

# Latin America Climate-Smart Villages AR4D sites: 2016 Inventory



RESEARCH PROGRAM ON  
Climate Change,  
Agriculture and  
Food Security



## CGIAR Centers



## Implementing partners



## Local partners



Asociación de Juntas de Acción Comunal del Noroccidente de Popayán, Cauca.

## Citation

Bonilla-Findji, O, Alvarez-Toro P, Martinez-Baron D, Ortega LA, Leguia-Hidalgo E, Aguilar A, Paz L, Suchini JG. 2017. Latin America Climate-Smart Villages AR4D sites: 2016 Inventory. Wageningen, The Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).



# Inventory of CSA practices in Latin America's Climate-Smart Villages



RESEARCH PROGRAM ON  
Climate Change,  
Agriculture and  
Food Security



**Total Practices: 9** .... with mitigation potential: **3**



Gender impact assessed for **2**



Potential gender impact known for **4**

CSA sub-Practice	Mitigation potential	Country	CSV AR4D sites	Crop	Implemented	Evaluated	Impl. & Evaluated	# of Hholds	Gender Assessed	Potential gender impacts
<b>Crop Residue retention / incorporation</b>	x	Colombia	Cauca	Coffee, beans, maize	-	x	-	20	-	-
<b>Improved Varieties</b>	-	Colombia	Cauca	Beans	-	x	-	20	-	-
		Honduras	Santa Rita	Beans	-	x	-	10	-	x
		Guatemala	Olopa	Maize, beans	-	-	x	10	-	x
		Nicaragua	El Tuma la Dalia	Beans	-	-	x	28	-	x
<b>New cropping system &amp; additional crops (Home gardens)</b>	-	Colombia	Cauca	Vegetables	-	-	x	40	x	x
		Honduras	Santa Rita		x	-	-	33	-	x
		Guatemala	Olopa		x	-	-	32	-	x
		Nicaragua	El Tuma la Dalia		x	-	-	28	x	x
<b>Irrigation</b>	-	Colombia	Cauca	Home gardens	-	x	-	90	-	x
<b>Mutli-strata</b>	x	Colombia	Cauca	Coffee, beans	x	-	-	50	-	-
<b>Organic Fertilizer</b>	-	Colombia	Cauca	Coffee, beans, maize	-	x	-	20	-	-
		Honduras	Santa Rita	Coffee, Home gardens	x	-	-	18, 33	-	-
		Guatemala	Olopa	Home gardens	x	-	-	32	-	x
		Nicaragua	El Tuma la Dalia	Home gardens	x	-	-	28	x	x
<b>pH Management</b>	-	Honduras	Santa Rita	Coffee	x	-	-	18	-	-
		Colombia	Cauca		x	-	-	10	-	-
<b>Prunings applied to crops</b>	x	Honduras	Santa Rita	Coffee	x	-	-	18	-	-
<b>Water Harvesting</b>	-	Colombia	Cauca	Vegetables	-	x	-	90	-	x



# Inventory of CSA services in Latin America's Climate- Smart Villages



RESEARCH PROGRAM ON  
Climate Change,  
Agriculture and  
Food Security



Market Services	Country	CSV AR4D site	Available	Implemented	Evaluated	# of households	Gender Assessed	Potential gender impacts known
Contract farming	Colombia	Cauca	X	-	-	-	-	-
	Guatemala	Olopa	X	-	-	-	-	-
	Nicaragua	El Tuma la Dalia	X	-	-	-	-	-
Price support	Colombia	Cauca	X	-	-	-	-	-

Financial Services	Country	CSV AR4D site	Available	Implemented	Evaluated	Gender Assessed	Potential gender impacts known
Capacity Building/Technical	Honduras	Santa Rita	X	-	-	-	-
Government Subsidies (during the election period)	Honduras	Santa Rita	X	-	-	-	-
Individual Bank savings	Honduras	Santa Rita	X	-	-	-	-
	Guatemala	Olopa	X	-	-	-	-
Individual (short term) Bank loans	Colombia	Cauca	X	-	-	-	-
Informal individual credits/loans	Honduras	Santa Rita	X	-	-	-	-
	Guatemala	Olopa	X	-	-	-	-
	Nicaragua	El Tuma la Dalia	X	-	-	-	-
Informal group loans	Guatemala	Olopa	X	-	-	-	-
Informal saving groups	Colombia	Cauca	X	-	-	-	-
Value-Chain Finance	Colombia	Cauca	X	-	-	-	-

