

# Effective incentives for CSA adoption

The 5<sup>th</sup> Global Science Conference on Climate-Smart Agriculture 2019, Transforming food systems under a changing climate, 8-10 October 2019, Bali, Indonesia

## Background

There is a large and growing literature on the potential use of policy instruments for stimulating the adoption of Climate-Smart Agriculture (CSA) practices. Moreover, there is an increasing demand for better understanding the possibilities to support CSA adoption through socio-economic policies and incentives.

## Objective

The objective of this work was to review and understand how an array of potential policy instruments can serve as mechanisms for enhancing adoption and upscaling the array of potential CSA practices.

## Intervention strategies

The effectiveness of certain policy instruments are ascertained by means of a (matrix) heat map, capturing CSA practices (rows) and policy instruments (columns). Six key CSA practices were identified, namely water management, soil & nutrient management, crop tolerance to stress, agroforestry & intercropping, crop rotation & mixed systems, and pest & disease management. Also six key policy instruments were identified, namely market prices, taxes & subsidies, land rights, rural finance, training & information, and certification & labelling.

## Results

- Price policies and factor market access programs are generally effective for CSA adoption.
- The working sphere of training and certification programs is fairly limited (most effects are found in the area of soil fertility management).
- Programs of land titling and rural finance do benefit from combinations with farmer training and organization.
- Limited evidence is available on possible incentives to support better pest and disease management.

## Discussion

- Available studies have a narrow focus on the functional properties of policy instruments, disregarding indirect effects through income enhancement and food security.
- Also most studies look at an isolated combination of a specific policy instrument and CSA practice, thereby ignoring substitution, complementary or conditional effects between policy measures and CSA practices.

## Authors

Evan Girvetz<sup>1</sup>, Marcel van Asseldonk<sup>2</sup>, Haki Pamuk<sup>2</sup>, Cor Wattel<sup>2</sup>, Ruerd Ruben<sup>2</sup>

<sup>1</sup>International Center for Tropical Agriculture, <sup>2</sup>Wageningen Economic Research, Wageningen University and Research

## Pilot areas

Sova et al. (2018) identified key CSA practices that are most used in sub-Saharan Africa to support the transition towards more resilient farming systems. CSA practices are incredibly diverse and reflect the context-specificity of opportunities, constraints and vulnerabilities. Even while CSA is highly diverse, six technology clusters account for 76% of all CSA technologies identified as climate-smart across 33 countries (Figure 1).

Incentives →	Pricing		Access		Upgrading		Other
	Market prices	Taxes & Subsidies	Land Rights	Rural Finance	Training & Information	Certification & Labelling	
CSA Practices ↓						3% Integrated pest management 2% Disease management	3% Climate services 2% Diet management
		9% Organic inputs			5% Crop rotation		2% Grazing management
		5% Conservation agriculture		9% Intercropping 2% Tree management	2% Diversification		2% Improved rice management
		4% Fertilizer management	13% Crop tolerance to stress				2% Improved pastures
		2% Mulching	2% Genetic improvement				2% Aquaculture
		14% Water management	2% Reduced/ no tillage	2% Variety improvement			1% Housing 1% Boundary planting 9% Other
Total (%)	14%	22%	17%	11%	7%	5%	24%

Figure 1. Frequency of use of CSA practices (based on Sova et al., 2018).

Incentives →	Pricing		Access		Upgrading	
	Market prices	Taxes & Subsidies	Land Rights	Rural Finance	Training & Information	Certification & Labelling
Water Management	High	Low	Low	Low	Low	Low
Soil & Nutrient Management	High	Low	Low	Low	Low	Low
Crop tolerance to stress	High	Low	Low	Low	Low	Low
Agroforestry & Intercropping	High	Low	Low	Low	Low	Low
Crop rotation & mixed systems	High	Low	Low	Low	Low	Low
Pest & disease management	High	Low	n.d.	Low	Low	Low
N (number of cases)	15	12	6	20	9	5

Note: <sup>1</sup> Share of cases per policy instrument that report on CSA adoption (cases can comprise multiple incentives and practices). n.d = no data

Low	Medium	High
0-20%	20-40%	40-60%
60-80%	80-100%	

Figure 2. Heat map of incentives for CSA practice adoption<sup>1</sup>

## Conclusions

We advocate for more integrated approaches that also consider the indirect effects of policy instruments on CSA adoption an upscaling.