

Climate-smart agriculture measurement, reporting and verification in Zimbabwe

Annexes

Annex 1: Annotated table of CSA-relevant Policies

Policy	Year of issue	Policy domain	Are activities promoted in the plan / relevant to CSA pillars?			Does the policy promote CSA measures?	Is CSA mentioned?	Does the policy have an M&E system?	Policy relevant to M&E of CSA, as per stakeholders?
			Productivity	Resilience	Mitigation				
CSA Manual for Agriculture Education in Zimbabwe	2017	CSA	Yes	Yes	Yes	Yes, describes CSA measures to raise awareness and scale CSA	Yes	Not a system, but suggests CSA indicators from other sources (p.74)	No
National Climate Policy of Zimbabwe (NCPZ)	2016	Climate change; Resilience; Mitigation	Yes. Actions promoted are relevant to the pillar	Yes. Actions promoted are relevant to the pillar	Yes. Actions promoted are relevant to the pillar	Yes	Yes, but swiftly	No. It only states the need of an M&E system	No
Intended Nationally Determined Contribution (INDC)	2015			Yes	Yes. As co-benefits	Yes	Yes. No explicit definition for CSA, but uses the term a couple of times	No, but names a range of M&E tools available	No
Zimbabwe's National Climate Change Response Strategy (NCCRS)	2014	Climate change; Resilience; Mitigation; Gender	Yes	Yes	Yes	Yes	Yes. No explicit definition for CSA, but uses the term a couple of times	No. Indicative time frame, no lead and co-operating agencies, potential sources for resource mobilization and estimated costs given	No
Zimbabwe Agriculture Investment Plan (ZAIP)	2013	Productivity; Competitiveness; Food and nutrition security	Yes, through specific targets set until 2018, directly linked to productivity	Yes, through specific targets set until 2018, relevant for resilience		No measures per se, but targets related to adoption of CSA-related practices (sustainable ag practices)	Yes. No explicit definition for CSA, but uses the term a couple of times	Yes. ZAIP Participatory M&E framework. But indicators are unknown. Agricultural Sector Steering Committee (ASSC) to coordinate M&E of ZAIP	No
Comprehensive Agricultural Policy Framework (ZCAPF 2012-2032)	2012	Economic growth; food and nutrition security	Yes. Some specific policy targets related to pillars	Yes. Some specific policy targets relevant for resilience	No	No. just mentions in passing CA, high-value crops, etc.	No	No. Unclear how targets are being tracked.	No

Annex 3. Stakeholders' roles in CSA MRV

Name of stakeholder	What roles do they have in design of CSA M&E systems?	Why is it important to consider them in the assessment or design of CSA M&E systems?
MEWC (Climate Change Management Department)	<ul style="list-style-type: none"> • Coordination • Capacity building • MRV • Technology transfer 	<ul style="list-style-type: none"> • Promotion of upscaling of clean technologies • Climate change education and awareness • Coordination among stakeholders
MEWC, Forestry Commission	<ul style="list-style-type: none"> • Experiences with Vegetation Resources Monitoring System (VegRIS) 	<ul style="list-style-type: none"> • Coordination
MEWC, Water Resources; MLARR, Department of Irrigation	<ul style="list-style-type: none"> • Integrated water resources management and development of related indicators • Data collection and monitoring of surface and groundwater resources • Irrigation planning and development 	<ul style="list-style-type: none"> • Coordination • To strengthen and monitor interpretation system for reliable information on water resources
Ministry of Lands, Agriculture and Rural Resettlement (MLARR) - all Departments Department of Agritex	<ul style="list-style-type: none"> • Policy formulation and implementation • Agrometeorological monitoring • Capacity building • Dissemination of information • Coordination • Implementation of government policies • Agrometeorological monitoring • Early-warning systems 	<ul style="list-style-type: none"> • Coordination • Coordination of extension activities • Implementation of government policies • Experience with Crop and Livestock Assessment Reports
MLARR, Department of Agricultural Mechanisation	<ul style="list-style-type: none"> • Research on CSA technologies • Technology verification 	<ul style="list-style-type: none"> • Tillage systems • Measurement of GHGs • Monitoring emissions
Meteorological Services Department	<ul style="list-style-type: none"> • Generation of climate information • Agrometeorological monitoring • Experiences with Local Area Prediction System (LAPS) • Handles the database management system (CLIMSOFT v.3), has agrometeorological data, including atmospheric observations 	<ul style="list-style-type: none"> • Information dissemination (e.g., bulletins and seasonal forecasts)
Farmers Union	<ul style="list-style-type: none"> • Representing and interpreting farmer needs • Networking and information dissemination to farmers • Capacity building of farmers 	<ul style="list-style-type: none"> • The group represents and interprets farmer needs • The group advances farmer interests

