EPIC: Scenarios to guide CSA planning

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Outline (23/05/13)

- Overview of the project
- Introductions
- Scenarios theory
- Scenarios in CCAFS

Coffee break

- Exercise: scenarios in CSA focus countries

Lunch break

- Discussion: scenarios development and use (starting with SEA example)

Including coffee break

Outline (24/05/13)

- SEA/Vietnam: roles/timing/participants/linking to policy (continuing from 23/05)
- Zambia: roles/timing/participants/linking to policy
- Malawi: roles/timing/participants/linking to policy

Overview: goals

- To make CSA research **useful** for and **responsive** to policy
- Policy engagement through multi-stakeholder **scenarios**: environmental and socio-economic change at multiple levels
- Relevant stakeholders to discuss **biggest drivers of change** for food security, agriculture and climate change in each country
- Questions for **policy simulations** for models/econometric analysis
- **Investment plans** for climate change adaptation and mitigation tested to be robust under socio-economic and climate futures
- Develop links between **national** level and **global/UNFCCC**
- **Malawi, Zambia** and **Viet Nam**

Overview: steps

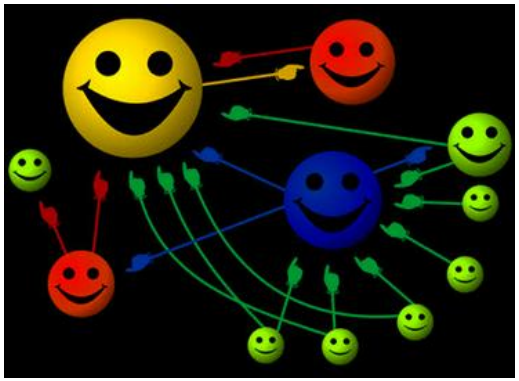
- Institutional and policy analysis
- Stakeholder identification
- Developing socio-economic scenarios at regional/national level
- Provide inputs for quantification of scenarios
- Using scenarios for policy planning through back-casting
- Investment plans
- Linking to UNFCCC
- Two similar types of processes: Zambia/Malawi and South East Asia/Vietnam

This workshop

- Getting a common understanding of the various steps involved in scenarios development and use in policy engagement in the CSA project
- Getting to know those involved and what the key roles are
- Planning specifics for the three focus countries

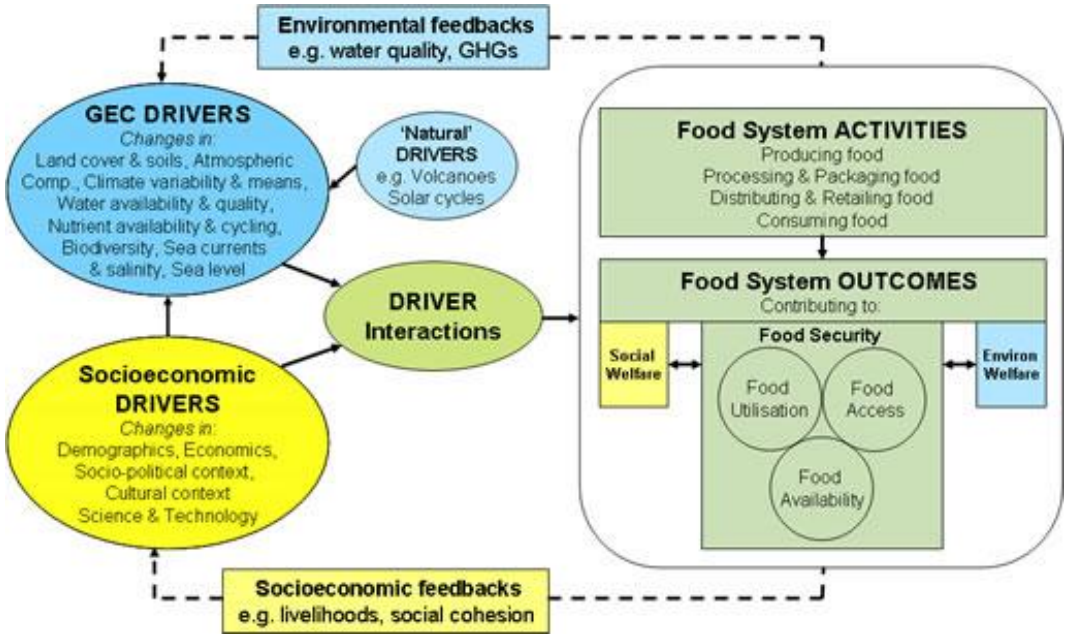
Introductions

- **Introduce** yourself, your background and your role in this project
- Do you have any **experience** with scenarios?
- What are your **expectations** of our meeting?



