coffee & climate
enabling effective response

The initiative for coffee & climate

September 26th 2014

Initiative for coffee & climate

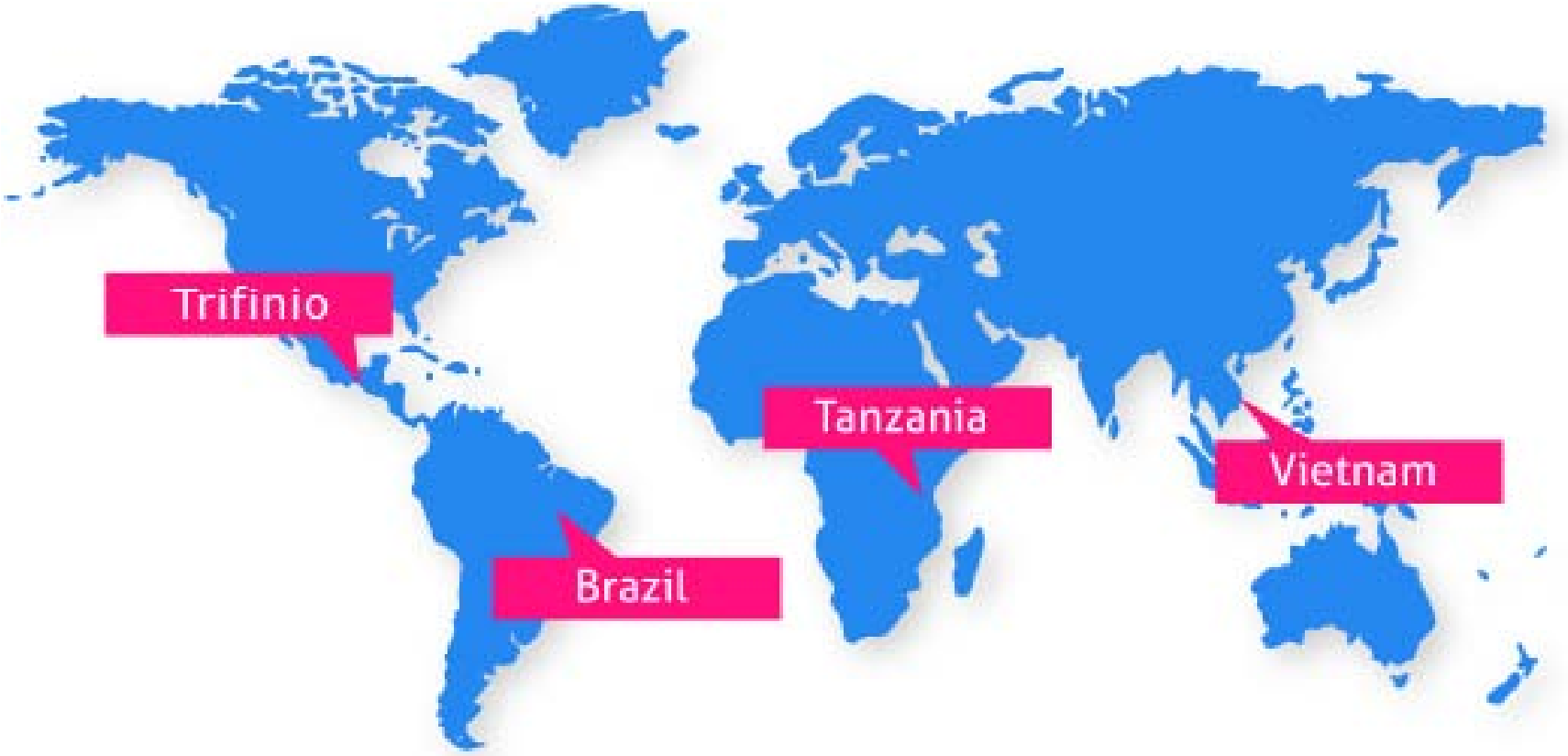
founding members

new partners

implementing agents

strategic partners

Four pilot regions – 3.000 farmers



project phase I: Sept 2010 – Aug 2013
extension: Sept 2013 – Dec 2014
suggestion of new project phase: 2015 – 2017

