

# Forest & Climate Change: Issues & Options in West Africa

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# Background

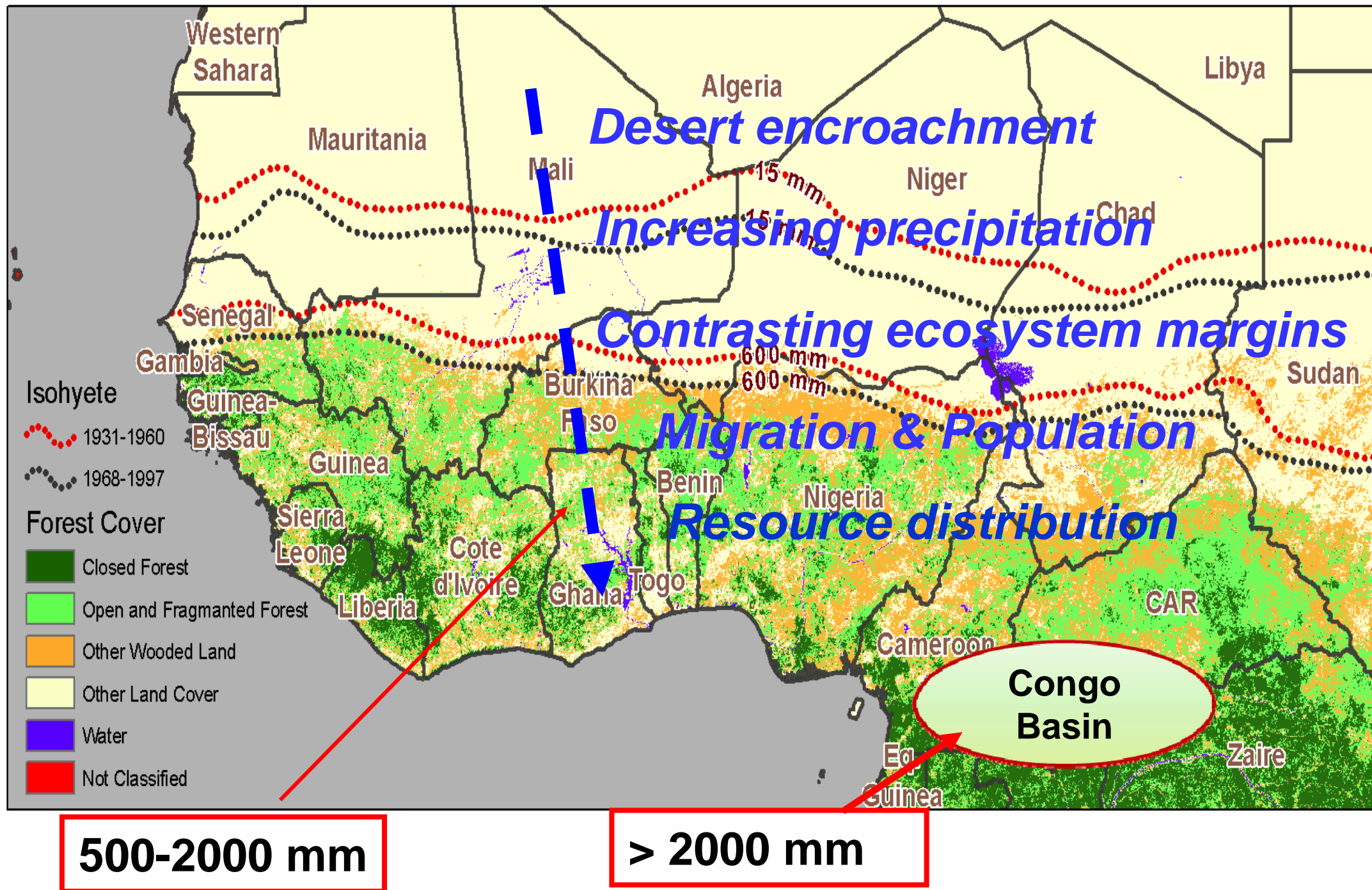
- The vulnerability of West African forest ecosystems to both climatic & non climatic stimuli is unquestionable
- Dependence on natural resources is only increasing
  - for livelihood security
  - National development etc
- Climate impacts on forest will amplify the risks on humans putting the region in jeopardy of other risks
- Autonomous adaptation of forest is insufficient to resist current and projected impacts of CC in WA
- Planned adaptation is the option & should explore every opportunity available & done urgently