## Contacts

Regional Program Leader for LAM  
Ana Maria Loboguerrero  
([a.m.Loboguerrero@cgiar.org](mailto:a.m.Loboguerrero@cgiar.org))

Science Officer for LAM  
Deissy Martinez-Baron  
([d.m.baron@cgiar.org](mailto:d.m.baron@cgiar.org))

## Acknowledgments

This CSV inventory was implemented as part of CCAFS Flagship 2 activities under the global and regional coordination of Osana Bonilla-Findji, Deissy Martinez-Baron respectively. We would like to acknowledge the valuable support of our implementing partners Ecohabitats Foundation and CATIE.

1760 m.a.s.l



farm size  
1-2 Ha



1491 HH



9%  
headed



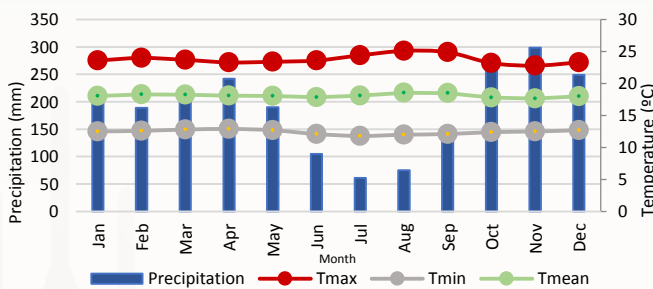
### Main crops and livestock

- Food: Vegetables ♀
- Food/Cash: Beans, Pigs ♀
- Cash: Coffee, Sugar cane, Hen ♀

### Climate-related risks

Higher temperatures, rainy seasons unstable and erratic, more frequent droughts, increased pest and diseases, erosion, frost and forest fires.

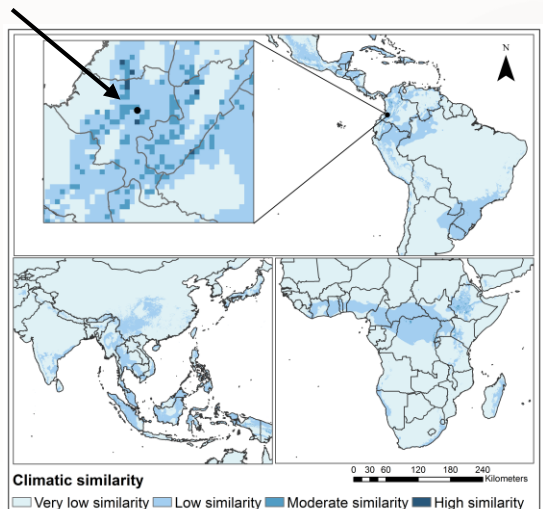
### Climatic conditions



(Source: [www.worldclim.org](http://www.worldclim.org))

### Areas of climatic similarity

**Cauca-CSV**  
2.57 N -76.62 W



Areas whose future projected climate (by 2030) is similar to the current climate in this CSV

(Source: [www.ccafs-analogues.org](http://www.ccafs-analogues.org))

Parameter	Amount	Narrative
Total annual P	2.256 mm	In a single rainy season of 2.015 mm (Sep – May) and a dry season of 241 mm (Jun-Aug)
Max # of consecutive dry months	2 months (< 100 mm)	
Max T rainy season	25 °C	
Max T dry season	25 °C	
Highest min T	13 °C	April

  
1760 m.a.s.l

 **farm size**  
1-2 Ha






 1491 HH



 **9% headed**














## CSA Portfolio

### Field testing and # of households involved (2016)



 Implemented  Evaluated  Implemented & Evaluated  Mitigation potential  Available in Site (Not CCAFS)

