



The role of Conservation Agriculture to achieve the Green Deal in Europe

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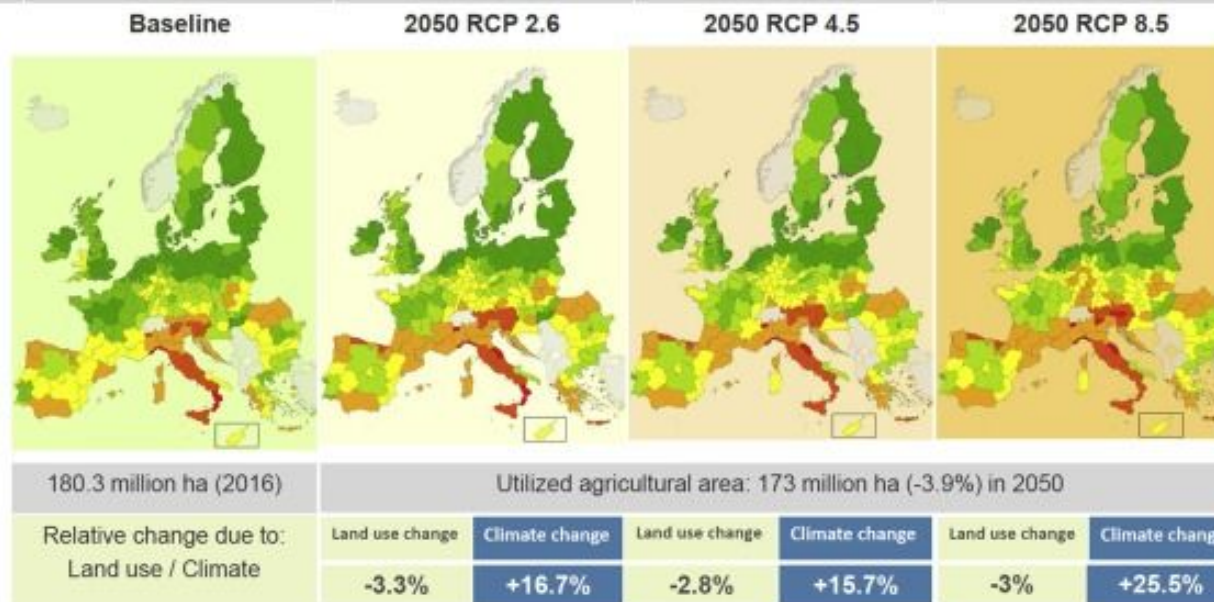
Theme:
Building a Resilient Future in Africa
through Conservation Agriculture and Sustainable
Mechanization

Introduction

- **Soil tillage** is threatening the sustainability of **agricultural ecosystems**
- **More than 60%** of European **soils are degraded or highly degraded** largely due to agriculture.
- **Farmland values** are projected to decrease in parts of southern Europe by **more than 80 % by 2100**

Total soil loss [Mt]	553	596 (+8%)	595 (+8%)	645 (+17%)
Mean soil loss [$t\ ha^{-1}\ yr^{-1}$]	3.07	3.47 (+13%)	3.46 (+13%)	3.76 (+22.5%)
% of land in severe erosion	6.6	7.8	7.7	8.6
% of land with increased erosion (Future vs. Baseline)	-	74	76	84

