776.00	10,500.00	(25,276.00)	15,899.00	-	(15,899.00)	51,675.00	10,500.00	(41,175.00)
2013	-	-	-	16,950.00	15,180.00	(1,770.00)	16,950.00	15,180.00	(1,770.00)
2014	-	-	-	16,950.00	15,180.00	(1,770.00)	16,950.00	15,180.00	(1,770.00)
2015	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2016	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2017	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2018	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2019	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2020	776.00	13,125.00	12,349.00	12,946.00	15,180.00	2,234.00	13,722.00	28,305.00	14,583.00
2021	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2022	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2023	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2024	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2025	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2026	-	-	-	11,030.00	15,180.00	4,150.00	11,030.00	15,180.00	4,150.00
2027	513.00	35,000.00	34,487.00	11,030.00	15,180.00	4,150.00	11,543.00	50,180.00	38,637.00
Total	**37,065.00**	**58,625.00**	**21,560.00**	**195,105.00**	**227,700.00**	**32,595.00**	**232,170.00**	**286,325.00**	**54,155.00**
Net Present Value*	**$34,807.61**	**$34,494.40**	**($313.21)**	**$135,896.34**	**$150,060.20**	**$14,163.85**	**$170,703.95**	**$184,554.59**	**$13,850.64**
Rate of Return			**-1%**			**10%**			**8%**

Note: Costs and returns shown here do not represent any particular individual's true values.

Options for using Green Value

GREEN VALUE
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- Download the User's Guide and worksheets, and follow instructions
  - 1 product/service or multiple
  - Simple or Advanced version (Choose Simple to start out)
  - ❖ Optional: Net Present Value worksheet
- Organize a Green Value workshop with partners (e.g., state forestry associations, extension agents, continuing education programs).
- Teach others how to use Green Value with the Facilitator's Kit.
- **All materials are available in English, Spanish, and Portuguese.

We love to receive feedback on Green Value materials and results.

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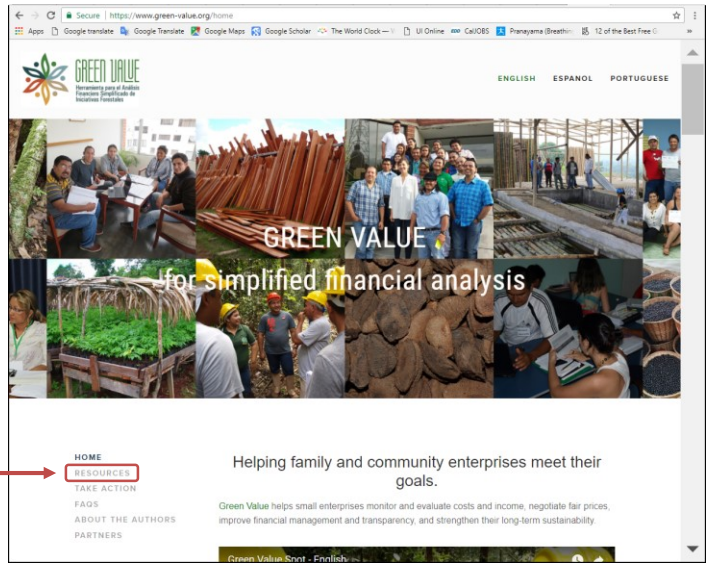

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Next steps

- ❑ Identify partners to carry out trainings and follow-up activities in the US and other countries
- ❑ Secure funding to develop a Green Value smartphone application (we have the design!)

Please let us know if you would like to work with us!

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Acknowledgements

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Thank you!

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