Four pilot regions – 3.000 farmers

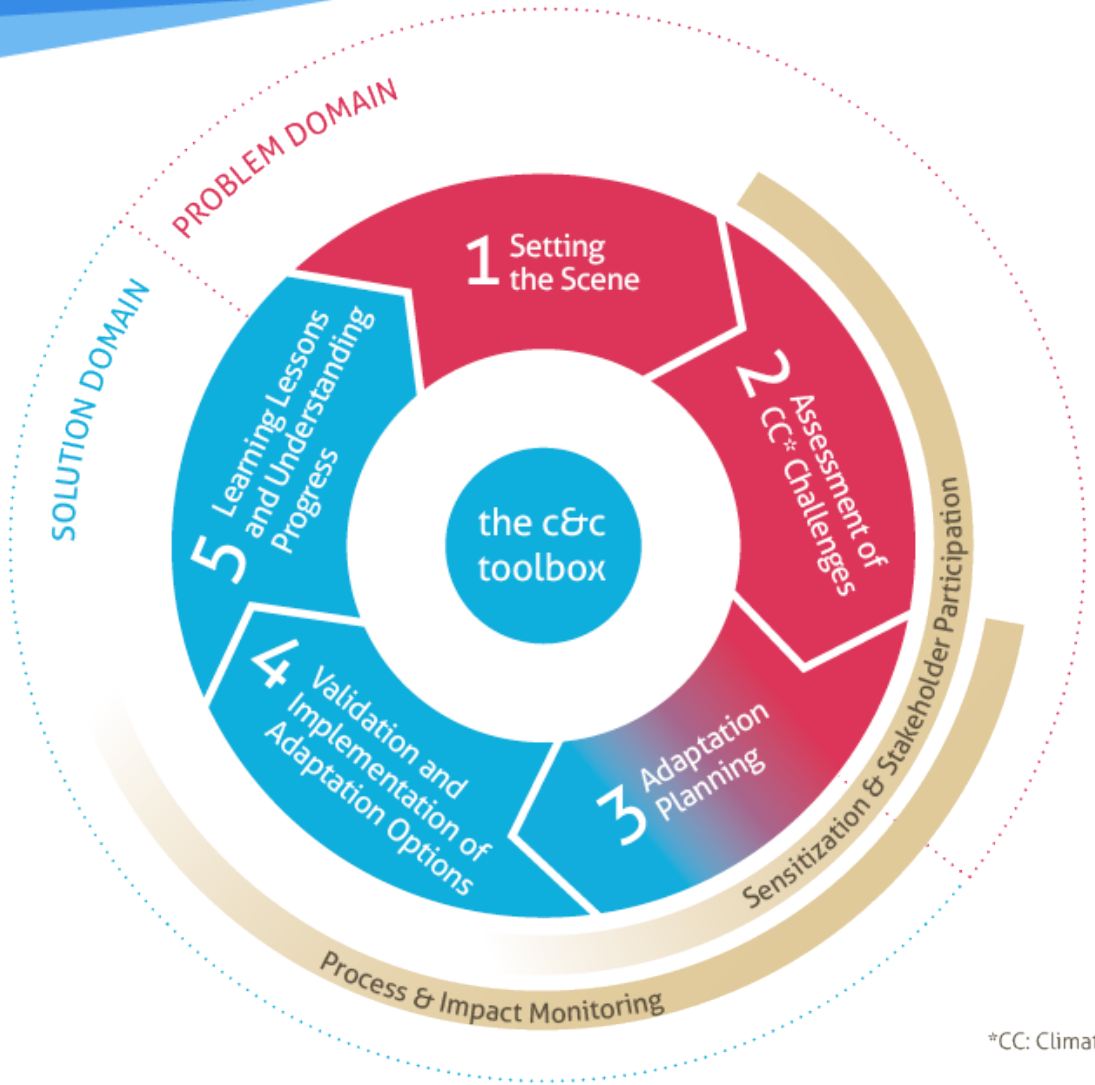
vision:

- enable coffee farmers to effectively **respond to climate change**

mission:

- combine **state of the art climate change science** and proven **farming methods**
- offer **practical, hands-on and applicable tools**
- form a **network** of all relevant stakeholders in the field
- apply a **360° precompetitive** approach including the entire value chain

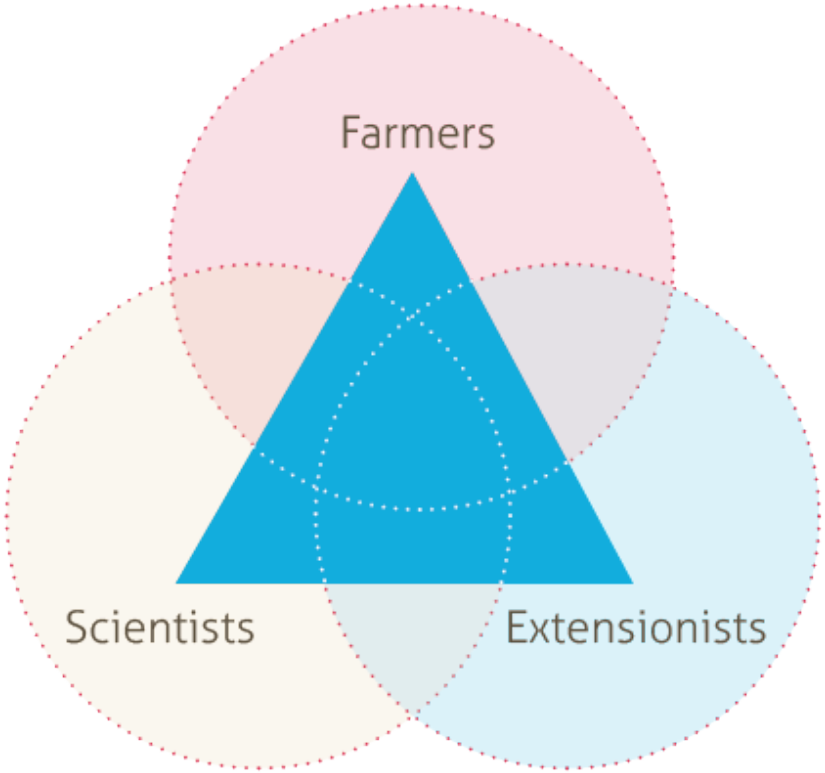
The c&c approach



*CC: Climate Change

2.Risk assessment e.g. triangulation of sources

Determine the local climatic risks to coffee production to define a locally appropriate solution