Scenarios: context

- Agriculture, food security framed by interacting, highly **uncertain, interacting stressors** across levels
- Diverse and changing **actors**
- Scope for forecasting is **limited**
- Decision-makers have to engage uncertainties **strategically**
- Need for **shared** action



Scenarios

- Scenarios are multiple **plausible** futures
- **Military** background
- **Business** background
- **What-if** stories about the future, to be told in words, numbers, images…
- Scenarios explore crucial future uncertainties – **context**!
- **Not** predictions - complex systems thinking

Multi-stakeholder scenarios

- **Examine** assumptions – “shadow scenario”
- Overcome **bias** and planning for the past, **stretch** and **focus** thinking
- Elicit and connect stakeholder **perspectives**
- Social learning
- Examine **roles** in complex systems
- **Test** and **guide** decisions and policies
- Engaging with the future to **re-organize** present structures
- *Schoemaker, 1993*

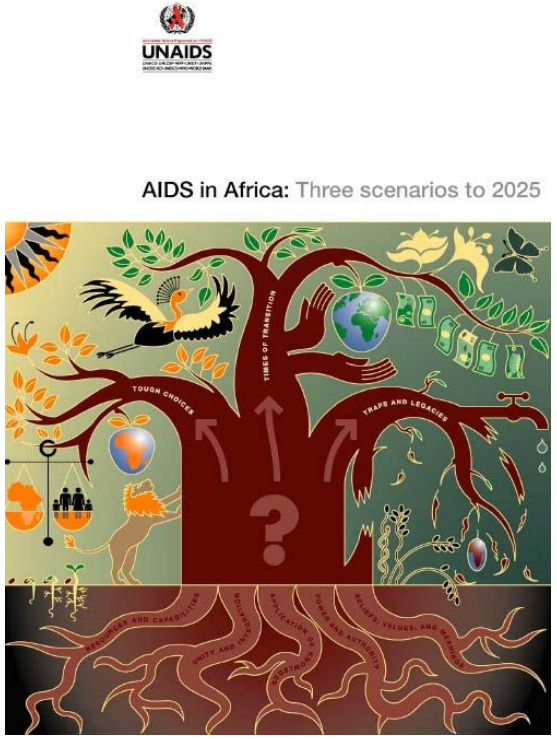


Table 1. Techniques to enhance strategic thinking

	Systematic thinking tool?	Internal communication device?	Identifier of strategic issues?	Problem scope?	Uncertainty bounding?
1. Lateral thinking and brainstorming (Osborn, 1953; de Bono, 1973)	No	No	Somewhat	Broad	No
2. Synectics and morphological analysis (Gordon, 1961; Zwicky, 1969)	Medium	Perhaps	Perhaps	Limited	No
3. Delphi method (Linstone and Turoff, 1975; Wedley *et al.*, 1978)	High	Yes	No	Narrow	Yes
4. Dialectic reasoning (Mitroff and Emshoff, 1979; Schwenk and Cosier, 1980)	Perhaps	Perhaps	Yes	Broad	Perhaps
5. Multiple scenarios (Wack, 1985a, b; Huss, 1988)	Medium	Yes	Yes	Broad	Yes
6. Requisite decision modeling (Berkeley and Humphreys, 1982; Phillips, 1982)	High	Yes	Perhaps	Narrow	Perhaps
7. Dynamic systems analysis (Forrester, 1961; Sterman, 1988; Senge, 1990)	High	Yes	Perhaps	Medium	Perhaps

Schoemaker, 1993

Scenarios: why useful

- Work with future uncertainties in **concrete** and engaging manner (*Vervoort et al. 2012*)
- Identify and frame contextual **challenges**
- Identify institutional **vulnerabilities**
- Test and develop **policies**
- Test **innovations**
- Build **networks**
- Public **engagement** and awareness raising

Scenarios: challenges

- Steep learning curve
- Implications for organizations etc.
- How to get from scenarios to actions
- Bias for positive scenarios
- Plausibility and consistency
- Credibility of source, credibility of content, credibility of channel
- Salience
- Legitimacy

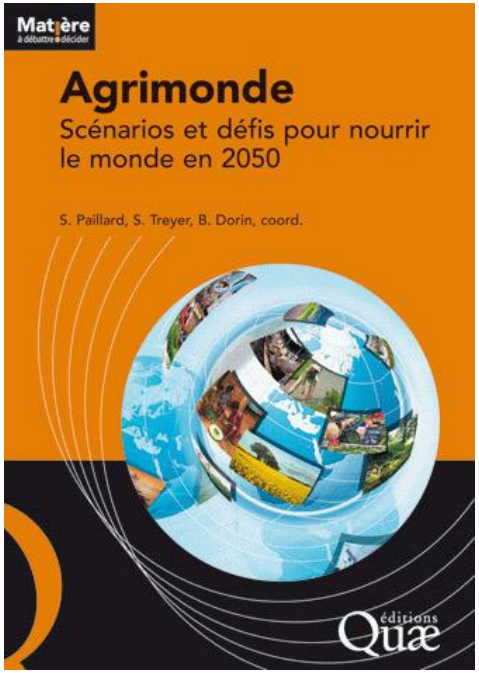
Chaudhury et al. 2012, Schoemaker 1993

Scenarios from the adaptation perspective

- Helps address the question: adaptation to what?
- Integrate multiple interacting stressors: need to focus on variables together
- Timeframes play a role in determining successful adaptation
- Context examined at multiple levels
- Helps generate adaptation pathways

