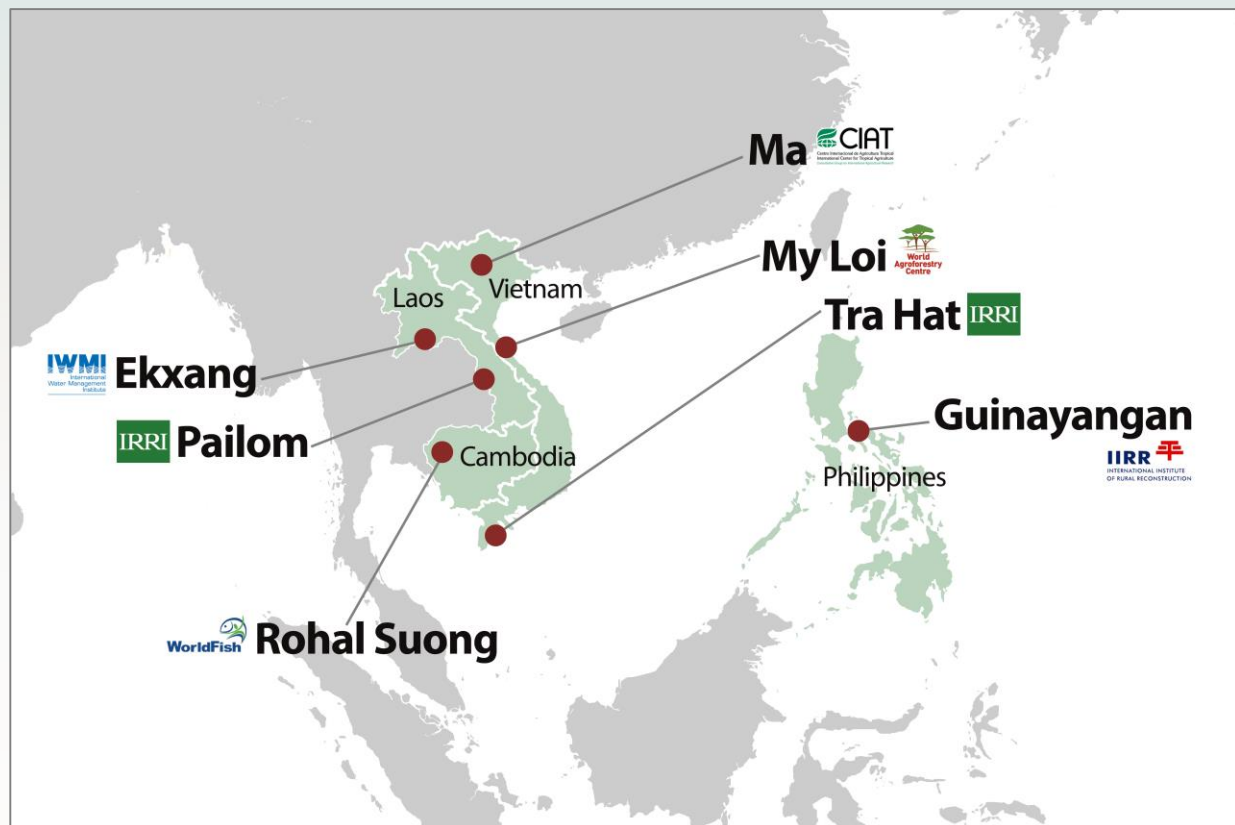


South East Asia Climate-Smart Villages AR4D sites: 2016 Inventory



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Citation

Bonilla-Findji, O. and Bui Tan, Y. 2017. South East Asia Climate-Smart Villages AR4D sites: 2016 Inventory. Wageningen, The Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CAAFS).



Inventory of CSA practices in South East Asia's Climate-Smart Villages



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Total Practices: 25 ... with mitigation potential: **11**