National and international research and academia	<ul style="list-style-type: none"> • Research in livestock and crops related to adaptation and mitigation • Agro-biodiversity conservation. • Capacity building • Training of students • Academic research on CSA 	<ul style="list-style-type: none"> • Repackaging of information such that it can be easily understood • Use of climate information in research • Development of evidence-based research • Research in agroforestry • Development of training manuals • Continuous updates to the CSA manual • Dissemination of knowledge and information in local context • Development of evidence-based research • Data collection, archiving and analysis
Tobacco Research Board	<ul style="list-style-type: none"> • Education and awareness of farmers on the importance of re-forestation 	<ul style="list-style-type: none"> • Measurement of GHGs
NGOs	<ul style="list-style-type: none"> • Networking and dissemination of information • Representative voice of NSAs 	<ul style="list-style-type: none"> • Coordination • Development of evidence-based research
Civil society organizations	<ul style="list-style-type: none"> • Facilitation of testing and adoption of climate-smart technologies and practices 	<ul style="list-style-type: none"> • Information dissemination regarding conservation agriculture among smallholder farmers
Agricultural and Research Council (ARC)	<ul style="list-style-type: none"> • Coordination • M&E 	<ul style="list-style-type: none"> • Coordination • M&E • Information management
FAO	<ul style="list-style-type: none"> • M&E • Dissemination 	<ul style="list-style-type: none"> • Coordination • Capacity building • Information dissemination • Knowledge management
UNDP	<ul style="list-style-type: none"> • M&E • Dissemination 	<ul style="list-style-type: none"> • Coordination • Capacity building
World Bank, WFP, IFAD	<ul style="list-style-type: none"> • Finance 	<ul style="list-style-type: none"> • Coordination
Green Impact Trust	<ul style="list-style-type: none"> • Capacity building 	<ul style="list-style-type: none"> • Coordination
Private sector	<ul style="list-style-type: none"> • Information dissemination • Funding of viable and profitable CSA business models • Exploration of investment options in CSA technologies 	<ul style="list-style-type: none"> • Reducing GHGs

Annex 4. Stakeholder-identified needs from CSA MRV system

Stakeholder	What does the stakeholder need to know?	How does / would the stakeholder use this information?	Can the stakeholder get this information from existing M&E systems?	If the stakeholder can fully or partially get the information, from what M&E system can they get it?	If only partially or not at all, is there an M&E system that could be adapted to provide this information?
Ministry of Lands, Agriculture and Rural Resettlement (MLARR), Department of Mechanisation	Area tilled in the country on an annual basis; data disaggregated by tillage systems (i.e., conventional and reduced tillage)	To know if the area under conventional tillage is being reduced	Partially: available data is not disaggregated	Annual crop and livestock assessment reports	The surveillances carried out by AGRITEX
	Area under reduced tillage and disaggregated by power source (tractor, animal, manual)				
	Number of tractors	To get a global picture in terms of mechanisation	Partially: available information not verified	Farmers Unions reports	None
	Number of manual implements	To get a global picture in terms of mechanisation	Partially: available information not verified	Farmers Unions reports	None
	Energy: distribution of solar pumps and biogas plants	To assess the progress towards the use of clean energy sources	Not at all	N/A	None: information is available from the sellers in terms of what is sold
MLARR, Department of Research and Specialist Services	Progress made in terms of adoption of CSA	Informing future research work	Partially	Complementary government activities	Conservation Agriculture Framework
	Feedback from farmers on the CSA practices they would have adopted	The information would be used to craft future research work as well as make improvements in the research done by the department	Partially	Complementary government activities	Conservation Agriculture Framework
MLARR, Department of Irrigation	Available and potential strategies for mainstreaming CSA in irrigation planning	Planning and implementation of irrigation projects and activities	Partially	Not applicable	Not applicable