Soil erosion



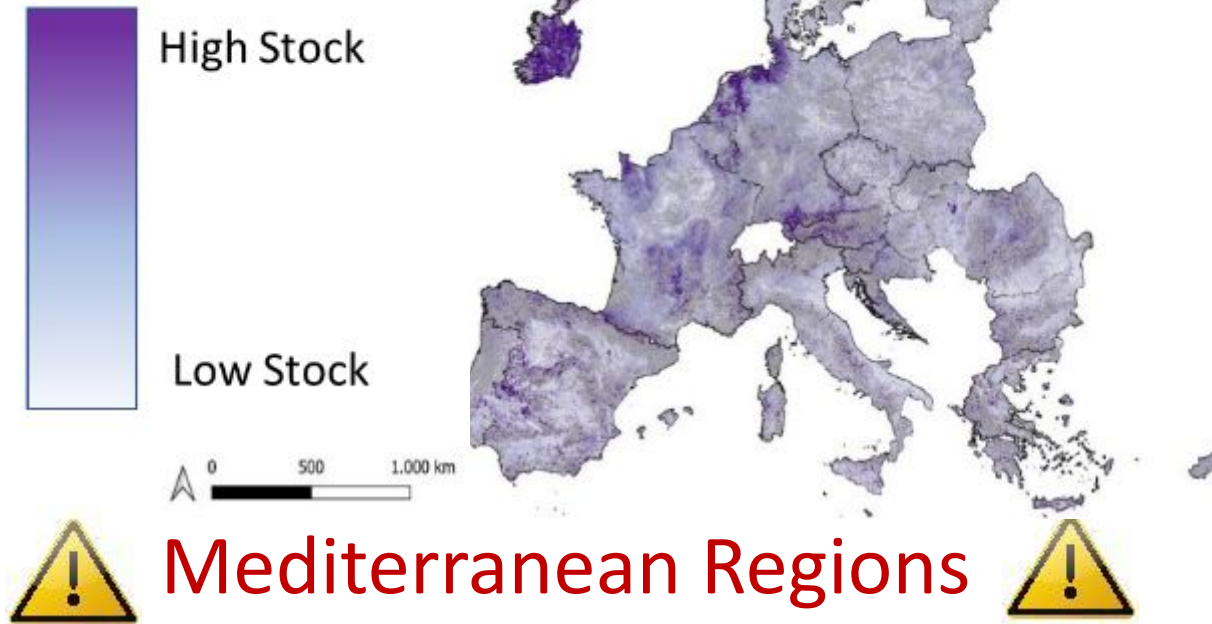
The rainfall erosivity projections use three Representative Concentration Pathways (RCPs) from the most aggressive mitigation pathway (RCP 2.6) to the less aggressive one (RCP8.5)

Source: Panagos et al. 2021

Introduction



Carbon in crops and pastures
soils



Source: Andrés et al. (2022).



Adapt European agricultural systems without compromising sustainability

Conservation Agriculture in the European Policies



European Policies

Reduce by 50% the overall use and risk of chemical pesticides and reduce the use by 50% of more hazardous pesticides by 2030

Reduce nutrient losses by at least 50% while ensuring no deterioration in soil fertility; this will reduce the use of mineral fertilisers by at least 20 % by 2030



How Conservation Agriculture can help to achieve these targets?

Climate

Environment

Antimicrobial resistance

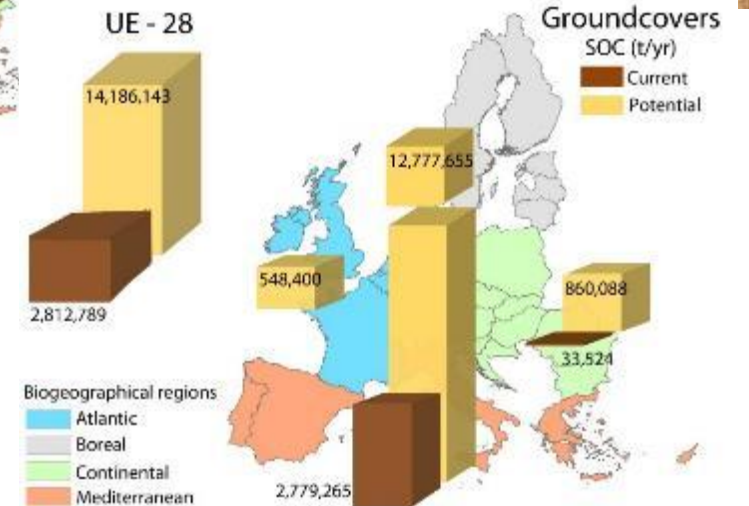
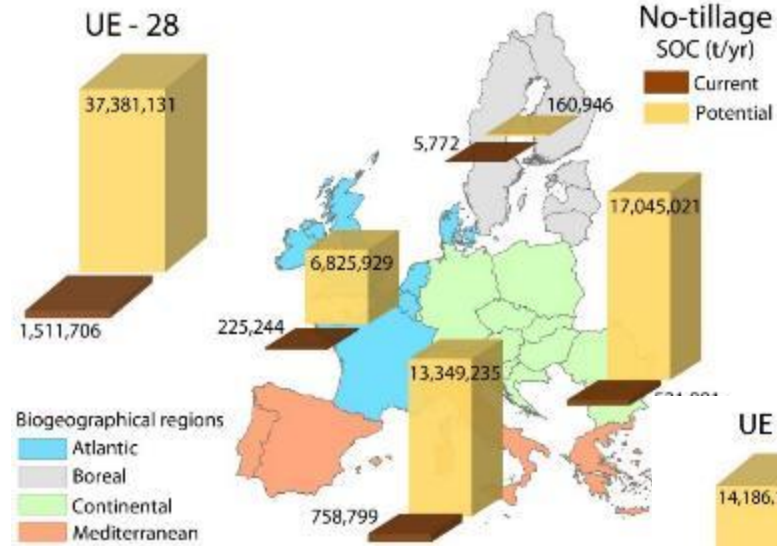
Animal welfare