 Gender aspect assessed  
 Potential gender impact




#### CSA Practices

-  **Mutli strata** (Coffee, beans) 50 
-  **Water Harvesting** 90 
-  **Improved Varieties** (beans) 20 
-  **Irrigation**  90 
-  **Crop Residue retention/incorpor.** (Coffee, beans, maize) 20 



#### Agro-climatic services

-  **Seasonal forecast**
-  **Management recommendations** by the national coffee federation extension agents

#### Financial services

-  **Value chain finance**
-  **Individual - short term Bank loans**
-  **Informal saving groups**

#### Market incentives

-  **Price support**
-  **Contract farming**

### Flagship projects

- Local to National/Regional synthesis, research and engagement (incl. CSVs in LAM) - P265
- Tailored Agro-Climate Services and food security information for better decision making- P42

### Contacts

Regional Program Leader for LAM **Ana Maria Loboguerrero** ([a.m.Loboguerrero@cgiar.org](mailto:a.m.Loboguerrero@cgiar.org))  
Science Officer for LAM **Deissy Martinez-Baron** ([d.m.baron@cgiar.org](mailto:d.m.baron@cgiar.org))

### Partners



- CIAT
- Ecohabitats Foundation
- \* Corporación Autónoma Regional del Cauca, UMATA, Universidad del Cauca

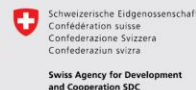
**Asociación de Juntas de Acción Comunal del Noroccidente de Popayán, Cauca.**



CSV profile developed by Osana Bonilla-Findji, Patricia Alvarez-Toro and Julian Ramirez-Villegas

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT). CCAFS brings to scale climate smart agricultural practices, technologies and institutions which contribute to increased food and nutritional security, low emissions development, sustainable landscapes, and increased gender equity.

This work was implemented as part of CCAFS Flagship 2, which is carried out with support from CGIAR Fund Donors and through bilateral funding agreements. For details please visit <https://ccafs.cgiar.org/donors>. CCAFS is supported by:





900 m.a.s.l



farm size  
1-5 Ha



613 HH



17%  
headed



Photo: S. Taleno (CAATIE)

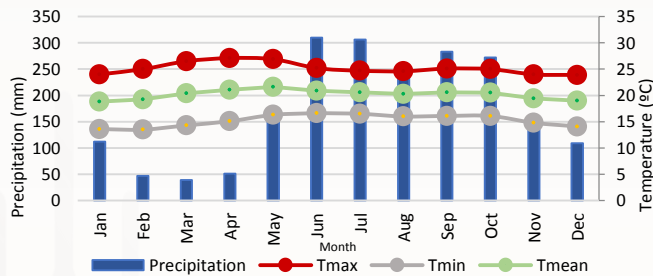
### Main crops and livestock Specific

- Food: Beans, Maize, Minor species
- Food/Cash: Pigs
- Cash: Coffee, cocoa

### Climate-related risks

Drier summer season and intense canicular period.  
Reduction in average monthly rainfall

### Climatic conditions



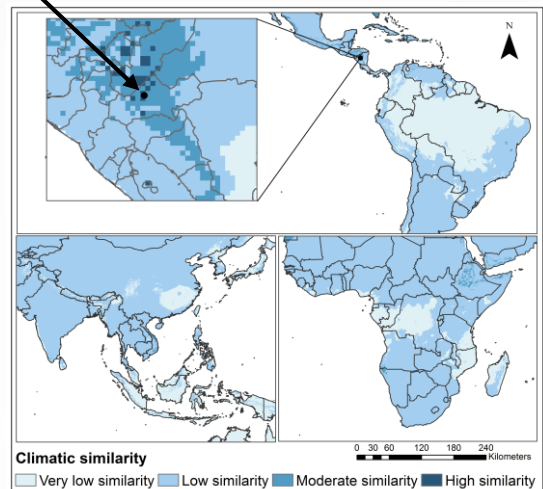
(Source: [www.worldclim.org](http://www.worldclim.org))

### Areas of climatic similarity



El Tuma la Dalia CSV

13.01 N -85.6 W



Areas whose future projected climate (by 2030) is similar to the current climate in this CSV

(Source: [www.ccafs-analogues.org](http://www.ccafs-analogues.org))

