Food and Agriculture Organization
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A Landscape Approach to Livestock Feeding Systems in the Face of Climate Change

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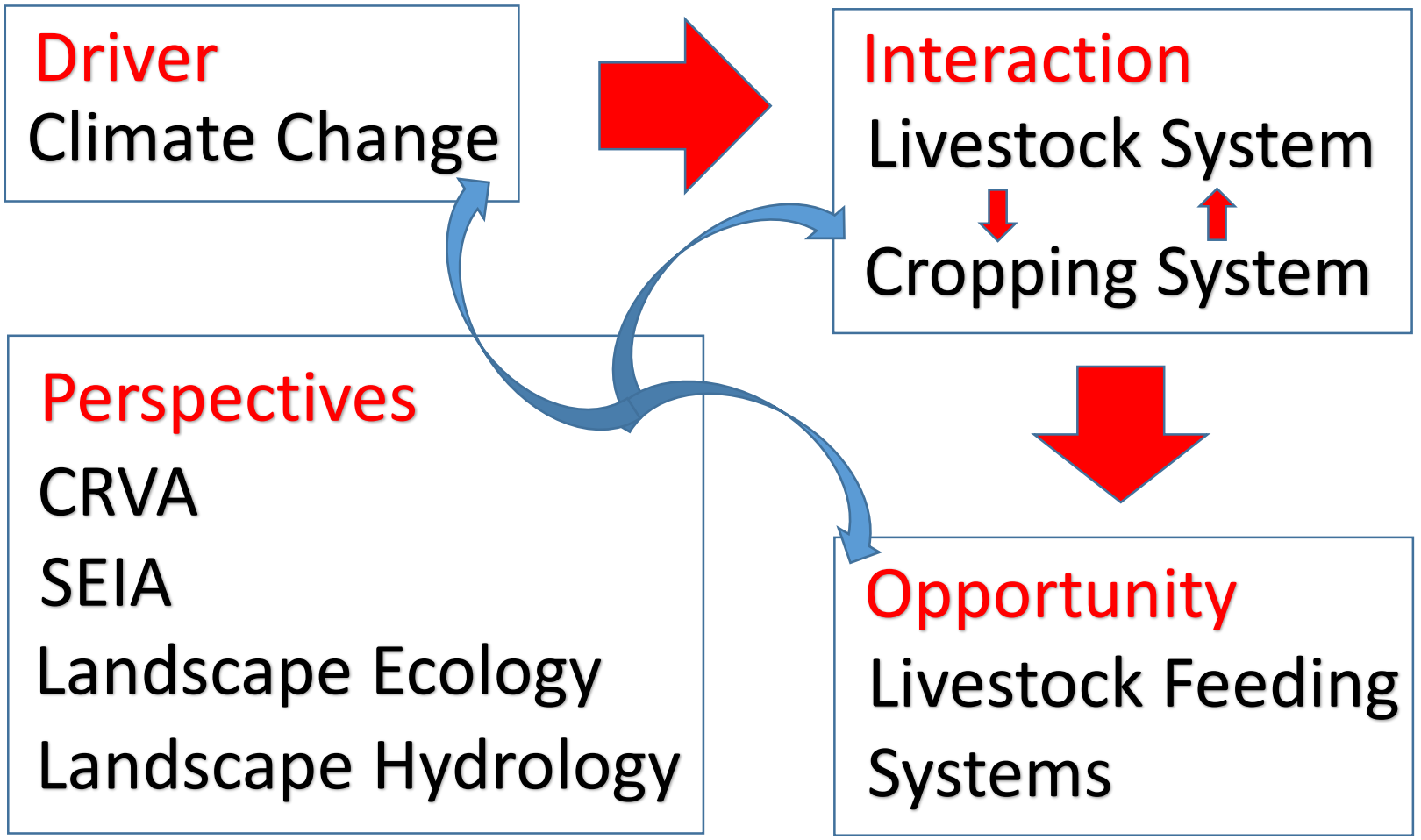
Structure of Presentation

- Introduction – livestock sector analysis of risk & opportunity
- Climate change expectations, choices, SDG focus & linkages
- Livestock sector & landscape function
- CRVA – Crop & intensive livestock risk
- CRVA – Extensive livestock risk & opportunity
- CRVA – Smallholder risk & opportunity
- Livestock sector - landscape approach

Livestock Sector – Risk & Opportunity

- Practitioner analysis merging differing perspectives



Climate Change – Expectations

- Temperature increase + 1.6 – 2.0 ^{0}C by 2100
- Rainfall shift –
  - timing – yearly rainfall & seasons less reliable
  - intensity – increased, more thunder storms & stronger typhoons
  - amount – spatially variable increase & decrease in average annual rainfall
- Most impact water-related – direct impact on water supply, floods & evaporation (focus of direct action)
- Less impact temperature-related - indirect ecological impacts (evaporation loss, crop, diseases, pests)) (focus of monitoring & research)

Climate Change – Expectation & Choice

- Climate cycles will have greater rainfall impact than climate change trend
- Existing problems in water supply, droughts & floods will get worse
- Climate change response (CCA) will merge into Disaster Risk Management (DRM)
- Choice of focus - mitigation, adaptation or disaster response?
  - reduce global impact (mitigation)?
  - reduce national risk before you reach disaster (adaptation / resilience)?
  - response to disaster when it happens (DRM)?