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Climate targets

- Contributing to climate change mitigation and adaptation.
- 55% reduction in GHG emissions by 2030 compared to 1990.
- Energy efficiency, green heating and carbon capture and storage.

24% of agricultural GHG emissions would be reduced with the potential adoption of CA



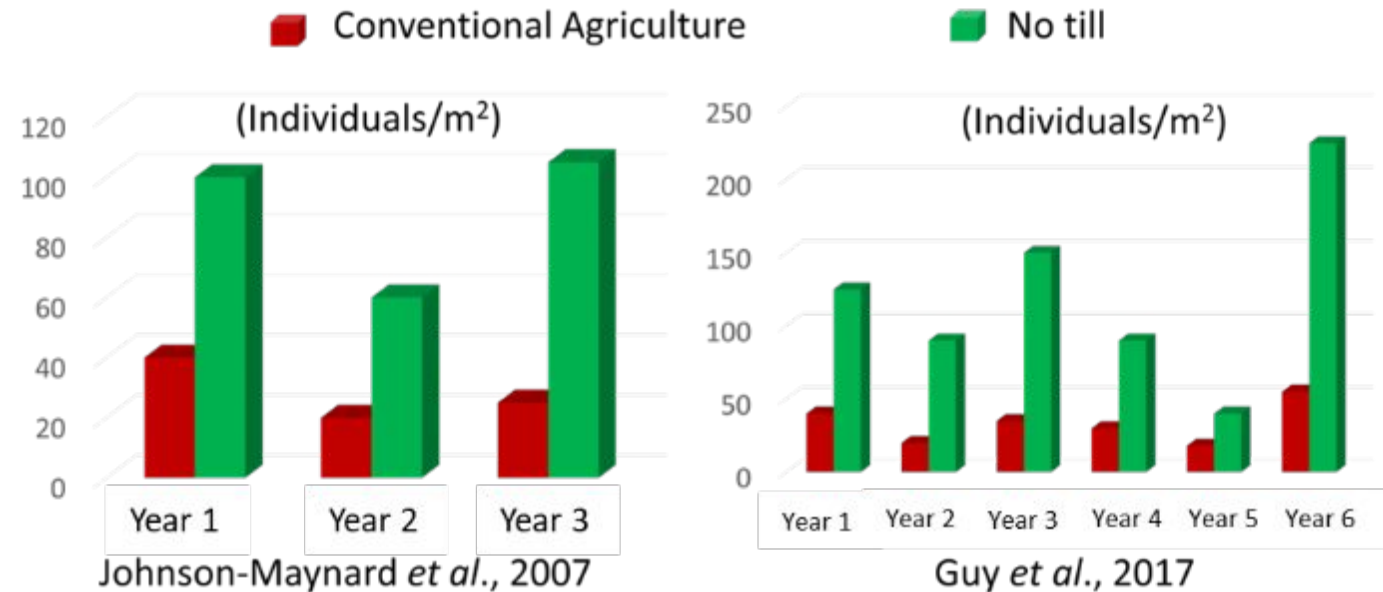
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Environmental targets

- Efficient natural resource management
- Halting and reversing biodiversity loss
- Green transition in agriculture and the environment



Earthworm Density

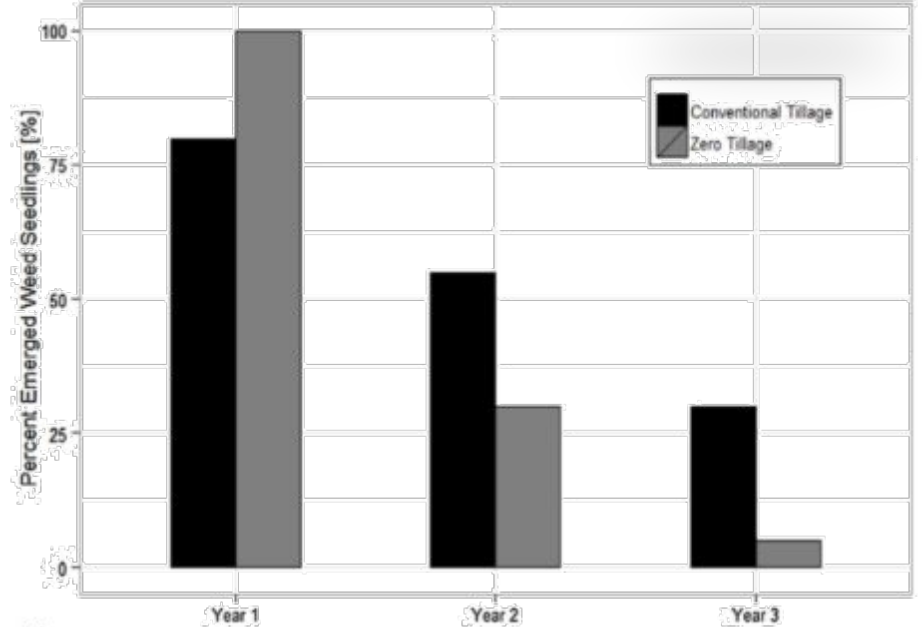
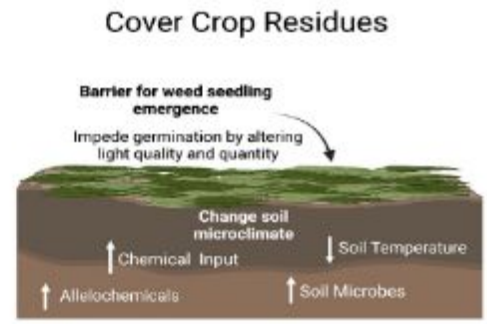
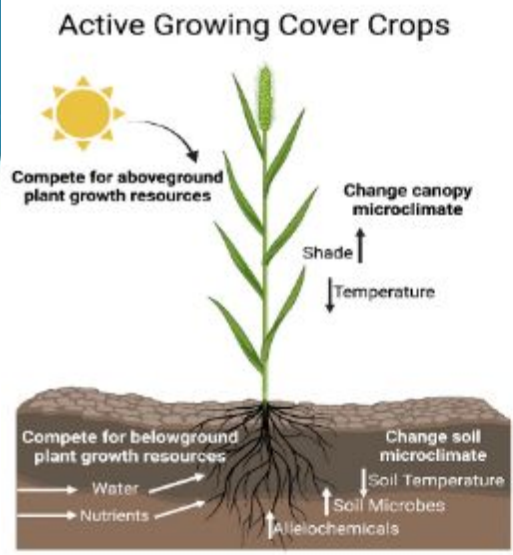