Gender impact assessed for **2** Potential gender impact known for **17**

CSA sub-Practice	Mitigation potential	Country	CSV AR4D sites	Crop	Implemen- ted	Evaluated	Impl. & Evaluated	# of Holds	Gender Assessed	Potential gender impacts
BioChar	x	Vietnam	Ma	maize		x	-	1	-	x
			My Loi	groundnut	-	x	-	3	-	x
			Tra Hat	Rice		x	-	3	-	x
Conservation Aquaculture	x	Cambodia	Rohal Suong	natural fish	-	x	-	100	-	x
Crop Residue retention/ incorporation	x	Cambodia	Rohal Suong	Rice residue management	x	-	-	20	-	x
			Philippines	Guinayangan	lowland Rice	-	-	x	30	-
Dynamic crop calendar (staggered sowing)	-	Lao PDR	Pailom	Rice	x	-	-	5	-	-
Farmer Managed Natural Regeneration - Fish	-	Cambodia	Rohal Suong	Natural fish	x	-	-	50	-	x
Fodder Shrubs		Philippines	Guinayangan	Intensive Feed Garden	-	-	x	96	-	-
Green Manure	x	Vietnam	Ma	grass and crop residues	x	-	-	3	-	x
			Philippines	Guinayangan	Lowland Rice	-	-	x	20	-
Improved Breeds (Pigs)	-	Philippines	Guinayangan	Native Pigs	-	-	x	53	-	-
Improved Breeds (Small Ruminants)	x	Philippines	Guinayangan	Goats	x	-	-	58	-	-
Improved Cookstoves	x	Vietnam	Ma	NA	x	-	-	16	-	x
			My Loi	NA	x	-	-	16	-	x
			Tra Hat	NA	x	-	-	16	-	x
Improved Varieties	-	Vietnam	Tra Hat	Rice	x	-	-	20	x	x
			Lao PDR	Ekxang	Rice	x	-	-	13	-
		Cambodia	Pailom	Rice	x	-	-	23	-	x
			Rohal Suong	Rice	x	-	-	30	-	x
New cropping system & additional crops (Home gardens)	-	Vietnam	Ma	vegetables	x	-	-	3	-	x
			My Loi	vegetables, orange	x	-	-	2	-	x
			Tra Hat	Vegetables	x	-	-	2	-	x
New cropping system & additional crops- Intercropping	-	Philippines	Guinayangan	Pineapple under Coconut Based Farming system	-	-	x	26	-	-
				Corn under coconut based farming system	-	-	x	27	-	-
				Peanuts under coconut based farming system	-	-	x	15	-	-
				Fruit trees under coconut based farming system	-	-	x	40	-	-
				Bananas under coconut based farming system	x	-	-	16	-	-
Integrated Water management (village scale)	-	Cambodia	Rohal Suong	Fish, cow, vegetabes	x	-	-	50	-	x



Inventory of CSA practices in South East Asia's Climate-Smart Villages



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Food Security



CSA sub-Practice	Mitigation potential	Country	CSV AR4D sites	Crop	Implemen tation	Evalua tion	Impl. & Evaluation	# of Hholds	Gender Assessed	Potential gender impacts
Irrigation	-	Lao PDR	Ekxang	Rice and vegetables	x	-	-	-	-	x
		Lao PDR	Pailom	Vegetables	x	-	-	5	-	x
		Cambodia	Rohal Suong	rice and vegetables	x	-	-	100	-	-
Mulching	x	Philippines	Guinayangan	Cassava	-	-	x	4	-	-
Organic Fertilizer	-	Vietnam	Ma	crop residues and animal ma	x	-	-	3	-	x
			My Loi	crop residues and animal manure	x	-	-	11	-	x
			Tra Hat	crop residues, and animal manure	x	-	-	2	-	x
	-	Philippines	Guinayangan	animal manure + domestic waste	x	-	-	37	x	x
				Maize Lowland Rice	-	-	x	27 10	-	-
Pruning		Vietnam	Ma	Citrus	x	-	-	3	-	x
Rice Management (Direct seeded)	x	Philippines	Guinayangan	Upland Rice	-	-	x	12	-	-
Rice Management (Low external input/ planting distance)	-	Philippines	Guinayangan	LEIRP	-	-	x	20	-	-
Rice Management (Residue mngt)	x	Cambodia	Rohal Suong	Rice	x	-	-	100	-	x
Rice Management (SRI)	x	Vietnam	Ma	Rice	-	-	x	7	-	x
Tree planting	x	Vietnam	My Loi	Acacia	x	-	-	2	-	x
		Cambodia	Rohal Suong	Trees	x	-	-	2	-	-
Water Harvesting	-	Lao PDR	Pailom	Vegetables and rice	x	-	-	-	-	x