Climate Change – SDG Focus & Linkages

- Sustainable Development Goals – cascade of linkages & priorities

- action on climate change & impacts

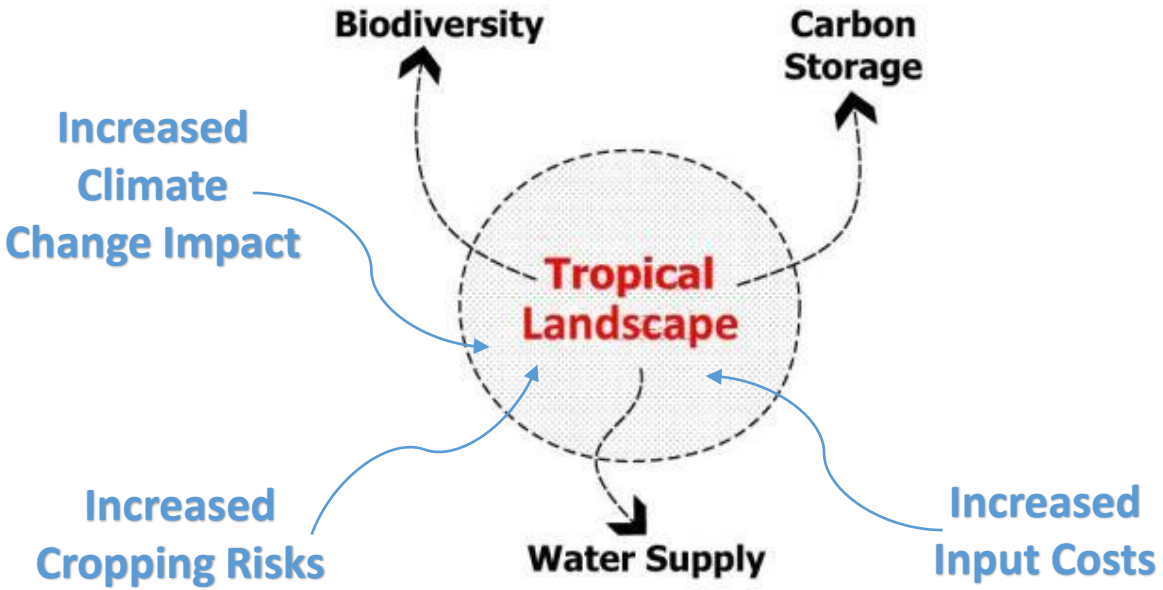
- sustainable & available water & sanitation

– sustainable ecosystems & consumption patterns

– inclusive economy, health & zero poverty & hunger

Livestock Sector & Landscape Function

Which way for Livestock Sector in face of Climate Change?



Answer – CCA using Livestock Feeding Systems

CRVA – Crop / Intensive Livestock Risk

- Cropping becomes more risky & heavily affected by climate impact
  - Wet season crops cannot be moved to avoid floods & farmers remain unaware of flood risk
  - Lowland crop failure increases due to large floods & typhoons - particularly rice
  - Crop planning will need to work with flood pattern & not struggle against it
  - Wet season crop failure increases due to drought & unreliable rainfall
  - Dry season crop failure increases as water supply decreases & floodplain water storage is damaged by development & flood control
  - Intensive poultry, pig, dairy & cattle production (& fish farms) become risky & more affected by crop-based feed shortage & expense

CRVA – Extensive Livestock Risk

- Extensive livestock less affected by climate impact
  - Livestock can move to avoid floods & move to water during droughts
  - DRM value of ruminant livestock & quick turn-over poultry increase as rapid livelihood response post-crop failure due to flood & drought
  - Extensive native poultry & ruminant production less risky & less affected in relying on natural & landscape-based feed
- Extensive livestock may benefit from climate impact
  - Post flood crop residues become more available as wet season feed stuff for ruminants
  - Wet & dry season grazing, improved rangeland & pasture interventions in lowlands can expand working with flood patterns (i.e. in risky areas retired from crops)

CRVA – Extensive Livestock Opportunities

- Extensive livestock interventions increase in importance with climate change
  - Salt lick, urea, fodder legume, tree legume & other feed supplements increase in importance & profit to support increased utilization of crop residues & cut & carry fodder grasses
  - Fodder legume cover & intercrop importance increases to support improved soils, drought tolerance of crops & improve in-situ crop residues as grazed feed
  - Improved upland rangeland, pasture & grazing systems become urgent as catchment management interventions (improved ground cover) to reduce wet season floods, restore dry season flows & assist groundwater recharge