# **West African Issues....**



# West African Focus .....



# Climate risks

- Increase in temperature
- Droughts – frequent & dispersed even when less intense
- Irregularities in precipitation
  - Flash floods
  - Crop Failures
- Outbreak of pests & diseases
- Wild fires
- Dust storms
- Wind storms etc

# Potential climate change impacts on forest ecosystems

Level	Pattern of Impact
Cell	Reduction in stomata conductance Increase in photosynthesis Increase in transpiration
Organism	Phenology – changes in physiological cycles e.g. blooming, flowering, fruiting etc Migration Insect emergence (metamorphosis) Reduction cropping seasons
Species	Changes in species distribution & abundance Changes in morphology and reproduction Shift in plant & animal ranges Invasions Extinction
Ecosystem	Changes in species composition & ecosystem structure Changes in ecosystem processes & service provision Decoupling of species interaction e.g. predator-prey <b>Shift in entire ecosystems</b>

(Source: IPCC 2007, Robledo & Maser 2007, FAO 2005)



# What are the issues?

## Finding co-existence

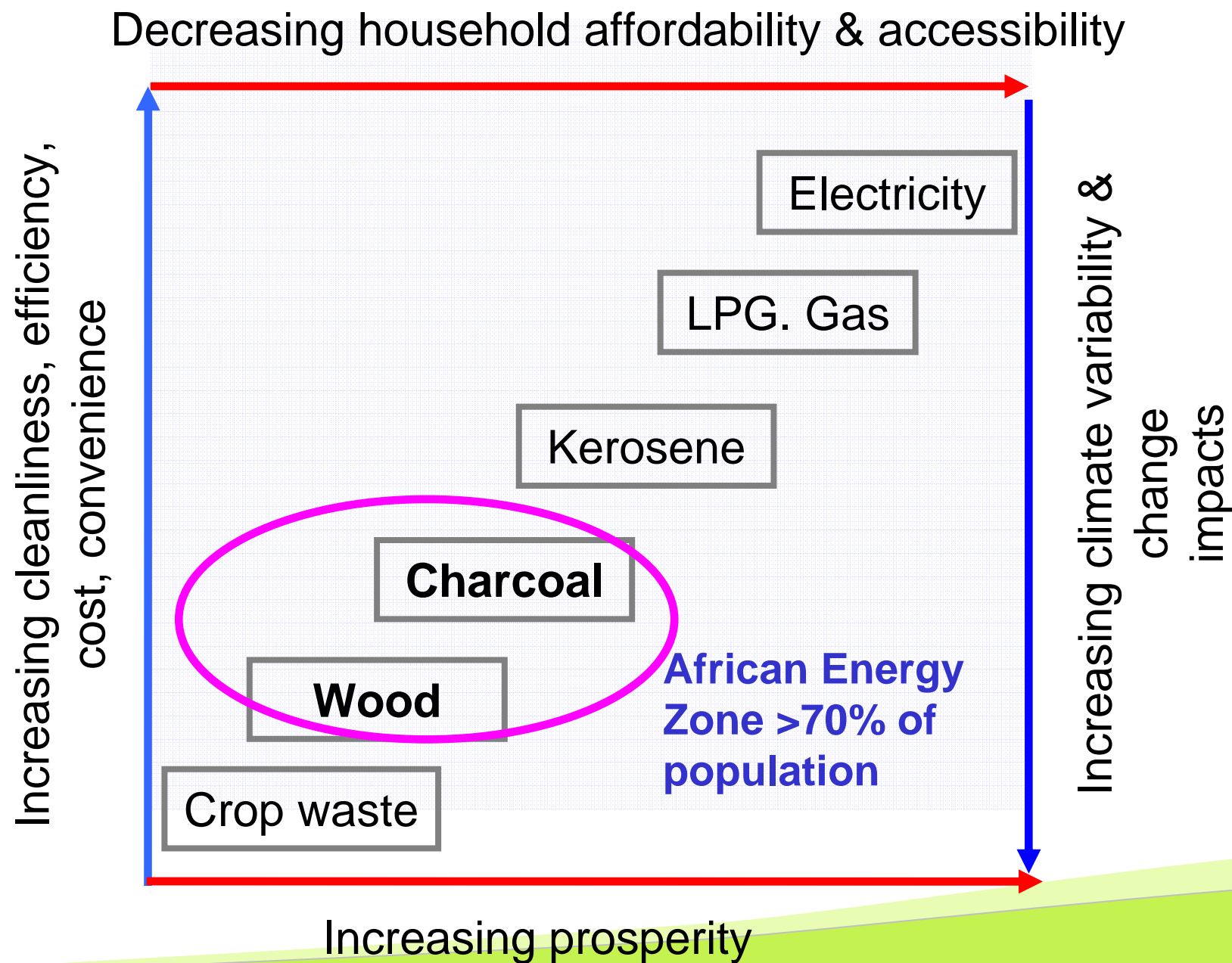
- Concessions & subsistence
- Logging companies & communities
- National reserves & poaching
- Law enforcement & eviction?
- Vulnerability & marginalization