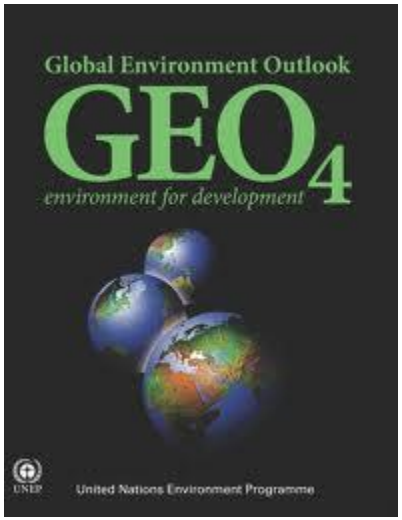
Scenarios in agriculture and food security

- Many **similar** traits and challenges to GEC
- More **forecasting**
- High **diversity** in processes
- 50% **sense**-making; 50% **decision**-making
- Direct policy impacts primarily when **commissioned** by policy makers
- SCAR (*Mathijs et al. 2012*): EU scenarios primarily in **production** narrative; some in **consumption** narrative; few in **food systems** narrative
- *GFAR, Bourgeois et al. 2013*



Scenarios in global environmental change

- **Not** forecasts
- **Deterministic** scenarios
- Geared toward broad, **diffuse** audiences
- Dominated by **biophysical** science and modelling, even in describing human dimensions
- **Very little** stakeholder participation at global level
- Focus on the **product**
- **Top-down** links to other levels (*Zurek and Henrichs 2007*)
- *Van Vuuren et al. 2012*



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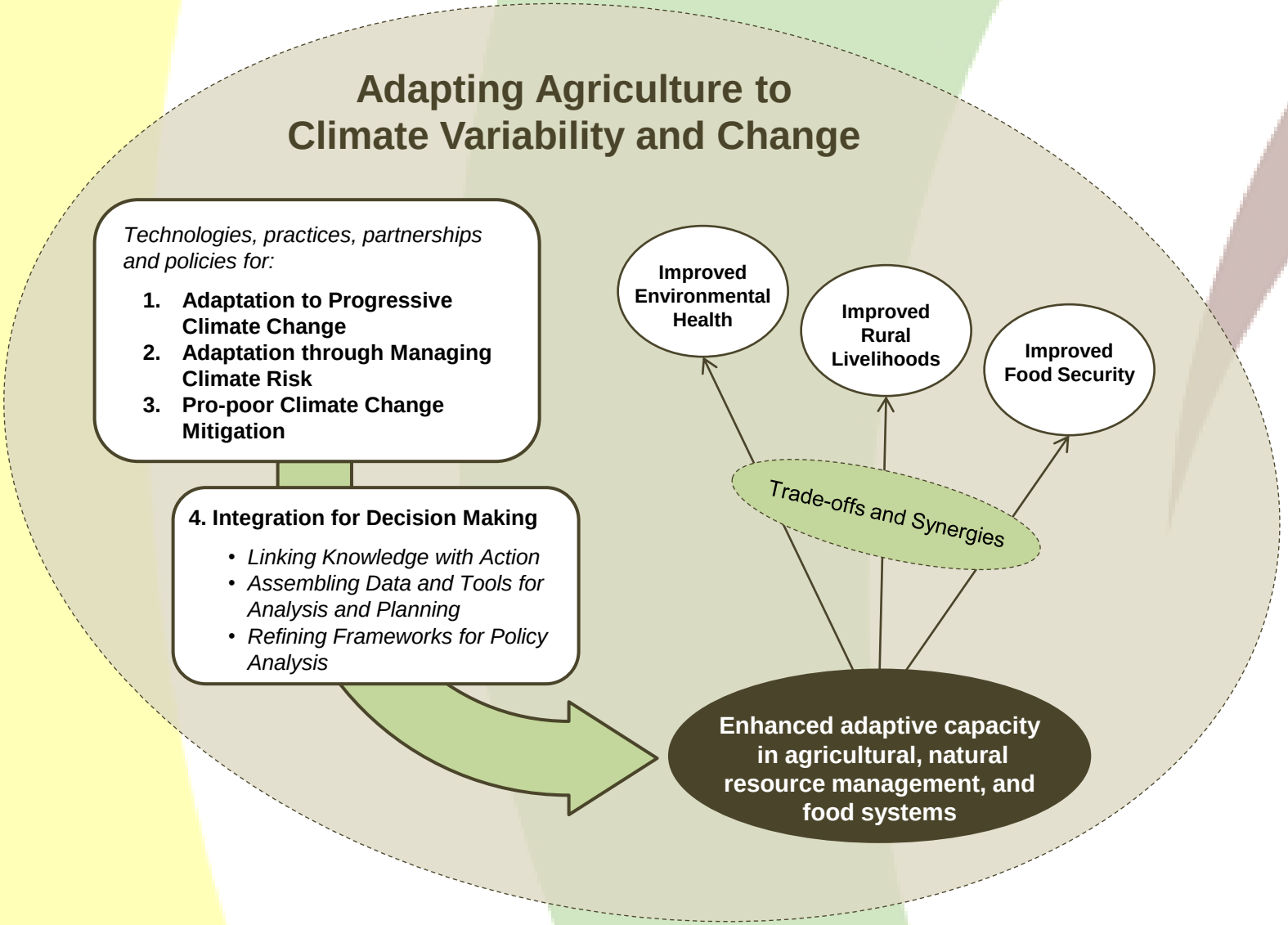
The CCAFS Framework