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	Maintenance status of irrigation systems	Planning and implementation of irrigation projects and activities	Partially	Not applicable	Not applicable
	Available and potential strategies to balance supply and demand in irrigation planning and development	Planning and implementation of irrigation projects and activities	Partially	Not applicable	Not applicable
	Available and potential strategies to stop the current focus on the recurring “spell of rehabilitation”	Planning and implementation of irrigation projects and activities	Partially	Not applicable	Not applicable
MLARR, Department of Livestock and Veterinary Services	Progress of country’s efforts on CSA issues compared to regional counterparts	Management purposes	Not at all	Not applicable	Not applicable
Ministry of Environment, Water and Climate (MEWC), Department of Climate Change Management (DCCM)	Emission footprints	To track mitigation efforts for reporting to the NDCs	Partially: available data is based on estimations, proxies	Local default proxies on emissions	
	Climate adaptation strategies implemented (Type)	To track adaptation efforts for reporting to the NDCs		Progress reports from MLARR	
	Number of farmers adopting CSA	To track adaptation efforts for reporting to the NDCs		Project updates from MLARR	
	Level of resilience	To track rainfed agriculture and renewable energy for reporting to NDCs	Partially: available information not verified	Project updates from MLARR	

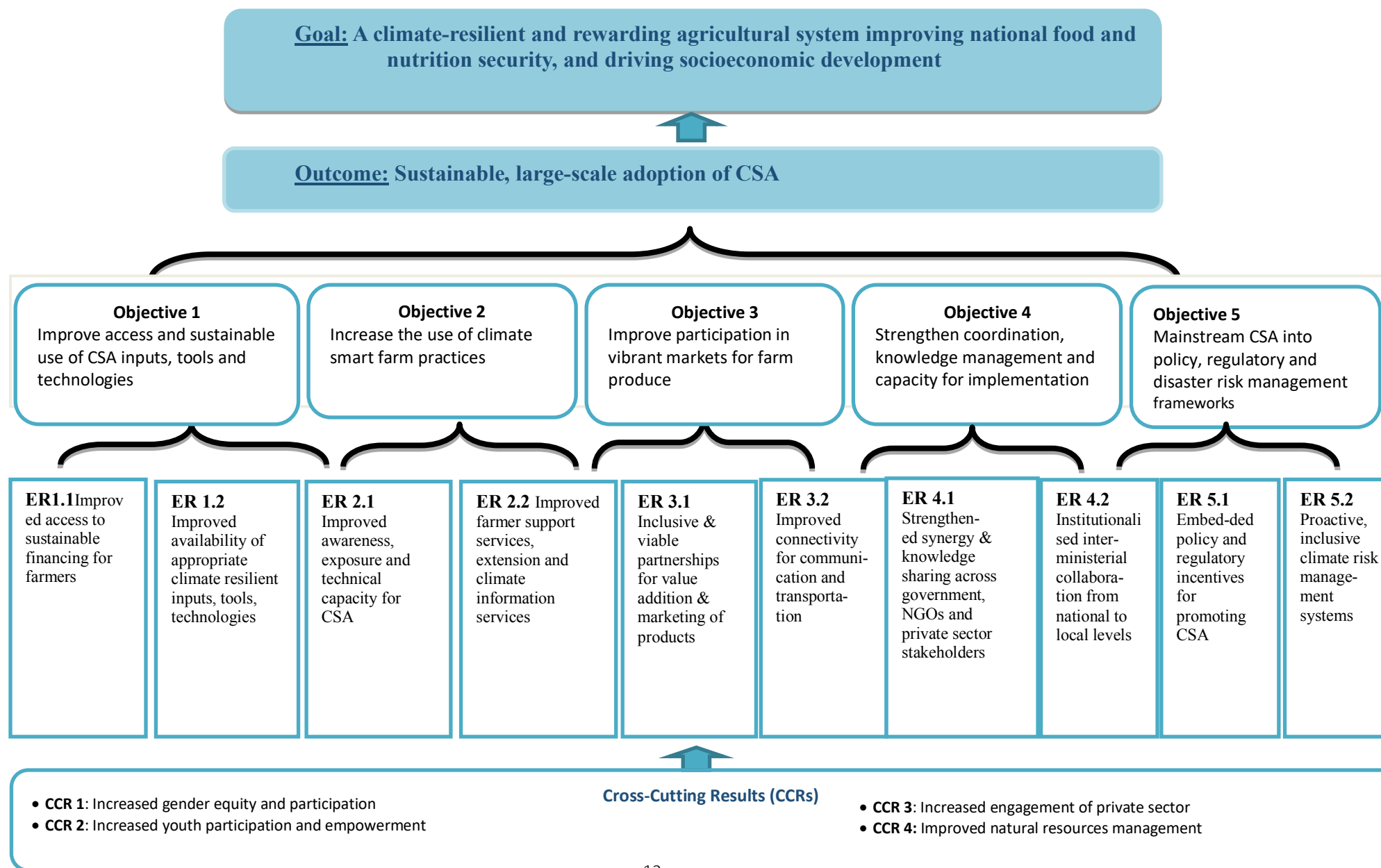
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	Indicators to track CSA impacts	For reporting at policy level and to the NDCs	Not at all		Indicators are still to be developed because CSA is relatively new
FAO	CSA technologies being promoted in the country	For coordination and scaling of CSA activities	Fully	Coordination systems	
	Geographical coverage of CSA activities	To develop a database for CSA activities in the country	Partially	Coordination systems	MLARR agricultural statistical systems
	Farmers implementing CSA activities (Number, type)	To understand coverage and progress in CSA implementation	Partially	Routine progress reports	MLARR agricultural statistical systems: Agricultural Production and Market Information System
	CSA promotion strategies	For scaling of best practices	Partially	Monitoring and field visit reports, routine progress reports	
	Levels of CSA adoption by farmers	To understand interest in intervention	Not at all		Surveys/Assessments
	Impact of CSA	To understand the changes happening at the macro level and at the farmer level	Not all		Surveys/Assessments
AGRITEX CSA focal point in MLARR	Number of farmers practicing CSA	To track progress in promotion of CSA adoption	Partially: through project reports by NGOs promoting CSA; # of farmers adopting is usually implied from farmers practicing CSA by virtue of being project beneficiaries;	NGO project reports and extension reports (NGOs have to work with local extension officers in any community where they operate)	The government is not specifically promoting CSA practices. The main drivers are NGOs in partnership with government through extension workers. NGOs provide resources while AGRITEX provides the connection to the farmers and assists project with farmers trainings