2.Risk assessment
- triangulation results -

Sul de Minas, Brazil	rising temperature; prolonged dry period; strong rains; poor soil cover	→	coffee wilt, phoma fungal disease, empty beans
Trifinio, Central America	rising temperature, severe storms, longer rain periods	→	landslides, infrastructure damage, leaf rust
Dak Lak, Vietnam	rising temperatures, irregular rain and dry periods, falling ground water	→	lower pollination rate, higher evapotranspiration, difficult coffee drying
Mbeya, Tanzania	Lack of water, decreasing rainfall, rising temperatures, long intense dry seasons	→	Flower abortion, leaf wilt, leaf drop, soil loss, unproductive trees

3. Adaptation planning

Sul de Minas

(no regret) measures:

- ground cover (brachiaria, crotalaria); water harvesting; deeper polybags; windbreaks

innovations:

- gypsum

experiments with:

- shade

Trifinio

(no regret) measures:

- rust management, rust resistent varieties, cover crops (brachiaria, arachis, commelina)

emergency response:

- risk analysis, community adaptation plans

experiments with:

- Gypsum (for drier regions)
- Trichoderma
- Sulfocalcio
- Mycorrhizae

Mbeya

(no regret) measures:

- cover crops (kikuyu and napier grass), mulching, soil management (conservation farming), rainwater harvesting; deeper polybags

experiment with:

- different levels of mulch
- shade management

Dak Lak

(no regret) measures:

- water saving irrigation techniques; composting; diversification/ intercropping; balanced fertilization

experiment with:

- centralized drying
- drip irrigation

collect data:

- metereological, groundwater, pests (cicadas)

4. Implementation

Sul de Minas

1400 farmers:

- over 90% of farmers using cover crops (maintain soil moisture, increase organic matter, reduce impacts of strong rains)
- interested in windbreaks, gypsum

signs of natural diffusion:

- spontaneous adoption of non-project farmers

training of trainers:

- 26 promoters

Trifinio

1000 farmers:

- good response on rust management, use of rust resistent varieties

training of trainers:

- 15 (9) promoters

Mbeya

1260 farmers:

- farmers intersted in cover crops (kikuyu grass), mulching, conservation farming, rainwater harvesting

training of trainers:

- 7 promoters

Dak Lak

910 farmers:

- reduction in watering by 30% universally adopted by project farmers
- 30% applied composting techniques
- further interest in balanced fertilization

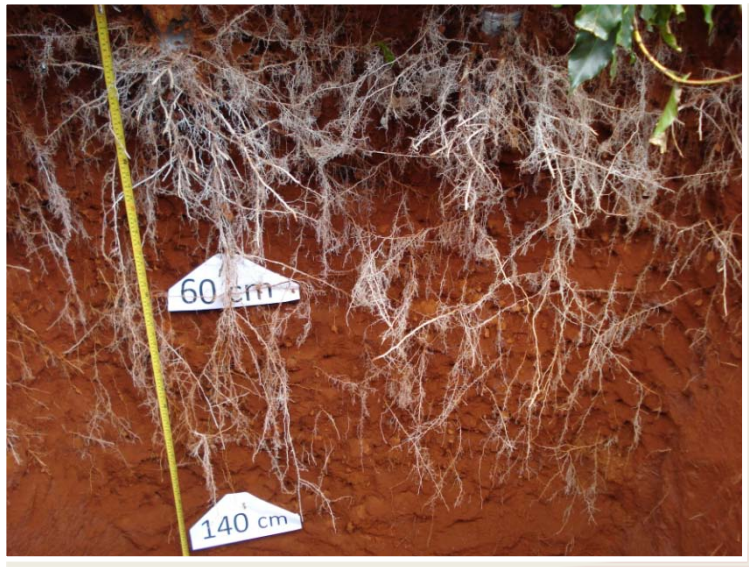
training of trainers:

- 7 (32) promoters

4. Tool validation & implementation:

-e.g. gypsum-

- Demo plots
- Farmer Field Schools
- Exchange visits
- Monitoring and evaluation



5. Joint learning

Sul de Minas

expert committee:

- Epamig
- Emater
- UFMG
- UFV
- UNICAMP
- COOXUPE
- P&A
- Conservation International
- Farmer reps
- HRNS
- ….

Trifinio

expert committee:

- part of the 'Mesa Nacional' for climate change; together with them in process of establishing the LEC in Guatemala
- cooperation with IHCAFE in Honduras
- …..

Mbeya

expert committee:

- TCB
- TaCRI
- Ecom / Tutunzue Kahawa Ltd.
- Café Africa Mbeya
- District Coffee Specialist
- Taylor Winch/ Volcafe
- Shiviwaka / TCFA
- Starbucks Mbeya
- Agricultural Research Institute Uyole
- Regional Agricultural Office
- HRNS

Dak Lak

expert committee:

- Vice-chairman of project district
- Head of the district Agriculture& Rural Development Division
- Chairpersons or deputy chairpersons in charge of agriculture & rural development of 5 project communes
- Farmer reps
- HRNS
- ….