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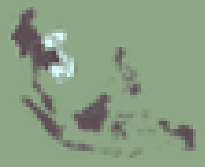
East Africa


West Africa


Latin America


Southeast Asia


South Asia

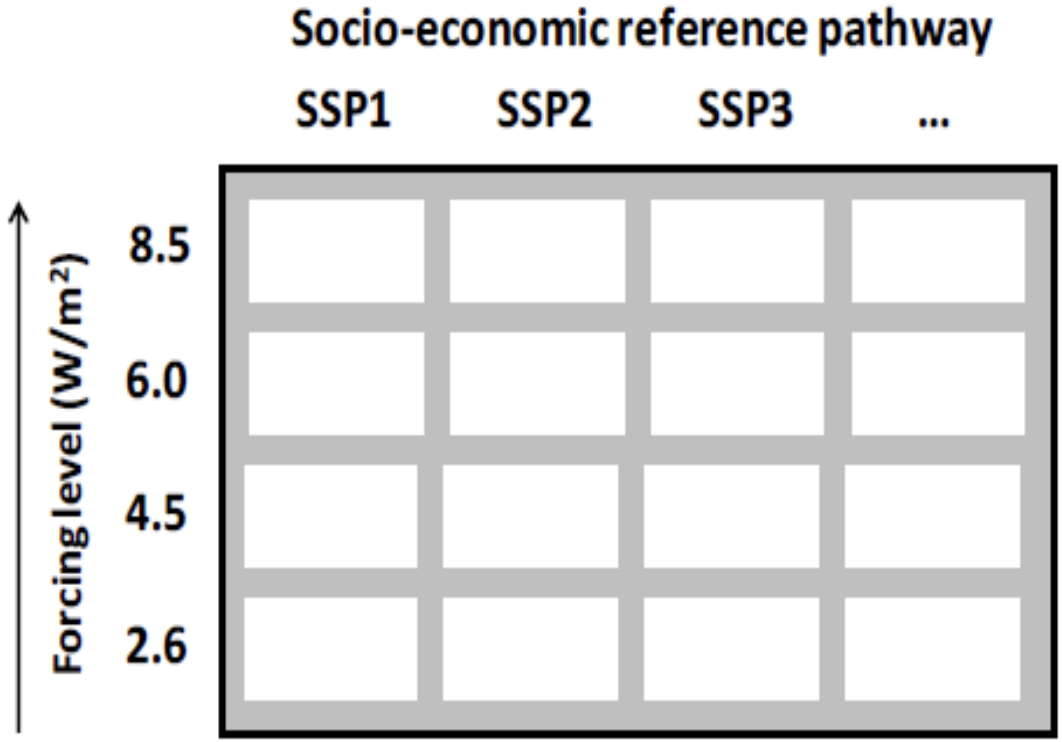
CCAFS scenarios: objectives

- Public decision-makers using combined regional socio-economic/climate scenarios in climate change, agriculture and/or food security decision-making processes.
- At the national level and at the regional level, e.g. EAC, ECOWAS
- Scenarios used by private decision-makers to target investments, research and development areas.
- Strong focus on partnerships: FAO
- In East and West Africa, South Asia, South East Asia and Latin America

CCAFS: scenarios development

- Socio-economic scenarios developed to investigate **key socio-economic uncertainties**
- With policy, private sector, civil society, academia, media
- Socio-economic scenarios are **quantified** with IMPACT (IFPRI) and GLOBIOM (IIASA): production, trade and demand for commodities, land use change, emissions
- These socio-economic scenarios are combined with **climate** scenarios