Inventory of CSA services in South East Asia's Climate-Smart Villages



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Food Security



Agro-Met Service	Country	CSV AR4D site	Agro-Met Service Implemented	Agro-Met Service Evaluated	# of households	Potential gender impacts known
Seasonal forecast	Vietnam	Ma	-	-		-
		My Loi	-	-		-
		Tra Hat	-	-		-
	Lao PDR	Ekxang	-	-		-
		Pailom	x	-	5	x
Cambodia	Rohal Suong	-	-		-	
Agroadvisories on fertilizer and pesticide application	Lao PDR	Pailom	x	-		x
Agroadvisories on varieties applied under the forecasted information	Vietnam	Ma	-	-		-
		My Loi	-	-		-
		Tra Hat	-	-		-
	Lao PDR	Pailom	x	-		x
Weekly/10 day forecast	Lao PDR	Ekxang	-	-		-
Daily forecast	Vietnam	Ma	x	-	170	-
		My Loi	-	-		-
		Tra Hat	-	-		-
	Lao PDR	Ekxang	-	-		-
		Pailom	-	-		-
	Cambodia	Rohal Suong	-	-		-

Market Services	Country	CSV AR4D site	Available	Implemented	Evaluated	# of households	Gender Assessed	Potential gender impacts known
Contract farming	Vietnam	Ma	X	-	-	-	-	-
		My Loi	X	-	-	-	-	-
Input subsidies	Vietnam	Tra Hat	X	-	-	-	-	-
	Cambodia	Rohal Suong	X	-	-	-	-	-



Inventory of CSA services in South East Asia's Climate-Smart Villages



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Financial Services	Country	CSV AR4D site	Available	Implemented	Evaluated	# of households	Gender Assessed	Potential gender impacts known
Capacity Building/Technical Assistance (by Dev agencies/programs)	Vietnam	Ma	X	-	-		-	-
		My Loi	X	-	-		-	-
		Tra Hat	X	-	-		-	-
	Lao PDR	Ekxang	X	-	-		-	-
Government Subsidies	Cambodia	Rohal Suong	X	-	-		-	-
Individual Bank savings	Vietnam	Ma	X	-	-		-	-
		My Loi	X	-	-		-	-
		Tra Hat	X	-	-		-	-
	Lao PDR	Ekxang	X	-	-		-	-
		Pailom	X	-	-		-	-
Individual (short term) Bank loans	Vietnam	Ma	X	-	-		-	-
		My Loi	X	-	-		-	-
		Tra Hat	X	-	-		-	-
	Lao PDR	Ekxang	X	-	-		-	-
		Pailom	X	-	-		-	-
Cambodia	Rohal Suong	X	-	-		-	-	
Individual (long term) Bank loans	Vietnam	Ma	X	-	-		-	-
		My Loi	X	-	-		-	-
		Tra Hat	X	-	-		-	-
	Lao PDR	Ekxang	X	-	-		-	-
		Pailom	X	-	-		-	-
Cambodia	Rohal Suong	X	-	-		-	-	
Informal individual credits/loans	Vietnam	Ma	X	-	-		-	-
		My Loi	X	-	-		-	-
		Tra Hat	X	-	-		-	-
	Lao PDR	Ekxang	X	-	-		-	-
		Pailom	X	-	-		-	-
Cambodia	Rohal Suong	X	-	-		-	-	
Informal saving groups	Vietnam	Ma	X	-	-		-	-
		My Loi	X	-	-		-	-
		Tra Hat	X	-	-		-	-
	Lao PDR	Ekxang	X	-	-		-	-
		Pailom	X	-	-		-	-
Cambodia	Rohal Suong	X	-	-		-	-	

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Acknowledgments

This CSV inventory was implemented as part of CCAFS Flagship 2 activities under the global and regional coordination of Osana Bonilla-Findji and Yen Bui Tan, respectively. We would like to acknowledge the valuable support of our local and national governmental/non-governmental partners including private sector participants, CGIAR Centers and focal points from each site namely: Bui Le Vinh (CIAT/Ma), Duong Minh Tuan (ICRAF/My Loi), Le Minh Duong (DARD Bac Lieu/Tra Hat CSV), Sriphe Chanthala and Architesh Panda (IRRI/Pailom and Ekxang respectively), Rene Vidallo (IIRR/Guinayangan).