- Livelihood opportunities for
  - indigenous people
  - forest fringe communities
- Social exclusion
- Benefit sharing & equity

# What are the issues?

## Household energy & Climate Change



# What are the Issues?

## Finding adaptation in market systems



# What are the issues?

## Emerging market opportunities for timber & non-timber forest products are stretching forest

- Forests and woodlands account for ~6% of Gross Domestic Product in Africa
- Traditional medicinal plants derived from forests support a **US\$ 100 million** industry in Africa (UNEP 2005)

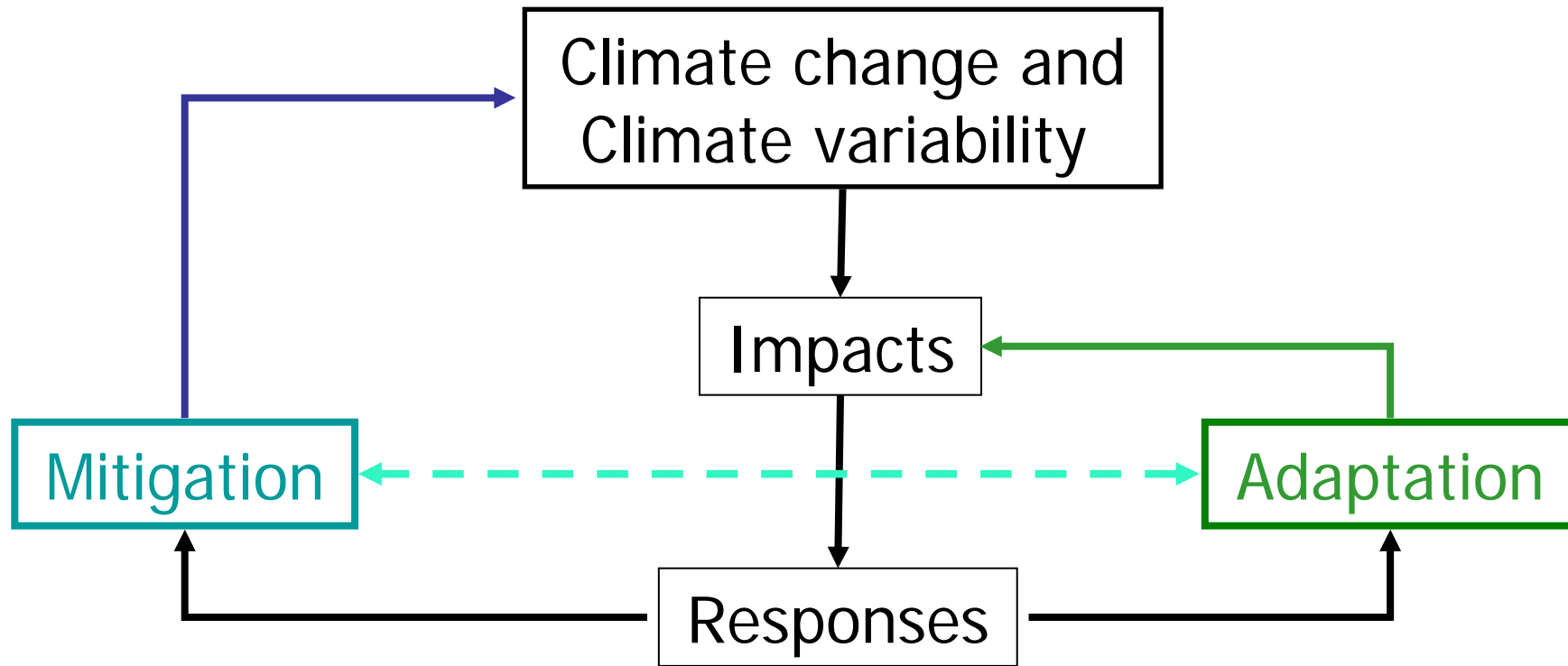


# Response Options.....



# Forest and climate change...

## Addressing mitigation and adaptation in the same framework



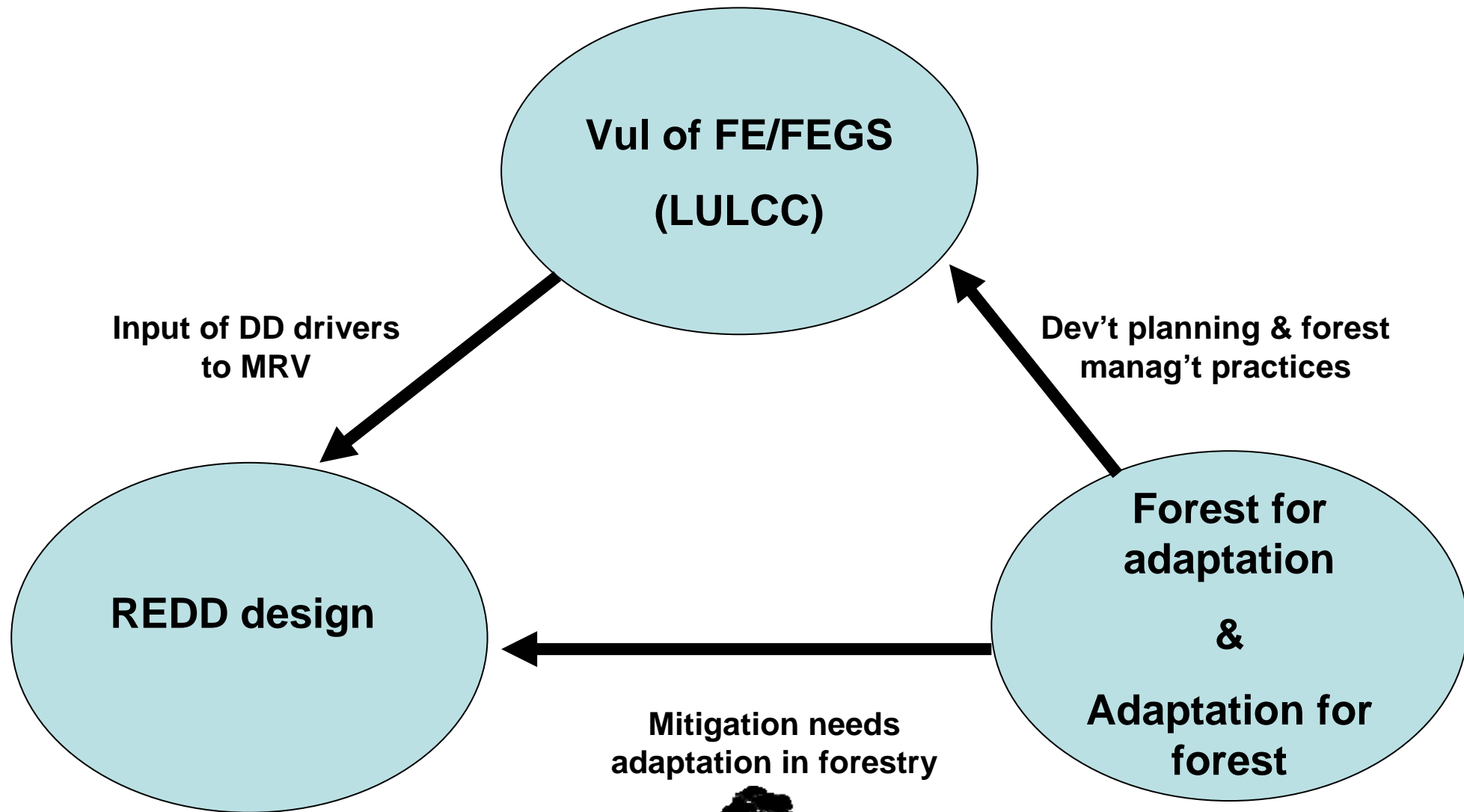
*... maintaining and increasing ecosystem C pools and C sequestration – reducing emissions from biosphere*