Developing scenarios



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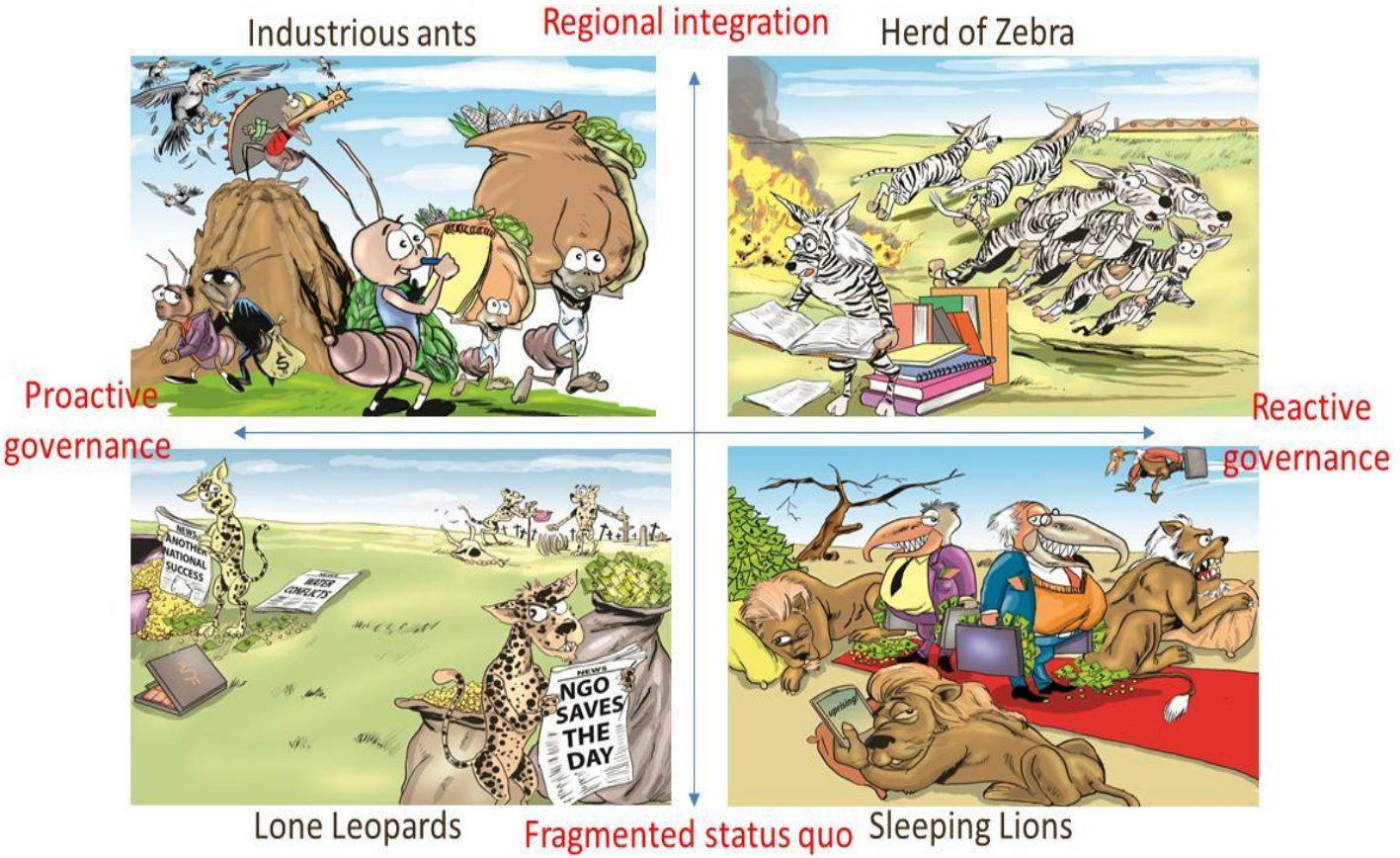
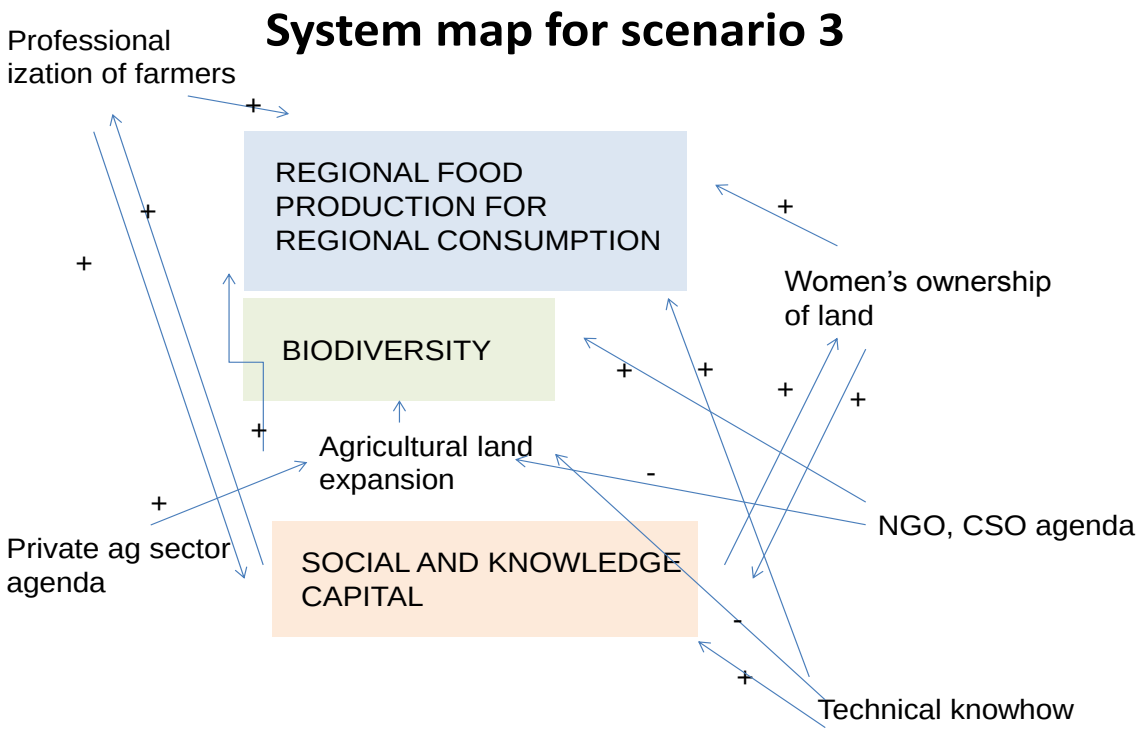
Developing scenarios



System maps


System map for scenario 3
Professional ization of farmers
REGIONAL FOOD PRODUCTION FOR REGIONAL CONSUMPTION
Women's ownership of land
BIODIVERSITY
Agricultural land expansion
NGO, CSO agenda
Private ag sector agenda
SOCIAL AND KNOWLEDGE CAPITAL
Technical knowhow

Semi-quantitative and quantitative assessments

Change 2013-2030	Change 2030-2050	Reasons	Percentage change 2013-2030	Percentage change 2030-2050	Confidence	Agreement	Expertise needed?