Parameter	Amount	Narrative
Total annual P	2.105 mm	In a single rainy season of 1.599 mm (May – Oct) and a dry season of 506 mm (Jan-Apr, Nov-Dec)
Max # of consecutive dry months	3 months (< 100 mm)	
Max T rainy season	26.9 °C	
Max T dry season	27.1 °C	
Highest min T	16.6 °C	June

# Climate-Smart Village

## El Tuma la Dalia (NICARAGUA)



RESEARCH PROGRAM ON  
Climate Change,  
Agriculture and  
Food Security



**900 m.a.s.l**



**farm size**  
1-5 Ha



**613 HH**



**17% headed**



## CSA Portfolio

### Field testing and # of households involved (2016)

♀ Gender aspect assessed  
♀ Potential gender impact

🚩 Implemented   🌱 Evaluated   🚩 Implemented & Evaluated   U Mitigation potential   ▲ Available in Site (Not CCAFS)

#### CSA Practices



- ♀ 🚩 Improved Varieties (beans) 28 🏠
- ♀ 🚩 Organic Fertilizer (home gardens) 28 🏠
- ♀ 🚩 Increased Farm Div. (home gardens) 28 🏠

#### Agro-climatic services



- ▲ Seasonal forecast

#### Financial services



- ▲ Informal individual credits/ loans

#### Market incentives



- ▲ Contract farming

### Flagship projects

- Local to National/Regional synthesis, research and engagement (incl. CSVs in LAM) - P265
- Outscaling a citizen science approach to test climate adaptation options on farms- P43
- Tailored Agro-Climate Services and food security information for better decision making - P42

### Other projects

- Agricultural systems GHG emission measurements
- Gender roles in agroforestry systems in Tuma La Dalia

### Contacts

Regional Program Leader for LAM  
Ana Maria Loboguerrero  
([a.m.Loboguerrero@cgiar.org](mailto:a.m.Loboguerrero@cgiar.org))

Science Officer for LAM  
Deissy Martinez-Baron  
([d.m.baron@cgiar.org](mailto:d.m.baron@cgiar.org))

### Partners



- CATIE
- CIAT
- BIOVERSITY
- ICRAF



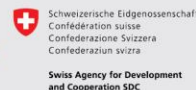
### Other partners working in the CSV:

NITLAPAN, Save the Children, Acción Médica Cristiana, ADDAC.

CSV profile developed by Osana Bonilla-Findji, Patricia Alvarez-Toro and Julian Ramirez-Villegas

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT). CCAFS brings to scale climate smart agricultural practices, technologies and institutions which contribute to increased food and nutritional security, low emissions development, sustainable landscapes, and increased gender equity.

This work was implemented as part of CCAFS Flagship 2, which is carried out with support from CGIAR Fund Donors and through bilateral funding agreements. For details please visit <https://ccafs.cgiar.org/donors>. CCAFS is supported by:





660 m.a.s.l



farm size  
1-5 Ha



479 HH



15%  
headed



Photo: O. Bonilla (CAAFS)

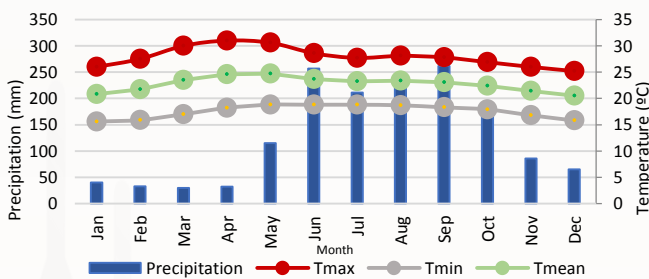
### Main crops and livestock Specific

- **Food:** Maize, Beans, Small animals
- **Food/Cash:** Turkeys, Pigs
- **Cash:** Coffee, Cocoa

### Climate-related risks

Higher temperatures, rainy seasons unstable and erratic, more frequent droughts.