CRVA – Smallholder Risk

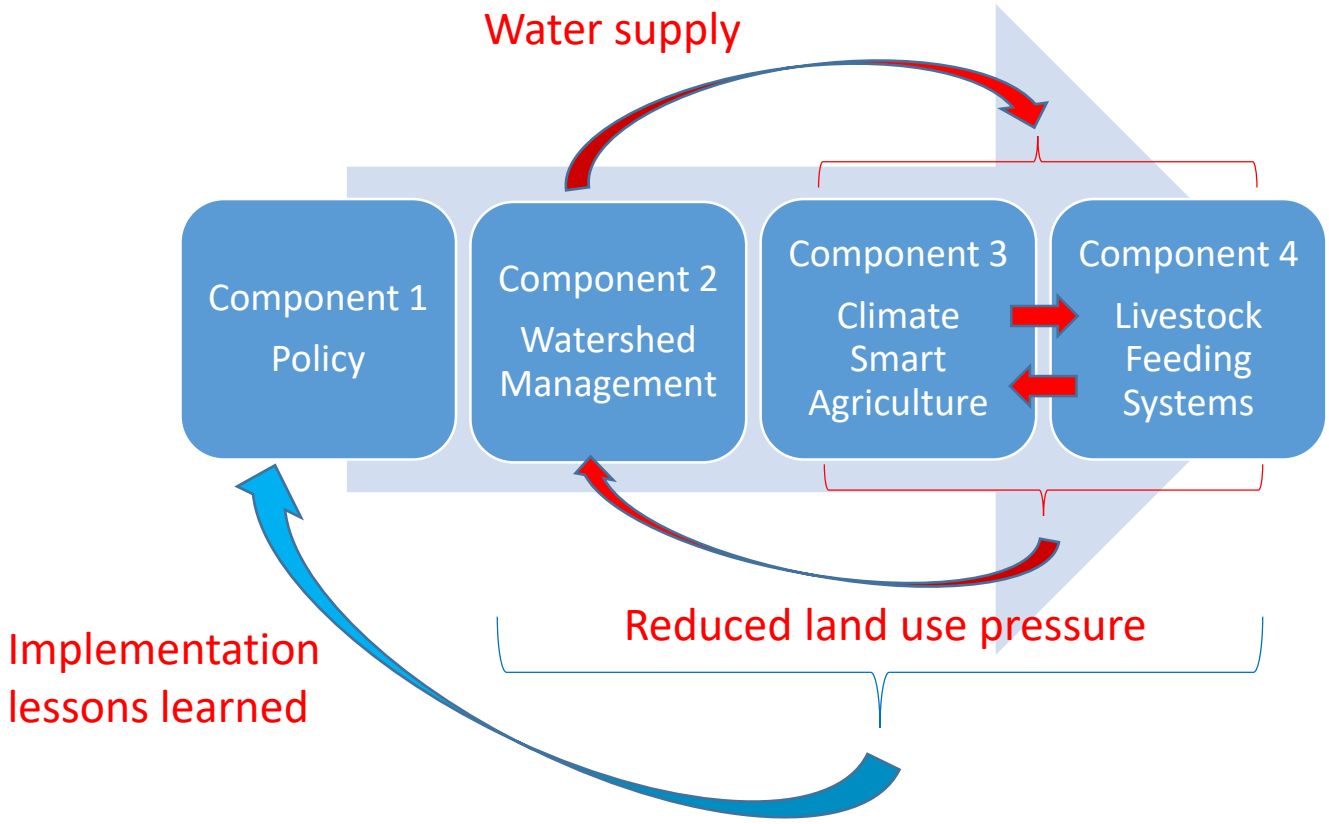
- Rural small holder risk increases relative to private sector, urban, national & global market risks
  - Rural small-holder livelihoods become exposed to greater climate change risk than private sector & urban populations;
  - Cascade of reduced water – food & income – economic - social (distress migration & social protection) security risk appears more imminent with climate change;
  - Small holder poverty, nutrition & hunger has shown deteriorating trend regionally in recent years
  - Integrated landscape – economic management to support SDGs (especially inclusive economy, health, zero poverty & zero hunger) has become more urgent

CRVA – Smallholder Opportunities

- Small holder livestock interventions increase in importance with climate change
  - Livestock sector policy & feed systems can play much larger role in reducing small-holder risk
  - Policy can shift from high production targets to social risk avoidance & keeping animals alive as economic ‘’safety net / insurance’’ in case of climate disaster
  - Livestock strategy can shift towards resilience – less livestock numbers, more balance with landscape carrying capacity & healthier animals to survive climate & disease shocks
  - Improved livestock feeding systems can play an integral role in landscape management to support SDGs overall & promote small holder CCA

Livestock Sector - Landscape Approach

- Watershed management basis of landscape approach
- Livestock feeding systems & component synergy



Thanks