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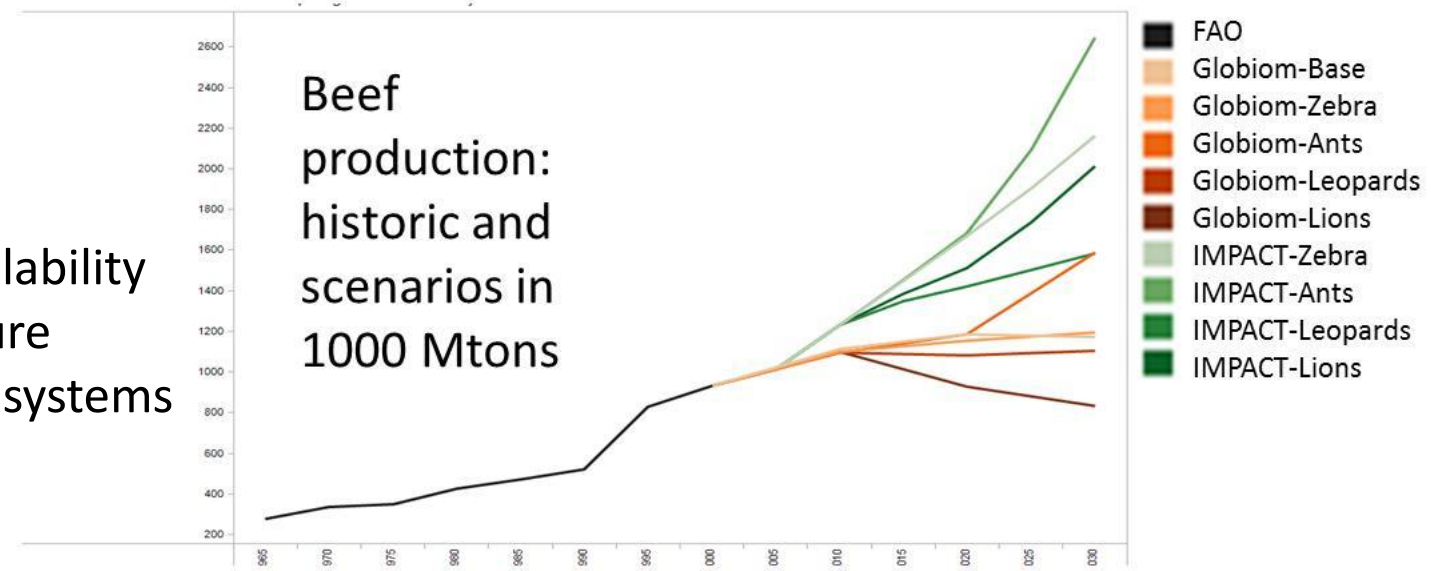
Results across scenarios

- GDP
- Population
- Yields
- Calorie availability
- Infrastructure
- Production systems
- Land cover
- Emissions