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News

Check out the new case study map feature. Soon enough we will have lots of case studies for your convenience!

Case Studies

Collection has begun and our first case study sample is up – have a look under case studies for this tool!

Welcome to the coffee & climate toolbox

The c&c toolbox is a compilation of methodologies, guidelines and training materials which enable farmers to cope with climate change. It provides a platform to exchange knowledge on known and innovative adaptation practices and bridges the gap between science and farmer know-how.

© ICP

toolbox wizard

Use the c&c wizard to find tools appropriate to your particular context

© CIAT

Introduction to the toolbox

Dr. Peter Baker, Senior Scientist at CABI, outlines the toolbox concept in this brief video

© CIAT

toolbox framework

The c&c program is driven forward in a cyclical manner by constant monitoring and evaluation of ad

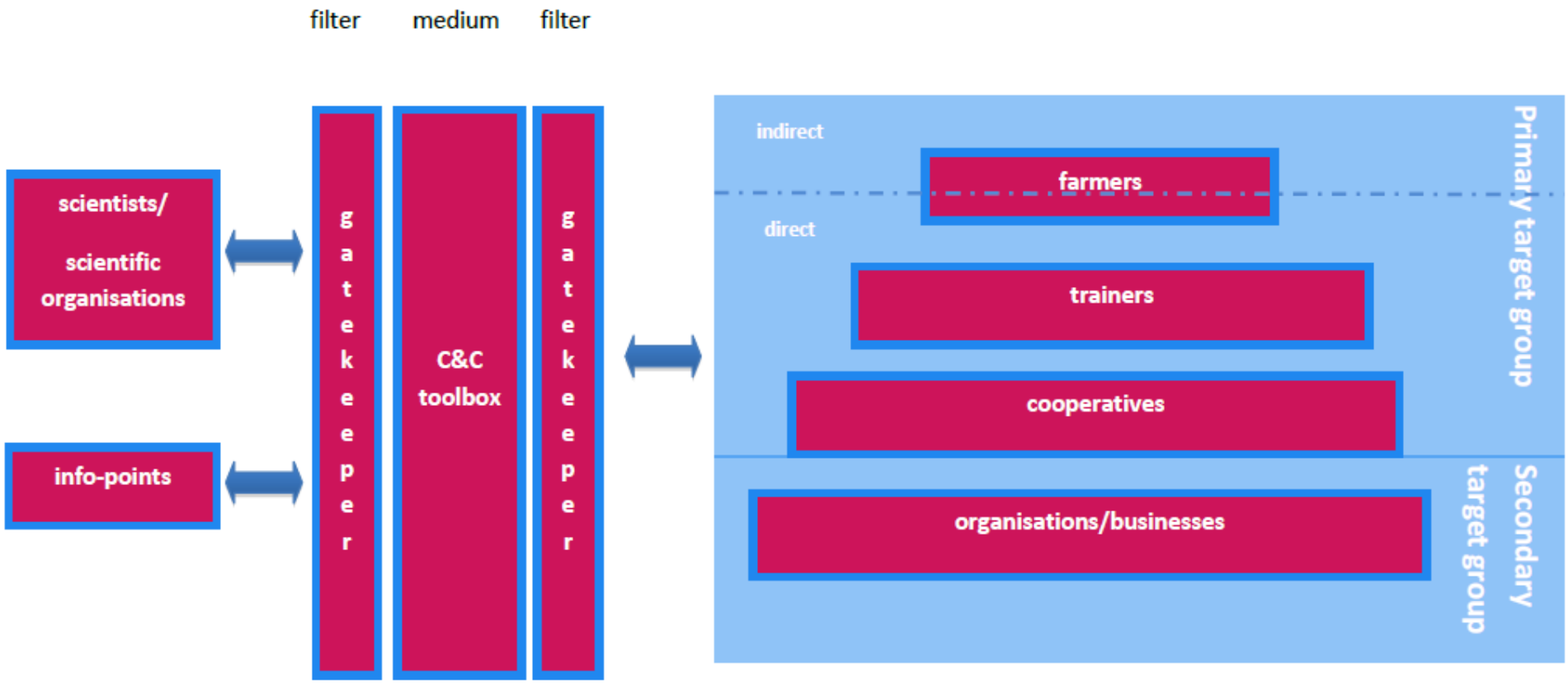
the toolbox framework

http://toolbox.coffeeandclimate.org

News!!!

To provide the most up to date information in an "easy to use" manner we are developing several features for the toolbox...

Target Group for the Toolbox



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c&c tools

Our wizard generates the information that is most relevant to you by choosing criteria f
selection of drop-down filters (eg. country, climatic hazards etc.) Simply select the crite
are most relevant to your needs and the tools will be filtered accordingly.

Please choose:

- climatic hazard
- purpose
- tool type
- crop variety

The wizard has found **43** results for the criteria selected.

Results

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c&c tools

Our wizard generates the information that is most relevant to you by choosing criteria fro
selection of drop-down filters (eg. country, climatic hazards etc.) Simply select the criteria
are most relevant to your needs and the tools will be filtered accordingly.

Please choose:

- drought
- temperature
- rain
- frost
- prolonged rain (ENSO)
- intermittent rain
- wind
- short term rain events (hurricanes, typhoons, heavy thunderstorms, hail)

The wizard has

Results

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c&c tools

Our wizard generates the information that is most relevant to you by choosing criteria from o
selection of drop-down filters (eg. country, climatic hazards etc.) Simply select the criteria tha
are most relevant to your needs and the tools will be filtered accordingly.

Please choose: drought ×

- drought resistance
- heat stress
- plant resilience
- water holding
- disease
- grafting
- shade
- nursery
- water management

The wizard has

Results

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c&c tools | how to use | info points | search

Toolbox Wizard

Our wizard generates the information that is most relevant to you by choosing criteria from our selection of drop-down filters (eg. country, climatic hazards etc.) Simply select the criteria that are most relevant to your needs and the tools will be filtered accordingly.

Please choose:

drought ×

Brazil ×

support
adaptation on the farm
adaptation beyond the farm
mitigation
assessment

The wizard has found **22** results for the criteria selected.

Results

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c&c tools

Our wizard generates the information that is most relevant to you by choosing criter
selection of drop-down filters (eg. country, climatic hazards etc.) Simply select the c
are most relevant to your needs and the tools will be filtered accordingly.

Please choose:

- drought ×
- drought resistance ×
- adaptation on the farm ×
- crop variety

The wizard has found **7** results for the criteria selected.

Results

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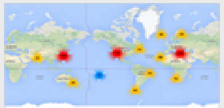
results for c&c Toolbox Wizard

- Gypsum Application to Soil
- Weed Selector (Soil Moisture Retaining - Live Cover)
- Deeper Polybags
- Use of Mycorrhizae in Seedlings and Nursery
- Drip Irrigation
- Rainwater Harvesting
- Use of Trichoderma in Seedlings and Nursery

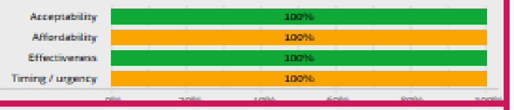
Page: 1 Tools per page: 20 Displaying 1 to 7 of 7 applicat

Deeper Polybags

Status:	has case studies
Total nr of case studies:	1
Total nr of farmers:	1
Last updated:	September 12th, 2014
Filter by region:	All



Click here for case study map



Coffee Variety: Arabica

Tool Type: Adaptation on the farm

Purpose: Drought Resistance

Concept: To give coffee saplings a better start on transplanting to the field since coffee saplings will have a deeper root system, especially, if this coincides with a drought period. This would also give farmers more latitude in when to plant out, since they could stay longer in the nursery without root damage.

Extended droughts will cause loss of coffee yields due to reduced sap flow. Reports of tree death caused by drought are not common in coffee, though it is known to occur, especially at the planting out stage when the tree´s roots system is weak and superficial.

The size of polybags for nursery seedlings varies from country to country; in some countries (e.g. Uganda, Kenya) the size of bags is very small, perhaps a legacy of times when conditions were wetter. Cenicafé (Colombia) has carried out trials with deeper polybags than normally used. Deeper bags will encourage deeper roots, especially if watered from below during the nursery stage. Although this requires extra materials and work, it seems that the extra effort may well be worth it to give the coffee tree a better chance of good establishment.

Drawbacks: N/A

Costs: N/A

Recommended Activities: Field station trials and on-farm participatory trials with deeper polybags to evaluate effects on subsequent growth characteristics of plant including root development before and after transference to the field. This would include ways to encourage axial root growth by bottom watering.

If funds are available, this could include a factorial design to simultaneously study a range of temporary shading, either of living or dead plant material.

Comments:

- Already tried and recommended in Colombia
- Widely applicable, only drawback are extra costs of preparation and transport of extra soil
- No data available on farmer adoption

cases | *application* | *pictures*

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Legend

Adoption
Info Point
Trial

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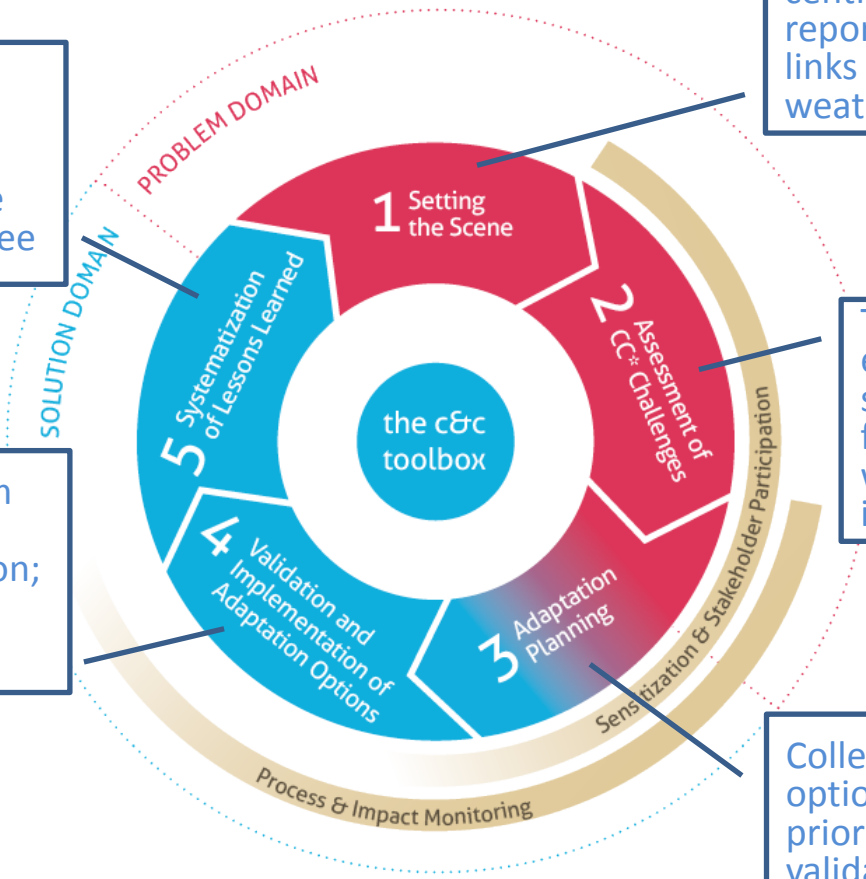
Consolidation and up-scaling in pilot countries

Achievements

Intro to CC; climate maps CIAT, Embrapa; meteo maps MG/ central highlands VN; country reports; c&c website; cc movie; links (IPCC, UNDP, UKCIP, weather tool etc.)

M&E plan; assessment of costs/benefits, adaptive capacity, resilience; participatory evaluation; case studies; local expert committee

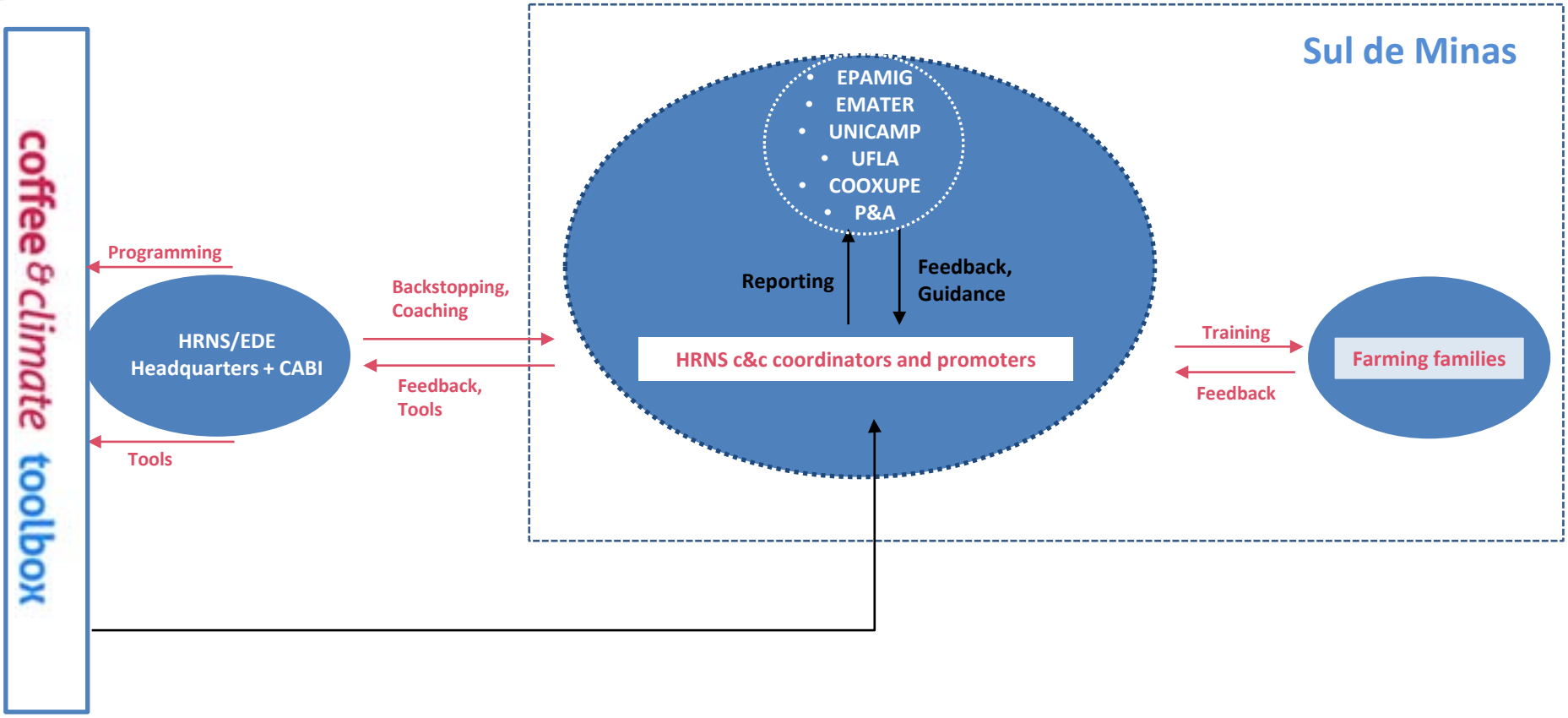


Triangulation (farmers, extensionists, researchers/ stakeholders): farmer diagnostic; focus group discussions; climate witness workshops; scientific information

Farmer Field Schools; on farm trials; demonstration plots; exchange visits; data collection; studies on financing instruments; PES study Brazil