### Climatic conditions



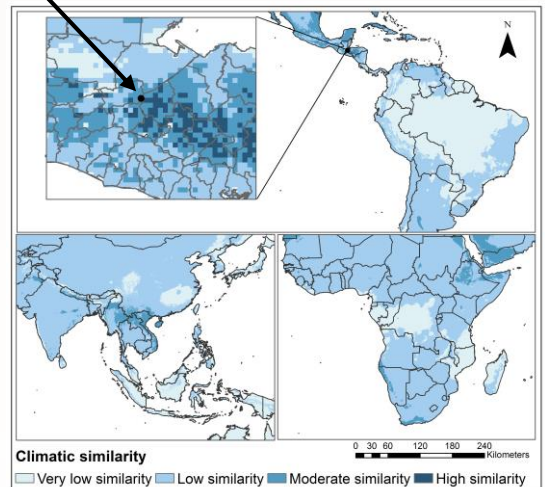
(Source: [www.worldclim.org](http://www.worldclim.org))

### Areas of climatic similarity



Santa Rita CSV

14.99 N -89.2 W



Areas whose future projected climate (by 2030) is similar to the current climate in this CSV

(Source: [www.ccafs-analogues.org](http://www.ccafs-analogues.org))

Parameter	Amount	Narrative
Total annual P	1.533 mm	In a single rainy season of 1.247 mm (May – Oct) and a dry season of 286 mm (Jan-Apr, Nov-Dec)
Max # of consecutive dry months	6 months (< 100 mm)	
Max T rainy season	30.6 °C	
Max T dry season	31.0 °C	
Highest min T	18.8 °C	May, June, July



660 m.a.s.l



**farm size**  
1-5 Ha



479 HH



15%  
headed



## CSA Portfolio

### Field testing and # of households involved (2016)

Implemented  
 Evaluated  
 Implemented & Evaluated  
 Mitigation potential  
 Available in Site (Not CCAFS)

Gender aspect assessed  
 Potential gender impact

#### CSA Practices



- Improved Varieties (beans) 10
- Organic Fertilizer (coffee or home gardens) 51
- Increased Farm Diversity (home gardens) 33
- pH management (coffee) 18
- Tree pruning to crops (coffee) 18

#### Agro-climatic services



- Seasonal forecast

#### Financial services



- Informal individual credits/ loans
- Individual bank savings
- Government subsidies
- Capacity Building- Technical Assistance (Dev. Agencies)

#### Market incentives



None

### Flagship projects

- Local to National/Regional synthesis, research and engagement P262
- Tailored Agro-Climate Services and food security information for better decision making - P42
- Outscaling a citizen science to test climate adaptation options - P43

### Contacts

Regional Program Leader for LAM  
Ana Maria Loboguerrero  
([a.m.Loboguerrero@cgiar.org](mailto:a.m.Loboguerrero@cgiar.org))

Science Officer for LAM  
Deissy Martinez-Baron  
([d.m.baron@cgiar.org](mailto:d.m.baron@cgiar.org))

### Partners



- CATIE
- CIAT
- BIOVERSITY
- ICRAF
- IRI, Columbia University
- Mancorsaric
- Plan Trifinio Executive Secretariat



CSV profile developed by Osana Bonilla-Findji, Patricia Alvarez-Toro and Julian Ramirez-Villegas

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT). CCAFS brings to scale climate smart agricultural practices, technologies and institutions which contribute to increased food and nutritional security, low emissions development, sustainable landscapes, and increased gender equity.

This work was implemented as part of CCAFS Flagship 2, which is carried out with support from CGIAR Fund Donors and through bilateral funding agreements. For details please visit <https://ccaafs.cgiar.org/donors>. CCAFS is supported by:

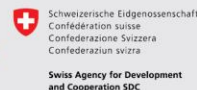
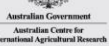




Photo: J. Uirrea (CAAFS)

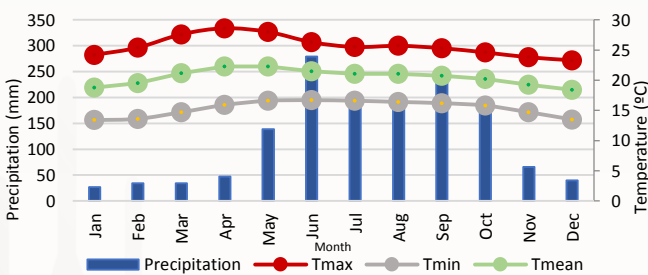
### Main crops and livestock Specific

- **Food:** Maize, Beans, small animals ♀
- **Food/Cash:** Banana, Pigs
- **Cash :** Coffee, Cocoa