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			farmers taking up CSA practices outside project support are usually left out when tracking adoption		
	Area under CSA practices	To track progress on CSA implementation and report progress to the ministry	Partially: data is bundled with other information on crop production	Weekly crop production reports; annual crop and livestock assessment survey; 1st round; 2nd round; post-harvest survey	
	What CSA projects are being implemented in the country	To track progress on implementation of CSA	Not at all: CSA projects are being implemented as individual projects and all existing projects are not listed		The proposed CSA unit should keep a register of projects being implemented once the CSA framework has been adopted
	Number of households receiving information on CSA	To check the level of awareness of CSA	Partially: workshop reports on CSA training; extension reports highlighting awareness campaigns for CSA materials developed		
	Percentage increase in productivity among households adopting CSA	To assess and provide evidence of the real benefits of CSA	Partially: from crop and livestock assessment surveys		

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	Number of households with increased resilience due to CSA	To assess progress towards building resilience to climate change	Not at all		Surveys for tracking adoption of CSA and evaluating resilience should be carried out by the CSA unit
	Percentage change in incomes of households adopting CSA	To assess how the impact of adopting CSA on household incomes	Not all		Periodic surveys for tracking adoption of CSA and changes in income should be carried out
Agricultural Research Council (ARC)	Amount of coal used in farming	To track emissions	Partially	Estimations from tobacco sales floors	
	Frequency and extent of veld fires	To quantify environmental damage for the purpose of informing policy	Partially	EMA systems	
	Chemicals used in agriculture (type, amount)	To access the environmental damage and inform policy; to lobby for abolition of harmful chemicals	Not all		A list of chemicals used in agriculture and their effects on the local environment
	Number of animals on any given farm	To estimate the amount of enteric fermentation	Partially	Crop/livestock assessments and farmer records	
	Extent and level of erosion	To assess environmental damage and inform policy	Partially: qualitative assessments		Estimations of soil loss using appropriate models
	Yield gains of CSA	To assess benefits for the purposes of scaling up	Not all		There is no deliberate measurement of the impact of CSA

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	Meteorological data on rainfall occurrence, quality and quantity	To assess season quality and inform policy to take appropriate response strategies	Partially	Meteorological data is not localized and there is greater spatial variation in climate data	
Zimbabwe Farmers Union (ZFU)	Existing CSA projects on the ground	Coordination (in terms of who is doing what, where)	Not all		There is no list of projects being implemented
	Number of households adopting CSA practices	CSA scale up	Partially	Project reports and routine reports on progress	
	Level of adoption of CSA practices	For raising awareness	Partially		
	Level of access to a mobile network	To assess feasibility of using mobile phone technology	Partially	ZIMSTAT database	
	Weather information, rainfall predictions	Encouraging farmers to apply for weather-index insurance	Partially	Early warning systems and weather forecasts	

Annex 5. CSA Framework (2017–2027) Results Framework (Source: MLARR and Vuna)



Annex 6: Table of measurable indicators shared by the participants during the national workshop with reference to the CSA Framework

Objective 1: Improved access and sustainable use of CSA inputs, tools and technologies (e.g., knowledge and ownership)
ER 1.1: Improved access to sustainable financing for farmers
- Number of farmers accessing funding
- Number of financial instruments/products offered to farmers by financial institutions
- Percentage allocation to agriculture and to CSA
ER 1.2: Improved availability of appropriate climate-resilient inputs, tools, technologies
- Number of farmers with access to technologies
- Number of farmers with access to improved knowledge
- Number of farmers adapting/practising technologies
- Number of CSA technologies to be explored later
- Number of CSA technologies adopted
Objective 2: Increase the use of climate-smart farm practices
ER 2.1: Improved awareness, exposure and technical capacity for CSA
- Knowledge, attitudes and practices scores targeting researchers, extension and equipment manufacturers
- Number of projects measuring GHGs and carbon sequestration
- Number of projects measuring enteric fermentation
- Number of CSA demonstrations
- Number of equipment manufacturers manufacturing/producing CSA equipment
- Number of workshops/trainings/awareness raising events on CSA
ER 2.2: Improved farmer support services, extension and climate information services
- Number of information, education and communication materials and timing of the materials
- Number of research publications
- Number of extension methods and channels of communication
- Number of weather-index insurance technologies
- Number of standard rain gauges and local level weather stations (operational)
- Number of information communication technology (ICT) platforms
- Number of farmers accessing early warning systems
- Number of farmers using early warning systems
Objective 3: Improve participation in vibrant markets for farm produce
ER 3.1: Inclusive & viable partnerships for value addition & marketing of products
- Proportional contribution of agriculture to household income
- Number of farmers engaged in post-harvest processes
- Number of partnerships brokered
- Number of formal and informal markets
- Percentage of farmers using CSA processing, handling and storage technologies
- Number of women and youths participating

ER 3.2: Improved connectivity for communication and transportation

- Number of ICT platforms established
- Percentage reduction in transport costs
- Percentage reduction in round-trip travel time
- Number of private-public-community partnerships

Objective 4: Strengthen coordination, knowledge management and capacity for implementation**ER 4.1: Strengthened synergy and knowledge sharing across government, NGOs and private sector stakeholders**

- Number of knowledge-sharing platforms
- Existence of CSA coordinating platforms
- Number and type of IEC materials shared
- Number of stakeholders accessing and utilizing IEC materials

ER 4.2: Institutionalised inter-ministerial collaboration from national to local levels

- Number of functional high-level steering committees
- Number of reports produced for this meeting
- Number of government departments participating and mainstreaming CSA in their operations
- Number of public/private institutions participating and mainstreaming CSA in their operations

Objective 5: Mainstream CSA into policy, regulatory and disaster-risk management frameworks**ER 5.1: Embedded policy and regulatory incentives for promoting CSA**

- Number of policy briefs developed on key CSA issues
- Number of carbon credits or amount of carbon financing given
- Number of incentives to industry players who buy CSA products
- Number of e-learning platforms devoted to CSA (e.g., webinars, websites and online courses)

ER 5.2: Proactive, inclusive climate-risk management systems

- Number of private-public companies offering weather-index insurance (e.g., irrigation and biodiversity conservation)
- Number of farmers accessing weather-index insurance
- Number of weather-index insurance products available to farmers
- Number of risk-management systems developed for farmers