40 m.a.s.l



farm size
1-5 Ha



192 HH



26.5% headed



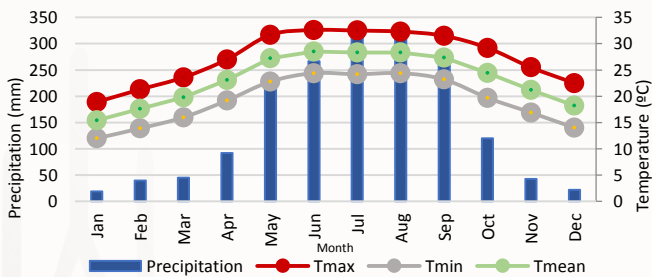
Main crops and livestock Specific

- **Food:** Rice
- **Food/Cash:** Maize, Vegetables, Pomelo, Chicken, Pig
- **Cash:** Cassava, Fruit trees, Forest trees, Goat, Cow

Climate-related risks

Prolong droughts, heavy rains, unusual floods, decline of natural flows, landslides, severe and long cold and hot spells, typhoon, soil erosion, land degradation, water pollution and GHG emission from current productions systems at high level.

Climatic conditions



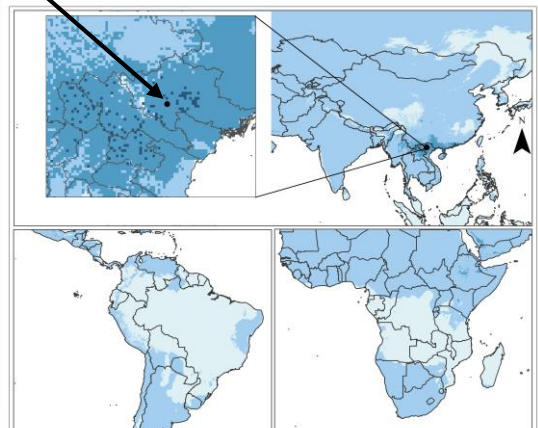
(Source: www.worldclim.org)

Areas of climatic similarity



Ma-CSV

21.77 N 105.05 W



Climatic similarity

Very low similarity Low similarity Moderate similarity High similarity

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

(Source: www.ccafs-analogues.org)

Parameter	Amount	Narrative
Total annual P	1.776 mm	In a single rainy season of 1.395 mm (May – Sep) and a dry season of 381 mm (Oct-Apr).
Max # of consecutive dry months	6 months (< 100 mm)	
Max T rainy season	32.6 °C	
Max T dry season	29.2 °C	
Highest min T	24.4 °C	June, August



farm size
1-5 Ha



192 HH



26.5%
headed



CSA Portfolio

Field testing and # of households involved (2016)

Implemented
 Evaluated
 Implemented & Evaluated
 Mitigation potential
 Available (No CCAFS related)
 Potential gender impact

CSA Practices



Agro-climatic services



Financial services



Market incentives



Biochar (Maize)	1	
Improved cook stoves	16	
Green manure	3	
Rice Management	7	
Intercropping (cassava-grass-cowpea)	6	
Organic fertilizer	3	
Increased farm diversity (Vegetables)	3	
Pruning (citrus)	3	

- Daily forecast
- Seasonal forecast
- Agro-advisories on varieties applied under the forecasted information

- Informal saving groups
- Individual Bank Savings
- Informal individual credits loans
- Individual - long term Bank loans
- Individual - short term Bank loans
- Capacity Building/ Technical Assistance

- Contract farming

Flagship projects

- Innovative approaches and Upscaling CSA in SEA- P264
- Integrated agricultural technologies for enhanced adaptive capacity and resilient livelihoods in CSVs- P28 (CIAT)

Partners



- CIAT
- NOMAFSI
- IAE
- DARD Yen Bai

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

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CCAFS is supported by:





farm size
1-2 Ha



213 HH



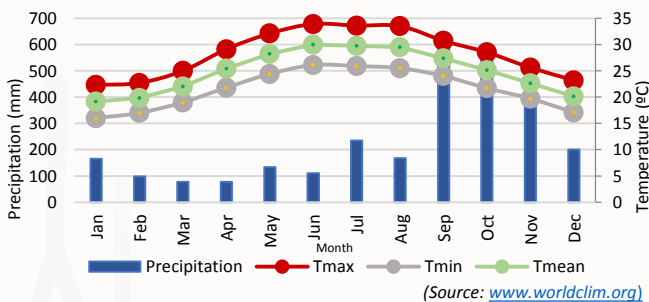
17.0%
headed



Main crops and livestock Specific

- **Food:** Rice
- **Food/Cash:** Peanut, Orange, Citrus, Sweet potato, Cassava, Green bean, Maize, Vegetables, Chicken, Pig, Cow, Goat
- **Cash:** Accasia, Eucalyptus, Tea, Pepper

Climatic conditions



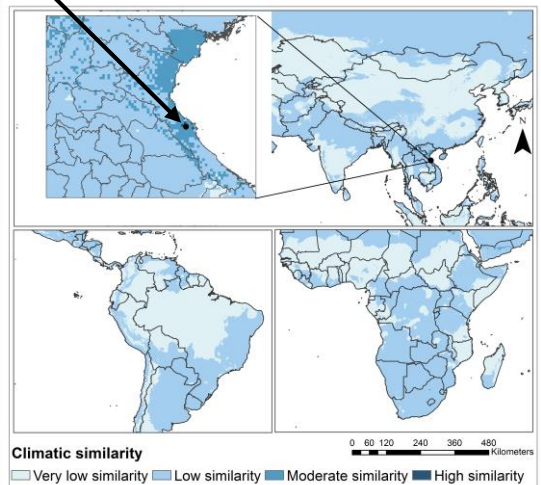
Parameter	Amount	Narrative
Total annual P	2.884 mm	In a single rainy season of 1.621 mm (Sep – Nov) and a dry season of 1263 mm (Dec-Aug).
Max # of consecutive dry months	3 months (< 100 mm)	
Max T rainy season	30.7 °C	
Max T dry season	33.9 °C	
Highest min T	26.1 °C	June

Climate-related risks

Unusual extreme weather events: droughts, flashfloods, cold spells, hot spells and storm/typhoons. Also water scarcity and poor soil quality

Areas of climatic similarity

My Loi-CSV
17.98 N 106.15 W



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

(Source: www.ccafs-analogues.org)

60 m.a.s.l



farm size
1-2 Ha



213 HH



17.0% headed



CSA Portfolio

Field testing and # of households involved (2016)

Implemented
 Evaluated
 Implemented & Evaluated
 Mitigation potential
 Available
 Potential gender impact (No CCAFS related)

CSA Practices

- Biochar** (Groundnut) 3
- Improved cook stoves** 16
- Organic fertilizer** 11
- Increased farm divers.** 2
(Vegs, oranges)
- Tree planting** 2
(Acacia)

Agro-climatic services

- Daily forecast**
- Seasonal forecast**
- Agro-advisories on varieties applied under forecasted information**

Financial services

- Informal saving groups**
- Individual Bank Savings**
- Informal individual credits loans**
- Individual - long term Bank loans**
- Individual - short term Bank loans**
- Capacity Building/ Technical Assistance**

Market incentives

- Contract farming**

Flagship projects

- Innovative approaches and Upscaling CSA in SEA- P264
- Generating evidence base for upscaling local adaptation through Climate-Smart Agriculture- P55

Partners



- ICRAF
- CARE
- IIRR
- MONRE-Ministry of Natural Resources
- Farmers' Union of Ha Tinh province
- Institute of Agricultural Environment

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Fund





farm size
1-5 Ha



264 HH



22% headed



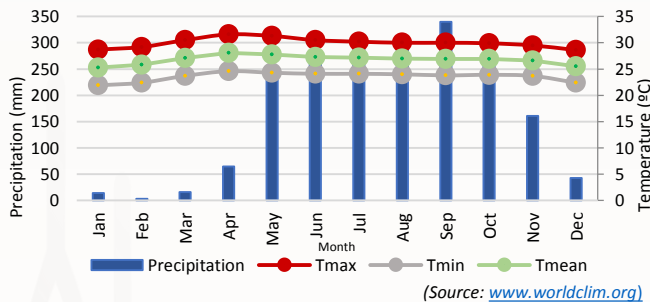
Main crops and livestock

- **Food and Cash:** Rice, Vegetables, Chicken, Duck
- **Cash:** Pig, Python, Frog

Climate-related risks

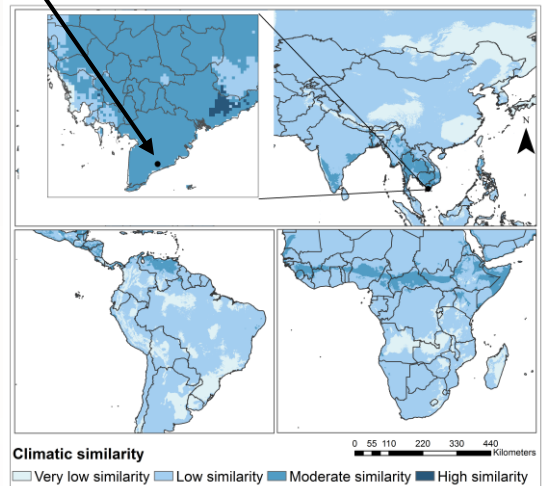
Unusual extreme weather events: floods, delays of rainy season, salinity intrusion.

Climatic conditions



Areas of climatic similarity

Tra Hat - CSV
9.37 N 105.67 W



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

(Source: www.ccafs-analogues.org)

Parameter	Amount	Narrative
Total annual P	2.023 mm	In a single rainy season of 1.208 mm (Jul – Oct) and a dry season of 815 mm (Nov-Jun).
Max # of consecutive dry months	5 months (< 100 mm)	
Max T rainy season	30.2 °C	
Max T dry season	31.6 °C	
Highest min T	24.6 °C	April



farm size
1-5 Ha



264 HH



22% headed



CSA Portfolio

Field testing and # of households involved (2016)

Implemented
 Evaluated
 Implemented & Evaluated
 Mitigation potential
 Available (No CCAFS related)
 Gender aspect assessed
 Potential gender impact

CSA Practices

Biochar (Rice)	3	
Improved cook stoves	16	
Organic fertilizer	37	
Increased farm divers. (Vegetables)	2	
Improved varieties (Rice)	20	
Use plants to protect crops from pest and disease	2	

Agro-climatic services

- Daily forecast
- Seasonal forecast
- Agro-advisories on varieties applied under forecasted information

Financial services

- Informal saving groups
- Individual Bank Savings
- Informal individual credits loans
- Individual - long term Bank loans
- Individual - short term Bank loans
- Capacity Building/ Technical Assistance

Market incentives

- Input subsidies

Flagship projects

- Innovative approaches and Upscaling CSA in SEA- P264
- CSVs in the Mekong Basin: Catalyzing Roll-out of Adoption - P54

Partners



- IRRI
- CABI
- Institute of Agricultural Environment
- Cuu Long Rice Research Institute
- Can Tho University
- Nong Lam University

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150 m.a.s.l



farm size
1-5 Ha



102 HH



8.8% headed



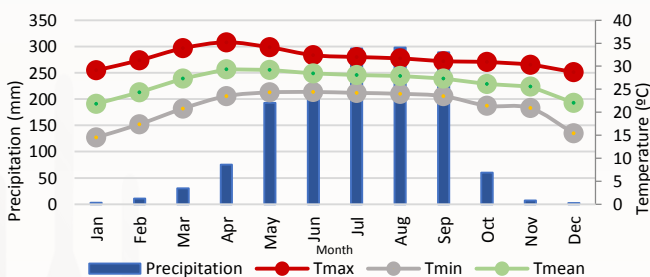
Main crops and livestock Specific

- **Food and Cash:** Rice, Maize, Vegetables, Pig, Chicken, Ducks
- **Cash:** Cow, forest trees

Climate-related risks

Droughts, long dry season and delay of rainy season, also low soil fertility

Climatic conditions



(Source: www.worldclim.org)

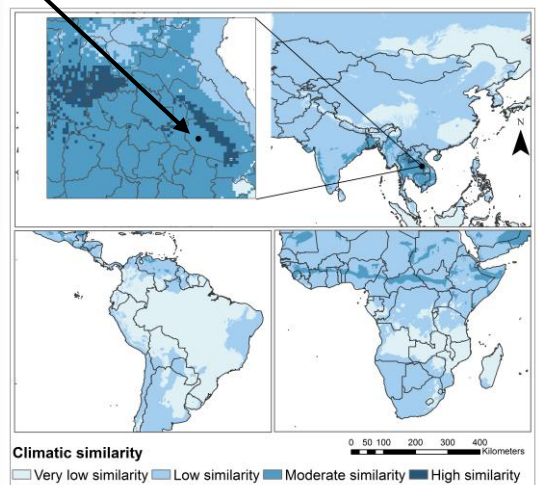
Parameter	Amount	Narrative
Total annual P	1.478 mm	In a single rainy season of 883 mm (Jul – Sep) and a dry season of 595 mm (Oct-Jun).
Max # of consecutive dry months	7 months (< 100 mm)	
Max T rainy season	32.0 °C	
Max T dry season	35.2 °C	
Highest min T	24.4 °C	June