### Climate-related risks

Unpredictable rainy season beginning. Drier summer season

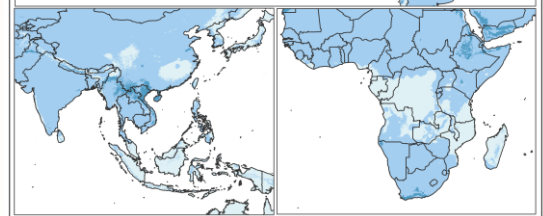
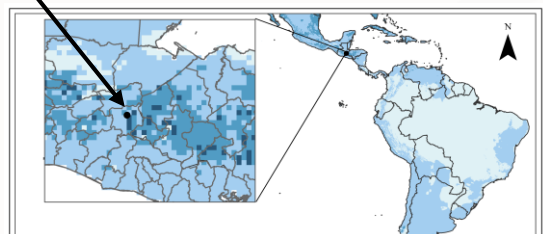
### Climatic conditions



(Source: [www.worldclim.org](http://www.worldclim.org))

### Areas of climatic similarity

**Olopa**  
14.75 N -89.4 W



**Climatic similarity**

Areas whose future projected climate (by 2030) is similar to the current climate in this CSV

(Source: [www.ccafs-analogues.org](http://www.ccafs-analogues.org))

Parameter	Amount	Narrative
Total annual P	1484 mm	In a single rainy season of 1.236 mm (May – Oct) and a dry season of 248 mm (Jan-Apr, Nov-Dic)
Max # of consecutive dry months	6 months (< 100 mm)	
Max T rainy season	28 °C	
Max T dry season	28.6 °C	
Highest min T	16.7 °C	June

# Climate-Smart Village

## Olopa (GUATEMALA)



RESEARCH PROGRAM ON  
Climate Change,  
Agriculture and  
Food Security



1585 m.a.s.l



farm size  
< 1 Ha



Maya Ch'orti'  
555 HH



13%  
headed



## CSA Portfolio

### Field testing and # of households involved (2016)

♀ Gender aspect assessed

♀ Potential gender impact



Implemented



Evaluated



Implemented & Evaluated



Mitigation potential



Available in Site  
(Not CCAFS)

### CSA Practices



- Improved Varieties (Maize, beans) 10 ♀
- Organic Fertilizer (home gardens) 32 ♀
- Increased Farm diversity (home gardens) 32 ♀

### Agro-climatic services



- Seasonal forecast

### Financial services



- Informal group loans
- Informal- individual credits/loans
- Individual Bank savings

### Market incentives



- Contract farming

## Flagship projects

- Local to National/Regional synthesis, research and engagement (incl. CSVs in LAM) - P265
- Tailored Agro-Climate Services and food security information for better decision making - P42

## Partners



- CATIE
- CIAT
- BIOVERSITY
- Mancomunidad Copan Ch'orti'

## Contacts

Regional Program Leader for LAM  
Ana Maria Loboguerrero  
([a.m.Loboguerrero@cgiar.org](mailto:a.m.Loboguerrero@cgiar.org))

Science Officer for LAM  
Deissy Martinez-Baron  
([d.m.baron@cgiar.org](mailto:d.m.baron@cgiar.org))



Soluciones para el ambiente y desarrollo



CSV profile developed by Osana Bonilla-Findji, Patricia Alvarez-Toro and Julian Ramirez-Villegas

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT). CCAFS brings to scale climate smart agricultural practices, technologies and institutions which contribute to increased food and nutritional security, low emissions development, sustainable landscapes, and increased gender equity.

This work was implemented as part of CCAFS Flagship 2, which is carried out with support from CGIAR Fund Donors and through bilateral funding agreements. For details please visit <https://ccafs.cgiar.org/donors>. CCAFS is supported by:

