



- Climate Smart Agriculture -

Sustainable development in a changing climate

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Outline

- Why was CSA created?
- What is CSA?
- Examples
- Next steps in the region





Why CSA? Global Trends



Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (2007)



- Change in diets
- Unsustainable use natural resources
- Environmental degradation



Why CSA? Climate change impacts



- Short run
- Long run
- Climate change creates new risks & challenges and exacerbates existing vulnerabilities



Why CSA? Uncoordinated responses

- Lack of coordination of responses between sectors
- Separation of adaptation and mitigation in UNFCCC
- Lack of understanding of the role of agriculture in CC and food security
- Need to link CCA/CCM and DRR into main agricultural and rural development interventions





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Climate Smart Agriculture





A global approach with locally appropriate actions

- CSA is not an agricultural practice or system *per se*
- CSA is location-specific
- CSA applies across scales
- CSA is cross-sectoral





Climate Smart Agriculture (CSA)





Concept evolution

• **2010:** CSA was introduced as a concept by FAO at the *Global Conference on Agriculture, Food Security and Climate Change* in the Hague.

• 2012: CSA Landscapes, Country implementation, Green Economy



 2010-2014: Widespread interest in and uptake of the concept, both among partner organizations and countries. <u>www.fao.org/docrep/018/i3325e/i3325e</u>



CLIMATE-SMART AGRICULTURE

Climate-Smart[®] Agricultur

CSA Sourcebook



Identifying suitable on farm and agricultural options

- Intensification of production
- Sustainable & efficient use of resources
- Climate smart agriculture
 practices







Landscape & ecosystem level

 Integrated landscape approach: synergies for AG production through coordinated actions at farm, ecosystem & landscape scales.

Protect Natural Habitats

Incentives to protect natural forests and grasslands include certification, payment for climate services, securing land tenure rights, and community fire control.

Restore Degraded Watersheds and Rangelands Degradation costs livelihood assets and essential watershed functions; restoration can be a win-win strategy for addressing climate change, rural poverty, and water scarcity.

Enrich Soil Carbon

Agricultural soils can be managed to reduce emissions by minimizing tillage, reducing the use of nitrogen fertilizers, preventing erosion, increasing organic matter content, and adding biochar.

Climate-Friendly Livestock Systems

Climate-friendly livestock production requires rotational grazing systems, manure management, methane capture, improved feeds, as well as an overall reduction in livestock numbers.

Farm with Perennials

Perennial crops, like grasses, palms, and trees, maintain and develop their root system, capture carbon, increase water infiltration, and reduce erosion.

Scherr et al. 2012



CSA – value chains

Reducing food losses and waste challenge and opportunity







Enabling environment

Local and national

Policy alignment Legislation Incentives/taxation Financial flows Coordination Farmer

Access to services Access to knowledge Access to Markets Safety nets



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Linking CC finance to overcome agriculture investment barriers

Investment Barrier to Adoption





Rice Production System

Alternate wetting and drying in irrigated rice





Fertilizer Deep Placement

Production of briquettes

Its production in the village...



Prilled or granular urea



Briquettes bagged and sold to farmers near the village

Increase yield by 18 percent

Reduced fertilizer use by 1/3 More labor intensive (woman)

Less water contamination



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Liquorice - Glycyrrhiza glabra

- Leguminosae: nitrogen fixing
- Salt tolerant
- Low water requirements
- **High protein fodder**
- High value export commodity
- Salinity reduced and water content imp.
- **3-5 years before cropping**



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CSA in practice

More examples of CSA interventions

www.fao.org/gacsa/resources/ csa-documents/en/

A Gender-responsive Approach to Climate-Smart Agriculture Evidence and guidance for practitioners



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Alternate wetting and drying in irrigated rice Implementation guidance for policymaker: and investor: Meryl Richards, S. Ole Sander

OVERVIEW OF ALTERNATE WETTING AND DRYING

Alternate wetting and drying (AWD) is a management practice in intgated lowland rice that saves water and reduces greenhouse gas (GHG) emissions while maintaining yields. The practice of AWD is defined by the periodic drying and re-Rooding of the rice field.

While AND programs a specifie water regime (see The practice of AND on the form, below), the practice of allowing the water table to drop below the soil carboe at one or multiple points during practices. Insue because and the second decades as water-axing practices have been used for second decades as water-axing of state management and short learners and of another of state management and short learners in a drop during do and for state the second second and and the second second second more than ODM. AND-BAR practices have continued to spread.

A large potential exists for CHC reductions from rice paddies through the use of systematically introduced AWD, optimized for CHC mitigation. At present, AWD is widely useeptied as the most promising practice for reducing CHC emissions from irrigated rice for its large methance reductions and multiple benefit.

CGIAR Ford Security CCAFS

KEY MESSAGES

Atternete wetting and drying (AWD) is a rice management practice that includes water use by up to 30% and can save themes money on intigation and pumping costs.

2 AWD reduces methane emissions by 40% without reducing yield.

3 Efficient nitrogen use and application of organic inputs to dry soil can further reduce emissions.

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www.fao.org/3/a-i3817e.pdf



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Western Balkans

Transitioning from emergency response to preparedness and natural hazard reduction

In particular floods and drought

Albania, BH, Macedonia, Montenegro, Serbia





AG interventions for reduction of natural hazards

Incentive schemes to farmers to manage their land to reduce natural hazards.

UK EU farm grants

Whole river catchments

Benefit wildlife, slow the flow of water and improve water quality

underpinned by scientific evidence



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www.fao.org/climatechange

Next steps in the region

- Continue to provide climatic services to member countries
- Further test, validate and replicate DRR/climate smart practices that aim to reduce impact of e.g. droughts, floods, salinity;
- Investment in filling data and knowledge gaps, in particular to tailor climate services to farmer's needs;
- Promoting enabling policy & institutional environment.
- Development of national and regional CSA programme in Central Asia, including FAO's EPIC application;
- "Flagship" country for CSA approach



CSA Umbrella programme

- **CSA Countries Food security** • Nutrition • **Partners** • sensitive CCA/DRR/CCM • GACSA • collaboration
 - Environment
 - Energy



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Making the CSA vision a reality

23-24 September 2014:

- Launch of the Global Alliance for Climate-Smart Agriculture (GACSA)
- Voluntary membership
- Multi-stakeholder partnership
- 3 action groups







Initial target

countries:

CONVENOR



TECHNICAL MEMBERS



INTERNATIONAL NGO MEMBERS











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Children and youth engagement





50 million

Youth 1.1 billion **18 percent** Children 1.9 billion **31 percent**



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Youth: non-formal education



CBD :: FAO :: PLAN INTERNATIONAL :: UNFCCC :: UNU-IAS WAGGGS :: WOSM :: YOUTH CLIMATE



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> Climate change Junior Farmer Field and Life School – Facilitator's guide





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MAKING IT COUNT INCREASING THE IMPACT OF CLIMATE CHANGE AND FOOD SECURITY EDUCATION PROGRAMMES









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FAO Agroecology meeting

• 23-25 November 2016

Budapest

 Europe and Central Asia





Thank you!

For more information, please visit:

www.fao.org/climatechange

and

www.fao.org/climate-smart-agriculture

and

www.fao.org/gacsa



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