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Pesticides reduction



Weed Suppression Mechanisms of Cover Crops

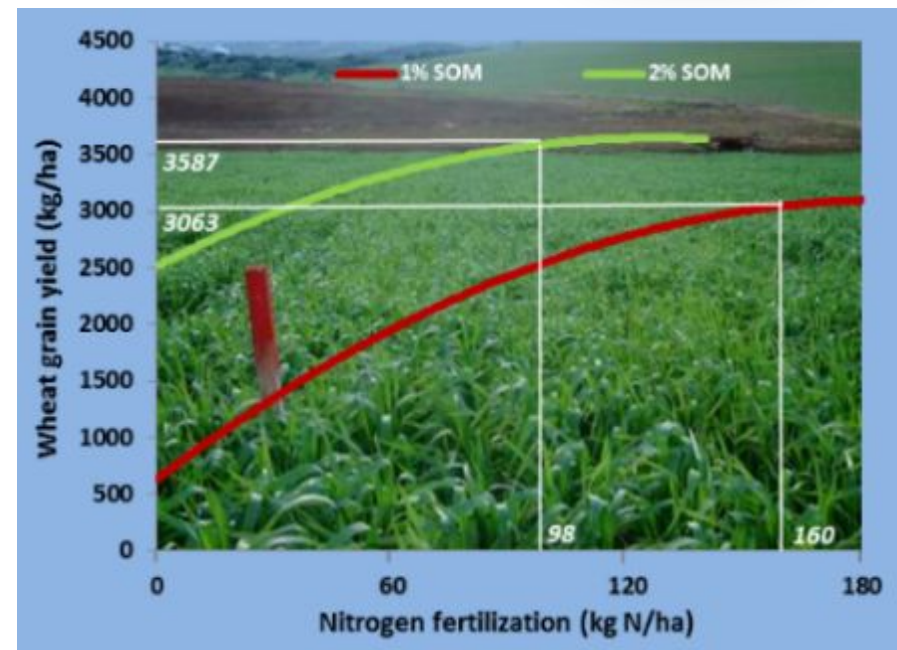
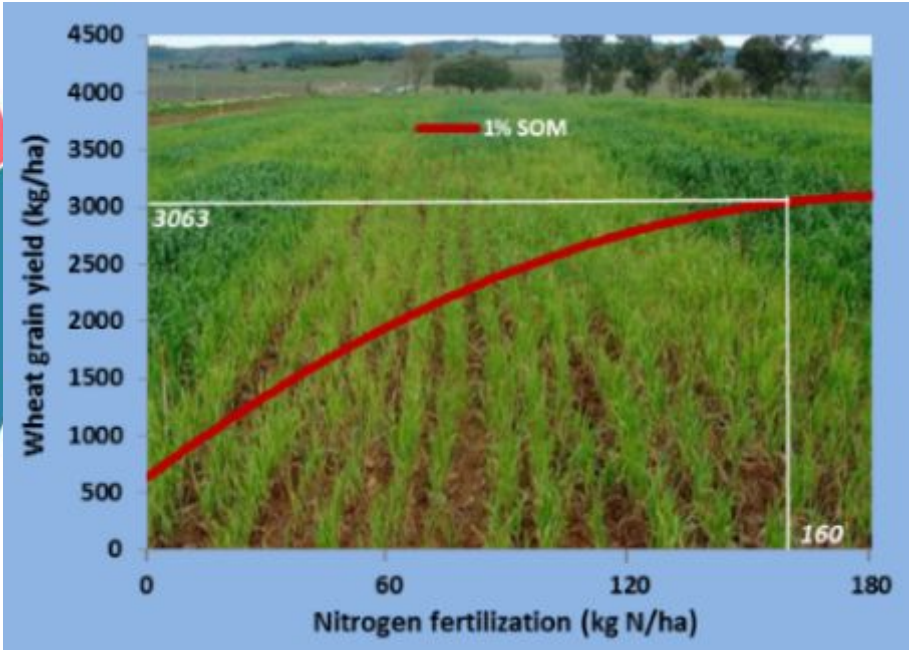


Nichols et al. (2015)

Fernando et al. (2023)

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Fertilizers reduction



Source: Carvalho *et al.* (2012)