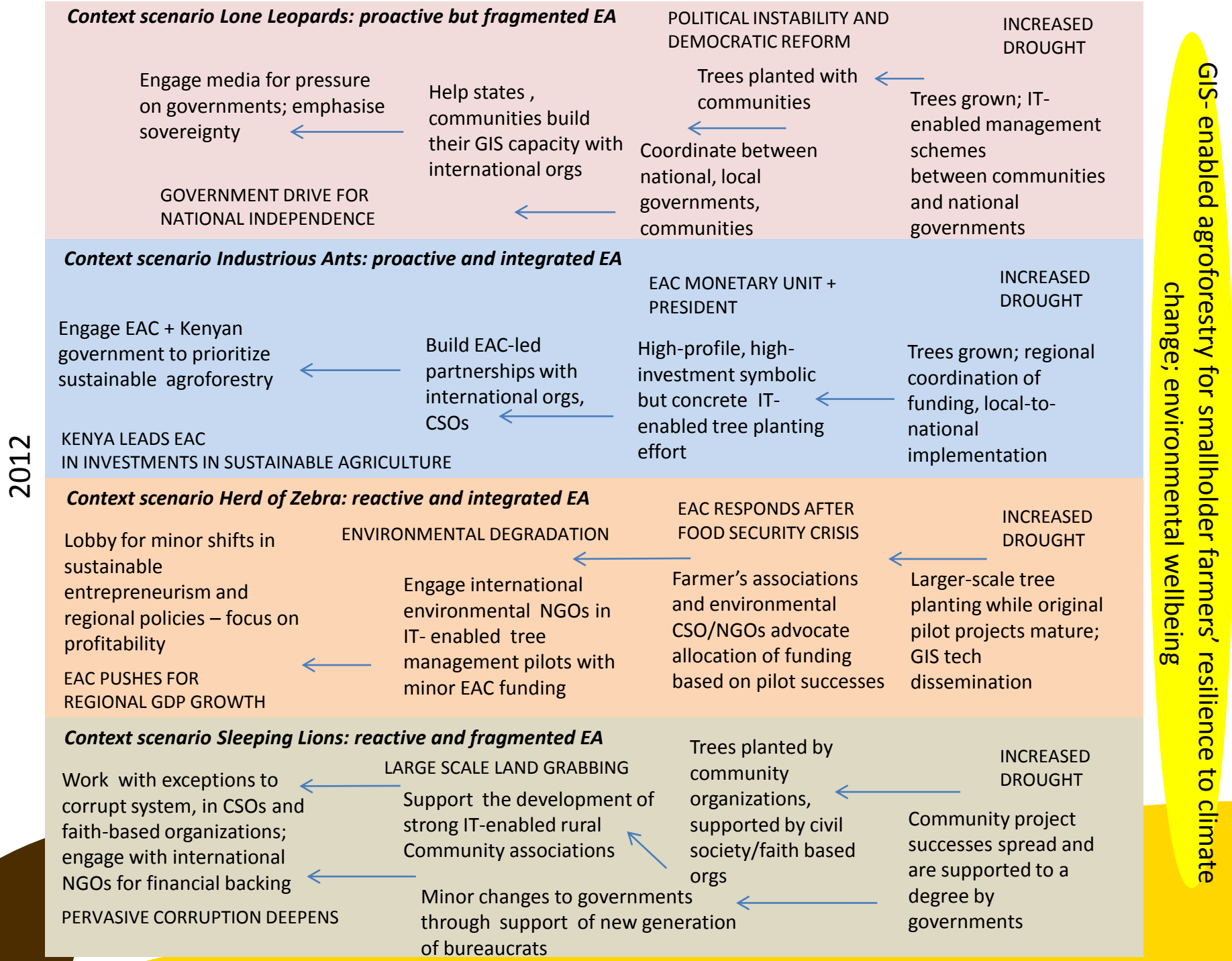


Results across scenarios

- Global market pressures and changing populations = difficult to **improve** upon the current level of food security
- Growing populations, urbanisation **drive demand** for many food products
- Foreign **investments** can damage/transform food security in East Africa
- Regional policies **prioritise** food security/livelihoods over environmental health
- Pastoralists increasingly move to **other sources** of income
- Increased **mixed and intensive** agriculture
- Demand **outstrips** production due to increasing populations and GDP

Using scenarios to guide policy and action

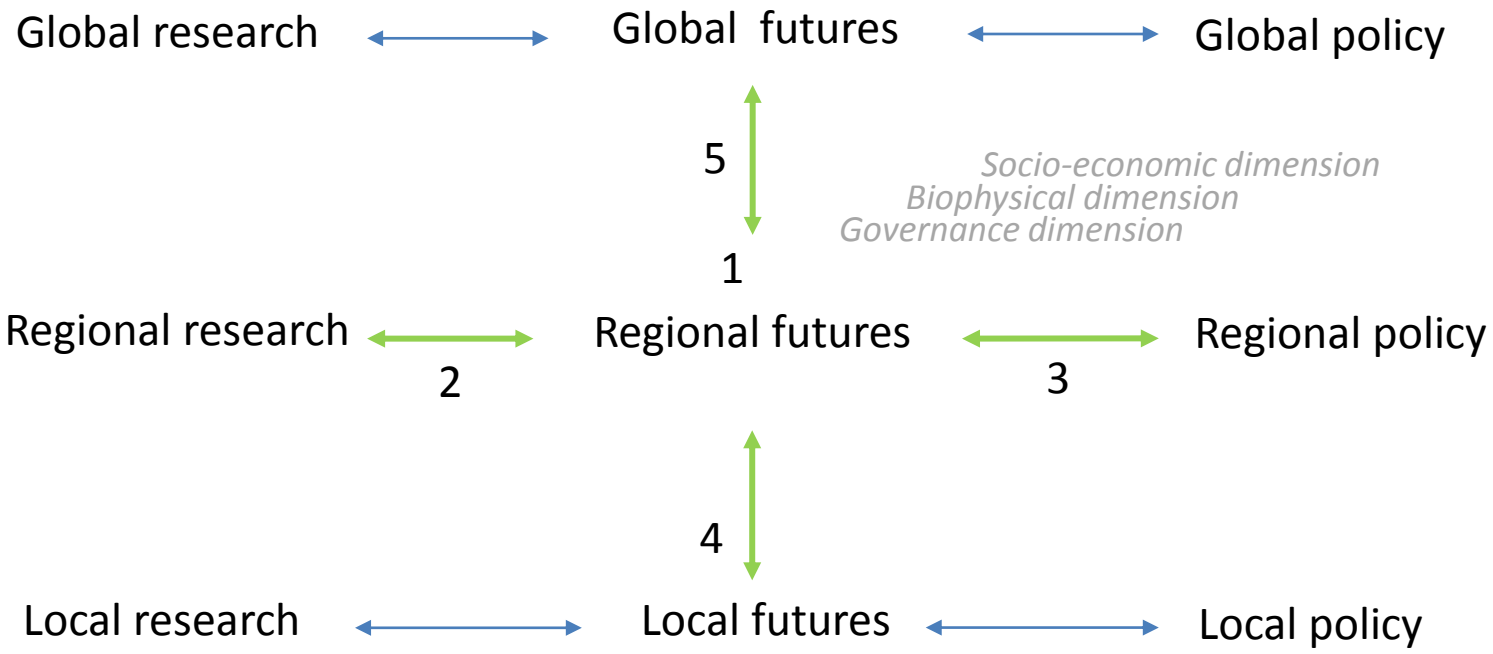
- In East Africa, CCAFS organized **planning workshops** for non-state actors (mostly civil society, NGOs and some private sector) and policy advisors
- Goal: to set common goals, and through backward planning or “back-casting”, **develop pathways** toward these goals
- Plans developed in the context of different scenarios yielded **different pathways**
- Some plans feasible under **all** scenarios, under **specific** scenarios