Areas of climatic similarity



Pailom-CSV

16.53 N 105.12 W



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

(Source: www.ccafs-analogues.org)

 150 m.a.s.l

 farm size
1-5 Ha







 102 HH

 8.8%
headed













CSA Portfolio

Field testing and # of households involved (2016)

 Implemented
  Evaluated
  Implemented & Evaluated
  Mitigation potential
  Available
  Potential gender impact
 (No CCAFS related)

CSA Practices

-   Improved varieties (Rice) 23 
-   Water harvesting (Vegetables and Rice)
-   Irrigation (Vegetables) 5 
-  Dynamic crop calendar (Rice) 5 

Agro-climatic services

-  Seasonal forecast 5 
-  Agro-advisories on fertilizer and pesticide application
-  Agro-advisories on varieties applied under the forecasted information
-  Daily forecast

Financial services

-  Informal saving groups
-  Individual Bank Savings
-  Informal individual credits /loans
-  Individual –long term Bank loans
-  Individual - short term Bank loans

Market incentives



Flagship projects

- Innovative approaches and Upscaling CSA in SEA- P264
- CSVs in the Mekong Basin: Catalyzing Roll-out of Adoption - P54

Partners



- IRRI
- IWMI
- PAFO-Provincial and District Agriculture and Forestry Office
- Savannakhet University;
- NAFRI

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175 m.a.s.l



farm size
1-5 Ha



216 HH



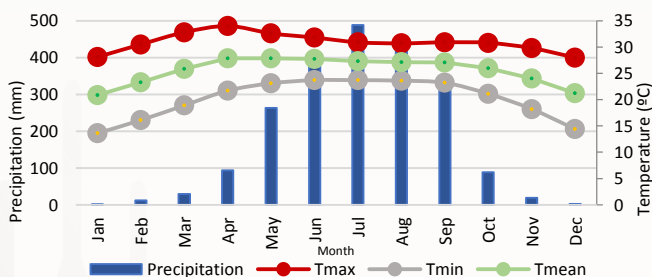
9%
headed



Main crops and livestock + Specific

- **Food:** Rice
- **Food/Cash:** Maize, Vegetables, Beans, Fruits, Pig, Chicken, Ducks, Fish
- **Cash :** Cassava, Cow, Forest trees

Climatic conditions



(Source: www.worldclim.org)

Parameter	Amount	Narrative
Total annual P	2.136 mm	In a single rainy season of 1.294 mm (Jun – Aug) and a dry season of 842 mm (Sep-May).
Max # of consecutive dry months	7 months (< 100 mm)	
Max T rainy season	31.8 °C	
Max T dry season	34.0 °C	
Highest min T	23.7 °C	June, July

Climate-related risks

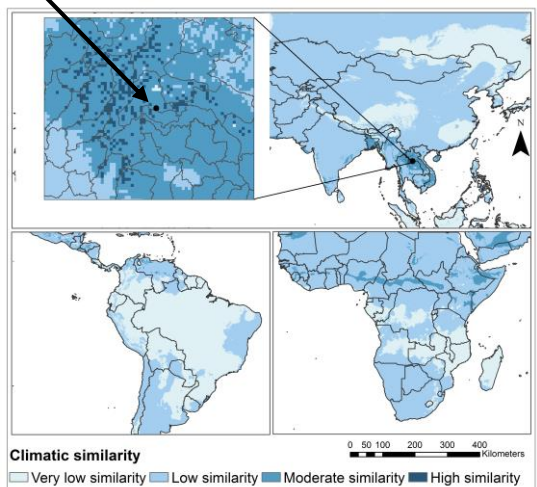
Unusual extreme weather events: floods, delay of rainy season.