Collection of adaptation options; framework for prioritization; implementation/ validation plan; development of ToC; Indicators

Project structure – e.g. Brazil



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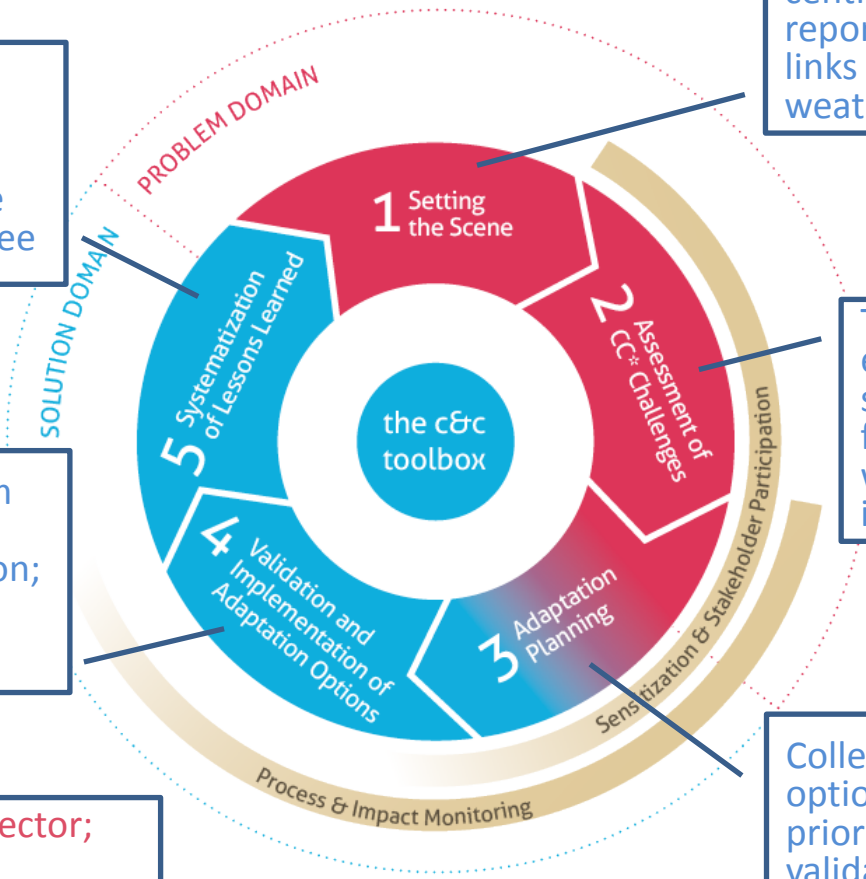

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Visibility of c&c in the sector;
Preparation for scaling:
ToT workshops; source book; local ownership workshops; working group with standards

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ToT Workshop

Participants Tanzania:

- Tanzania Coffee Board – Mbeya
- Tanzanian Coffee Research Institute (TaCRI, nat. research institute)
- Agricultural Research Institute Uyole
- District Coffee Specialist- Mbeya rural
- (District Mbeya rural)
- Shiviwaka
- CMS Mbozi (Coffee Management Services;)
- Ecom/Tutunze Kahawa Ltd.
- Starbucks FSC
- Volcafe/Taylor Winch
- Tembo Coffee Co LTD
- Rainforest Alliance
- Café Africa
- (HIVOS)
- (Solidaridad)

Participants Vietnam:

- Tay Nguyen University
- Dak Lak Rural Development Division
- Provincial Agricultural Extension Center Dak Lak
- DONRE Dak Lak
- DoST Dak Lak
- Néstle Vietnam
- Mondelez
- Nedcoffee
- Amajaro Dak Lak
- Olam Dak Lak
- (Ecom)
- Intimex Dak Lak
- SIMEXCO
- VCCC
- Nam Nguyet Company
- Trunk Nguyen Coffee Company
- 4C Association
- (Utz)
- (SNV)

Participants Trifinio:

- ANACAFE
- IHCAFE
- Consejo Salvadoreño de café
- CATIE
- Volcafe
- Ecom
- Forca Café (Brazil)
- TH Valle Colombia (Project Tim Hortons)
- PPRONDECAFE (Project Tim Hortons)
- PROTCAFES (Project Tim Hortons and ICP)
- Rainforest Alliance
- KfW
- GIZ

Invitation list Brazil:

- EPAMIG
- EMATER
- INCAPER
- MDA
- SECAFE
- IAC
- Coopervass
- Cocarive
- Néstle
- Ecom-EISA
- Stockler
- P&A Marketing
- Conservation International

