

# Handout 3.5.1: Landscape CSA Practices and Their Benefits

## Practices that primarily confer adaptation benefits

- Maintenance of habitat connectivity to
- Ensure pollination and pest control
- Development of water collector systems, irrigation infrastructure and other engineering solutions to reduce risks of floods, water scarcity, and other climate-related risks
- Targeted location of intensive livestock production within the landscape to reduce water contamination
- Diversification of farmer income options

## Practices that provide adaptation and mitigation benefits

- Land-use planning at the landscape level for multiple objectives
- Maintenance of landscape diversity—including a mosaic of agricultural land and natural habitat
- Conservation and restoration of riparian areas within the agricultural landscape
- Conservation and restoration of remaining forest habitat in the surrounding landscape—including formal and informal protected areas
- Establishment of agroforestry and silvopastoral systems
- Sustainable intensification of livestock production and crop production in some areas, to reduce pressure on fragile areas
- Increases in the duration of fallow periods in shift and burn cultivation
- Restoration of degraded or fragile lands
- Conservation and restoration of wetlands and peat lands

## Practices that primarily confer mitigation benefits

- Planting of biofuel feedstock
- Careful management of fires



Adapted from Harvey et al, 2014. "Climate-Smart Landscapes", Conservation Letters.

- Reduced expansion of cropland into remaining natural habitat

Scale	Practices that primarily confer adaptation benefits	Practices that provide adaptation and mitigation benefits	Practices that primarily confer mitigation benefits
FIELD OR PLOT	<ul style="list-style-type: none"> <li>• Use of new crop varieties or livestock breeds that are drought-tolerant, or bred for specific environmental stresses</li> <li>• Adjustments in irrigation practices and systems</li> <li>• Changes in timing of planting, pruning or harvesting</li> <li>• Adjustments in cropping sequence and timing of irrigation or application of fertilizers and pesticides</li> <li>• Changes in timing, duration, and location of animal grazing</li> <li>• Conservation of crop and livestock genetic diversity</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated soil and water conservation efforts</li> <li>• Incorporation of organic fertilizers and cover crops</li> <li>• Reduced or zero tillage</li> <li>• Maintenance of crop residues</li> <li>• Breeding crop varieties for shade tolerance</li> <li>• Use of agroforestry</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced or more efficient use of fertilizers and pesticides</li> <li>• Adjustments in the type of feed provided to cattle</li> <li>• Reduced frequency or extent of fires</li> <li>• Reduced or more efficient use of machinery and fossil fuels</li> <li>• Improved management of cultivated wetland rice areas to reduce methane emissions</li> </ul>

FARM	<ul style="list-style-type: none"> <li>● Changes in rotation or production systems</li> <li>● Improved water harvesting and retention through ponds, dams, etc.</li> <li>● Increased water use efficiency through improved irrigation practices</li> <li>● Conservation of agrobiodiversity</li> <li>● Use of seasonal and multiyear forecasting</li> <li>● Farm insurance or crop or livestock insurance</li> </ul>	<ul style="list-style-type: none"> <li>● Land-use planning at the landscape level for multiple objectives</li> <li>● Maintenance of landscape diversity—including a mosaic of agricultural land and natural habitat</li> <li>● Conservation and restoration of riparian areas within the agricultural landscape</li> <li>● Conservation and restoration of remaining forest habitat in the surrounding landscape—including formal and informal protected areas</li> <li>● Establishment of agroforestry and silvopastoral systems</li> <li>● Sustainable intensification of livestock production and crop production in some areas, to reduce pressure on fragile areas</li> <li>● Increases in the duration of fallow periods in shift and burn cultivation</li> <li>● Restoration of degraded or fragile lands</li> <li>● Conservation and restoration of wetlands and peat lands</li> <li>● Reduced expansion of cropland into remaining natural habitat</li> </ul>	<ul style="list-style-type: none"> <li>● Reduced or more efficient use of agrochemicals</li> <li>● Planting of biofuels and trees for fuel wood</li> <li>● Planting of fast-growing tree plantations</li> <li>● Reduced use of machinery and fossil fuels</li> <li>● Generation of biogas from manure</li> <li>● Use of improved feeding practices for livestock</li> </ul>
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LANDSCAPE

- Maintenance of habitat connectivity to
- ensure pollination and pest control
- Development of water collector systems, irrigation infrastructure and other engineering solutions to reduce risks of floods, water scarcity, and other
- climate-related risks
- Targeted location of intensive livestock production within the landscape to reduce water contamination
- Diversification of farmer income options
- Diversification of crops and livestock systems on the farm
- Soil conservation practices, including terracing and land contouring
- Improved residue management and use of cover crops
- Integrated nutrient management
- Use of agroforestry
- Use of silvopastoral systems (e.g., trees in pastures, live fences, fodder banks)
- Appropriate animal rotation practices
- Use of conservation agriculture (i.e., minimal soil disturbance, maintenance of mulches, use of crop rotations and intercropping, integrated pest management)
- Use of multi-cropping, intercropping, and crop rotations
- Planting of biofuel feedstock
- Careful management of fires