Areas of climatic similarity



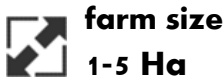
Ekxang-CSV

18.35 N 102.46 W









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

(Source: www.ccafs-analogues.org)






CSA Portfolio

Field testing and # of households involved (2016)

 Implemented
  Evaluated
  Implemented & Evaluated
  Mitigation potential
  Available
  Potential gender impact

CSA Practices



  Improved varieties (Rice) 13 

  Irrigation/Groundwater Community level (Rice and Veggies)

Agro-climatic services



-  Daily forecast
-  Weekly/10 day forecast
-  Seasonal forecast

Financial services



-  Informal saving groups
-  Individual Bank Savings
-  Informal individual credits /loans
-  Individual –long term Bank loans
-  Individual - short term Bank loans

Market incentives



Flagship projects

- Innovative approaches and Upscaling CSA in SEA- P264
- CSVs in the Mekong Basin: Catalyzing Roll-out of Adoption - P54

Contacts

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Partners



- IRRI
- IWMI
- CABI
- National University of Laos
- DAFO- Phonhong District
- PAFO- Vientiane Province
- CUSO International
- NAFRI



CSV profile developed by Osana Bonilla-Findji, Patricia Alvarez 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:





farm size
1 < Ha



300 HH



20%
headed



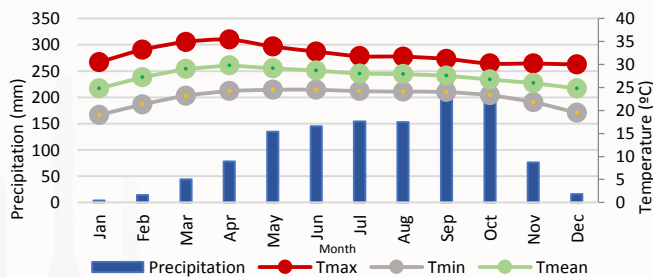
Main crops and livestock Specific

- **Food:** Rice, Maize, Soybean, Sweet potato, vegetables
- **Food/Cash:** Rice, Fruit trees, Natural fish, Pig, Chicken
- **Cash:** Corchorus

Climate-related risks

Unusual extreme weather events: floods, delays of rainy season.

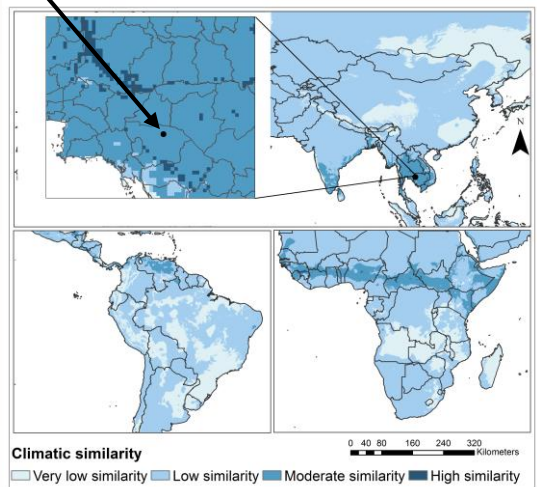
Climatic conditions



(Source: www.worldclim.org)



Areas of climatic similarity

 Rohal Suong-CSV
13.18 N 103.24 W



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

(Source: www.ccafs-analogues.org)

Parameter	Amount	Narrative
 Total annual P	1.252 mm	In a single rainy season of 433 mm (Sep – Oct) and a dry season of 819 mm (Nov-Aug).
Max # of consecutive dry months	6 months (< 100 mm)	
 Max T rainy season	31.2 °C	
Max T dry season	35.4 °C	
Highest min T	24.5 °C	May, June



farm size
1 < Ha



300 HH



20%
headed



CSA Portfolio

Field testing and # of households involved (2016)

Implemented
 Evaluated
 Implemented & Evaluated
 Mitigation potential
 Available

Gender aspect assessed
 Potential gender impact

CSA Practices



Agro-climatic services



Financial services



Market incentives



		<u>Conservation Aquac.</u> (Fish)	100	
		<u>Crop Residue retention incorporation</u> (Rice)	20	
		<u>Rice Mngt</u>	100	
		<u>Integrated water mngt</u> (Village scale)	50	
		<u>Improved varieties</u> (Rice)	30	
		<u>Farmer Managed Natural Regeneration</u> (Fish)	50	
		<u>Irrigation</u>	100	
		<u>Tree planting</u>	2	

- Daily forecast
- Seasonal forecast

- Informal saving groups
- Informal individual credits loans
- Individual - long term Bank loans
- Individual - short term Bank loans
- Government subsidies

- Input subsidies

Flagship projects

- Innovative approaches and Upscaling CSA in SEA- P264
- CSVs in the Mekong Basin: Catalyzing Roll-out of Adoption- P54

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- IRRI
- Aphivat Strey
- Dept. of Agricultural Extension
- CABI



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