*... maintaining and increasing ecosystem resilience – reducing vulnerability*

# Forest and climate change...

## Addressing mitigation and adaptation in the same framework



# Forest as an entry point for adaptation.....

- Safety nets & capital base for communities
- Surrounded by indigenous knowledge
- Regenerative 'green' resource pool
- Cater for gender interest
- Cuts across multiple livelihood sectors for
  - Household &
  - National development
- Important for bilateral & multilateral co-operations
  - Trans-boundary resource
- Safeguard other ecosystems
  - Soil, watersheds, coastal, arid, Urban etc



# Adaptation actions in Forest management in WA...

<b>Gene management</b>	Reassessing conservation and seed banks locations, breeding pest-resistant genotypes, determining adaptability and responses of genotypes will be necessary for the genetic diversity and resilience of tree species to climate change.
<b>Forest protection</b>	Implement forest fire and pest management to reduce disturbance, restore destroyed forest and protect trees against diseases.
<b>Forest regeneration</b>	Use drought tolerant genotypes, use artificial regeneration and control invasive species.
<b>Silvicultural management</b>	Selectively remove poorly adapted trees, reduce rotation period, manage forest density, species composition, and forest structure to control the declining and disturbed stands.
<b>Forest operations</b>	Increase logging from disturbed stands, forest carbon management, increase use of woodfuel from forest, and put in place appropriate policies to ease adaptation actions.
<b>Non-timber resources</b>	Minimise habitat fragmentation, conserve wildlife, maintain primary forest and diversity of functional groups.

Source: Kalame et al 2009



## Using an Ecosystem –base Approach

- Synergies between Adaptation, mitigation & development
- Managing multiple activities
  - Side effects
  - Trade offs
  - Co-benefits
- Balancing multiple interests in
  - Policy
  - governance
  - Sharing risks
- Co-existence



## Matching REDD & Adaptation Benefits -

Potential example from TroFCCA W. Africa

## Prioritization of development sectors for adaptation

### Adaptation Priorities

- Water (Potable)
- NTFP
  - Food (Human & animal)
  - Medicinal purposes
- Bioenergy

### REDD Contribution

- Forest Protection
  - watersheds, catchments
  - Streams & river channels
- Forest Conservation
  - Weak compatibility except changes in baseline
  - Biodiversity
- Incompatible
  - (except limited household use included in baseline)

# Conclusion

- Forest is a **resource base** for adaptation and mitigation yet vulnerable to changes
- **Ecosystem approach** may be a promising option to deal with FES and CC issues
- As a forest-based activity, REDD should emphasize **adaptation** through synergies between mitigation & adaptation
- Stakeholders **participation** & **prioritization** may support synergies and formulated policies
- Policies and resources governance should be **flexible** taking into account different scales



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# Thank you

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