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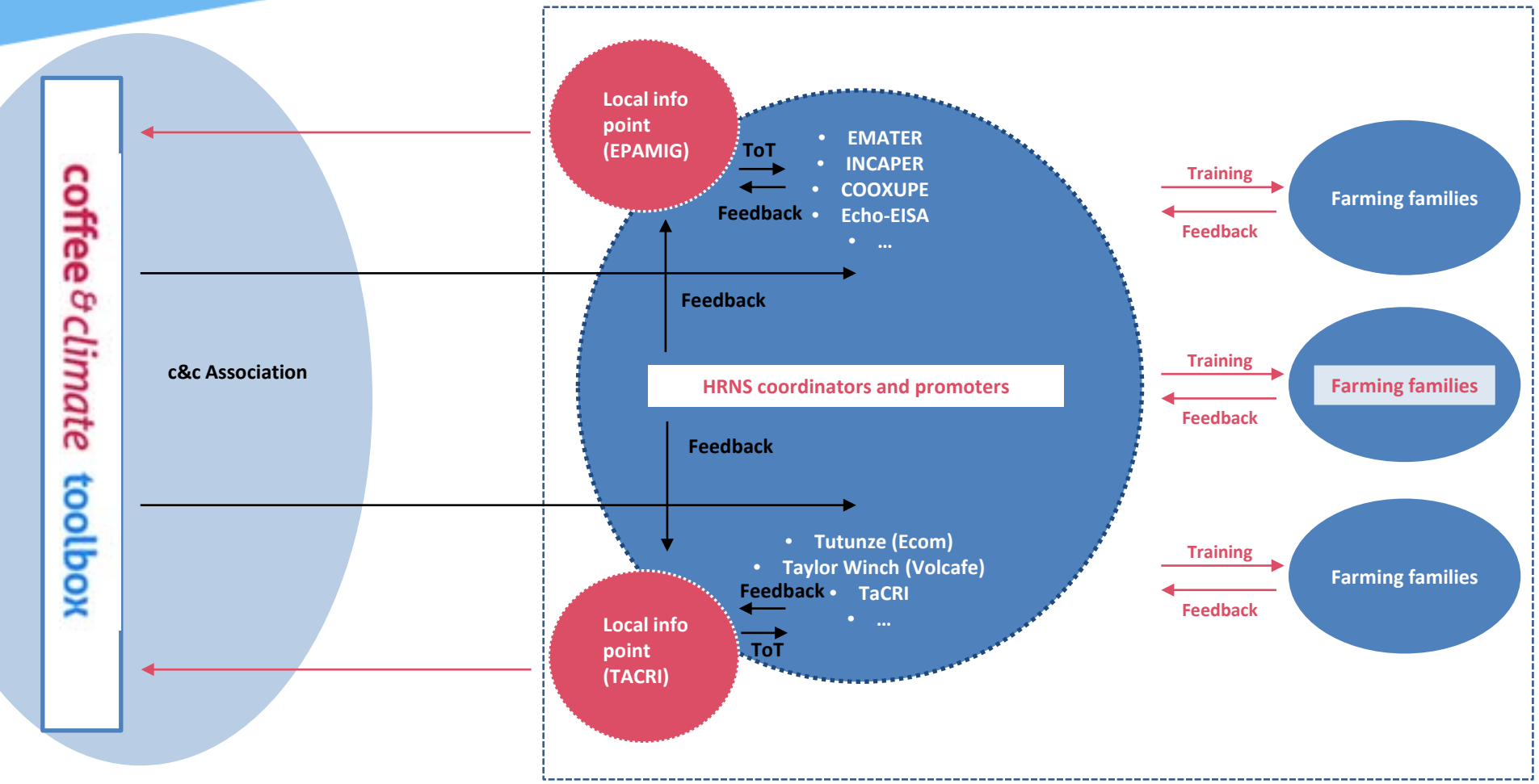
Sourcebook

Table 10: Ranking exercise for selection of su

Impacts/ Problem	Suggested Adaptation Option	Feasibility (from technical side and c&c toolbox) Low _=1 Medium = 3 High = 5	Ef (f te ar to Lo M Hi			
Soil erosion because of heavy rain Vulnerability: Soil on hillsides unprotected because of high application of herbicides	Mulch	High (5)	M M sc bu re pe			
	Promote cover crops by weed wiper	Medium (3) Requires prior training and skill in handling; difficult handling on sloping land	M	Will show results in relative short time, but high risk to unappropriated use (can kill all weeds at once)	Unknown technique; but equipment available by reasonable cost	Will show results in relative short time	3 Test plots with weed wiper
	Promote Cover crops by manual weeding	Medium (3) Dependent on availability of suitable local material	High (5); Will show results once cover crop is full established	Medium (3) Suitable cover crop plant (weeds) found on farms, but producer should desist from using herbicide	Medium (3) Demands time to establish cover crop	Score: 14 Establish 3 Demoploats of selected cover crops

Mid to long term vision – e.g. Brazil, Tanzania



Working group with standard systems

- Develop synergy between c&c and standard initiatives
- Cooperate to bring climate change adaptation to scale (joint forces)
- Define a clear concept of *resilience* in the coffee sector; this includes business cases fo climate change adaptation for the different actors (farmers, funders…)
- Develop and disseminate tools; scaling / enabling *resilience* in the coffee sector based on implementation experience
- Focus on adaptation and consider mitigation aspects where feasible
- External communication to stakeholders (joint events, publications)

Mainstreaming c&c

- Scaling up: continuation and expansion in pilot countries
- Replication: satellite projects in new countries, regions (e.g. Honduras, Peru, Uganda, Ethiopia, Indonesia, etc.)
- Local info points; licensed regional ToT trainers
- Using c&c approach in all farmer trainings
- Joint learning with partners
- Institutionalizing the toolbox (self-financing); continuous further development
- Mobilizing sector players at large

Building a **Sector Alliance**

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