Conservation Agriculture in the European Policies. The Spanish Case

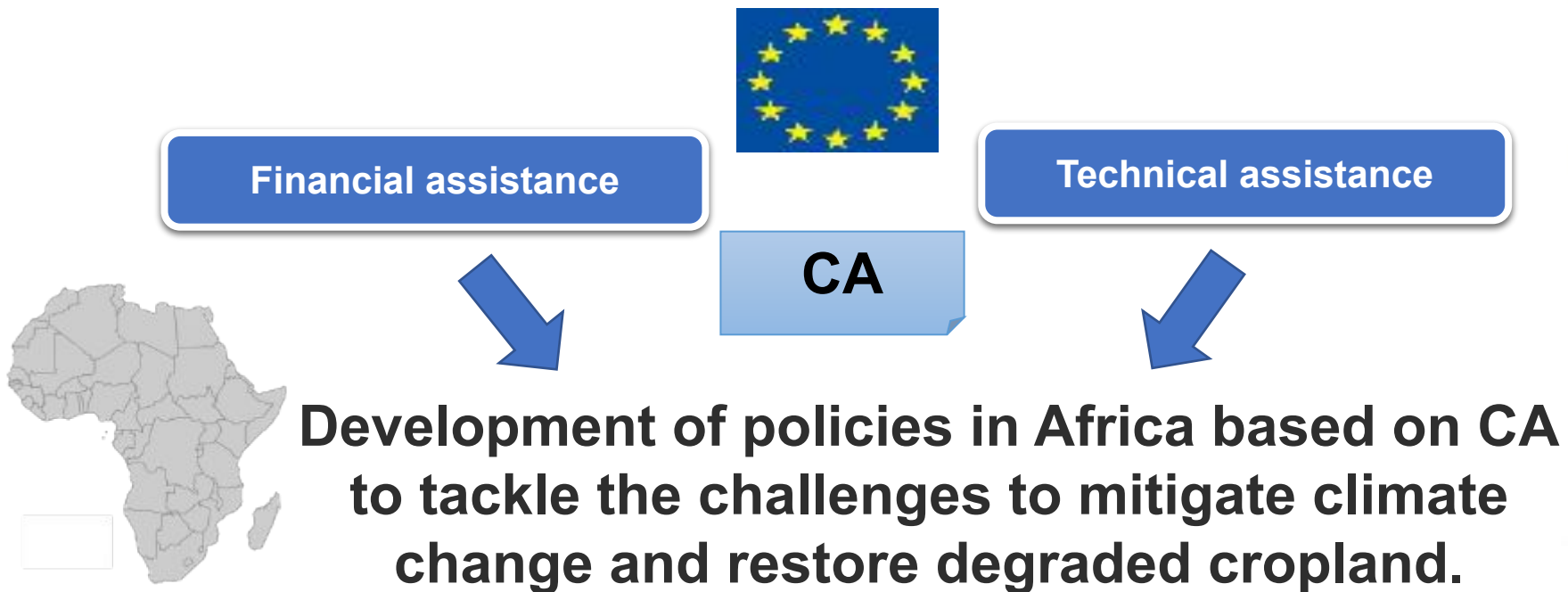
- Ministry of Agriculture included **four practices based on CA principles in the ecoschemes** (Crop rotation with improving species; Direct Seeding; Spontaneous or seeded vegetative groundcovers; Inert Cover)
- Subsidies **between 48 and 165 € ha⁻¹** (depending on the case)
- Irrespective of the practice (**direct seeding or groundcovers**), an additional support of **€25/ha** can be obtained if implemented during two consecutive years.



Area under CA in Spain

Green Deal contributions to spread CA in Africa

- **Africa faces serious threats** from both climate change and land degradation
- If land degradation continues at the current rate, **more than half of cropland in Africa will be unusable by 2050** (AGNES, 2020)



Conclusions

- The introduction of **agricultural practices based on the three principles of CA** on all European and African croplands will help **achieve the Green Deals targets** in the EU and will enhance the **collaboration between the EU and the African countries**, especially those in the Mediterranean basin.
- Governments should focus their support and direct **funds and subsidies** towards the promotion and **implementation of CA practices** to **mitigate climate change** and **optimise the use of inputs**, while improving **soil health** and ensuring environmental **sustainability**.
- The EU should facilitate **close collaboration** with African countries to **spread the adoption of CA** as the best agricultural system to make agriculture resilient and sustainable.



3 ACCA



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