Context scenario Lone Leopards: proactive but fragmented EA
POLITICAL INSTABILITY AND DEMOCRATIC REFORM
INCREASED DROUGHT
Engage media for pressure on governments; emphasise sovereignty
Help states , communities build their GIS capacity with international orgs
Trees planted with communities
Trees grown; IT-enabled management schemes between communities and national governments
Coordinate between national, local governments, communities
GOVERNMENT DRIVE FOR NATIONAL INDEPENDENCE
Context scenario Industrious Ants: proactive and integrated EA
EAC MONETARY UNIT + PRESIDENT
INCREASED DROUGHT
Engage EAC + Kenyan government to prioritize sustainable agroforestry
Build EAC-led partnerships with international orgs, CSOs
High-profile, high-investment symbolic but concrete IT-enabled tree planting effort
Trees grown; regional coordination of funding, local-to-national implementation
KENYA LEADS EAC IN INVESTMENTS IN SUSTAINABLE AGRICULTURE
Context scenario Herd of Zebra: reactive and integrated EA
EAC RESPONDS AFTER FOOD SECURITY CRISIS
INCREASED DROUGHT
ENVIRONMENTAL DEGRADATION
Lobby for minor shifts in sustainable entrepreneurism and regional policies – focus on profitability
Engage international environmental NGOs in IT- enabled tree management pilots with minor EAC funding
Farmer's associations and environmental CSO/NGOs advocate allocation of funding based on pilot successes
Larger-scale tree planting while original pilot projects mature; GIS tech dissemination
EAC PUSHES FOR REGIONAL GDP GROWTH
Context scenario Sleeping Lions: reactive and fragmented EA
LARGE SCALE LAND GRABBING
Trees planted by community organizations, supported by civil society/faith based orgs
INCREASED DROUGHT
Work with exceptions to corrupt system, in CSOs and faith-based organizations; engage with international NGOs for financial backing
Support the development of strong IT-enabled rural Community associations
Community project successes spread and are supported to a degree by governments
Minor changes to governments through support of new generation of bureaucrats
PERVASIVE CORRUPTION DEEPENS
2012
2030
GIS- enabled agroforestry for smallholder farmers' resilience to climate change; environmental wellbeing

Impact pathways: continual engagement

1. Institutional mapping
2. Policy analysis
3. Using scenarios for back-casting
4. Analysis of vulnerabilities
5. Coming to proposals
6. MOUs
7. Facilitating implementation of proposals
8. Building networks
9. Embedding the work long-term through independent platform
10. Downscaling and up-scaling

Scenarios as a tool for integration



Decision makers' feedback

- Took an integrated **systems perspective** on the future of East Africa.
- Got a better understanding of future challenges for food security, livelihoods and environments and how to **design strategies** to address these challenges, in spite of uncertainty
- Learn about new **regional linkages** and find out what is being done in other countries – and recognise the need for more **interaction**
- See the need for **collaboration** between state and non-state actors facilitated by regional bodies.

Policy proposals

- Changing the role of the **EAFF** in regional policy
- Setting up a **regional strategic futures unit** for the EAFF, the EAC and other regional bodies
- Knowledge **exchange links** between government agricultural, environmental and planning ministries and between governments
- **Agroforestry** scheme to be run jointly by the agriculture ministries, the environmental ministries, the private sector and CCAFS.
- EAC to organise a regional **ombudperson** to help ensure more transparent institutions
- Linking existing **Early Warning Systems** for food security to **regional food reserve planning**

Video

WATCH: How scenarios are developed with regional partners

Scenarios exercise

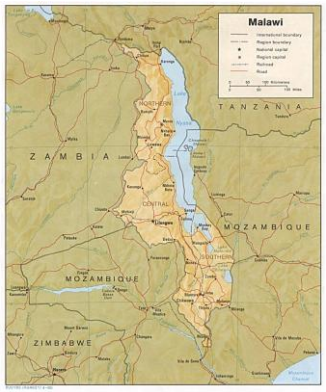
1. Split up in three breakout groups focusing on the three countries

→ **Use policy analysis documents**

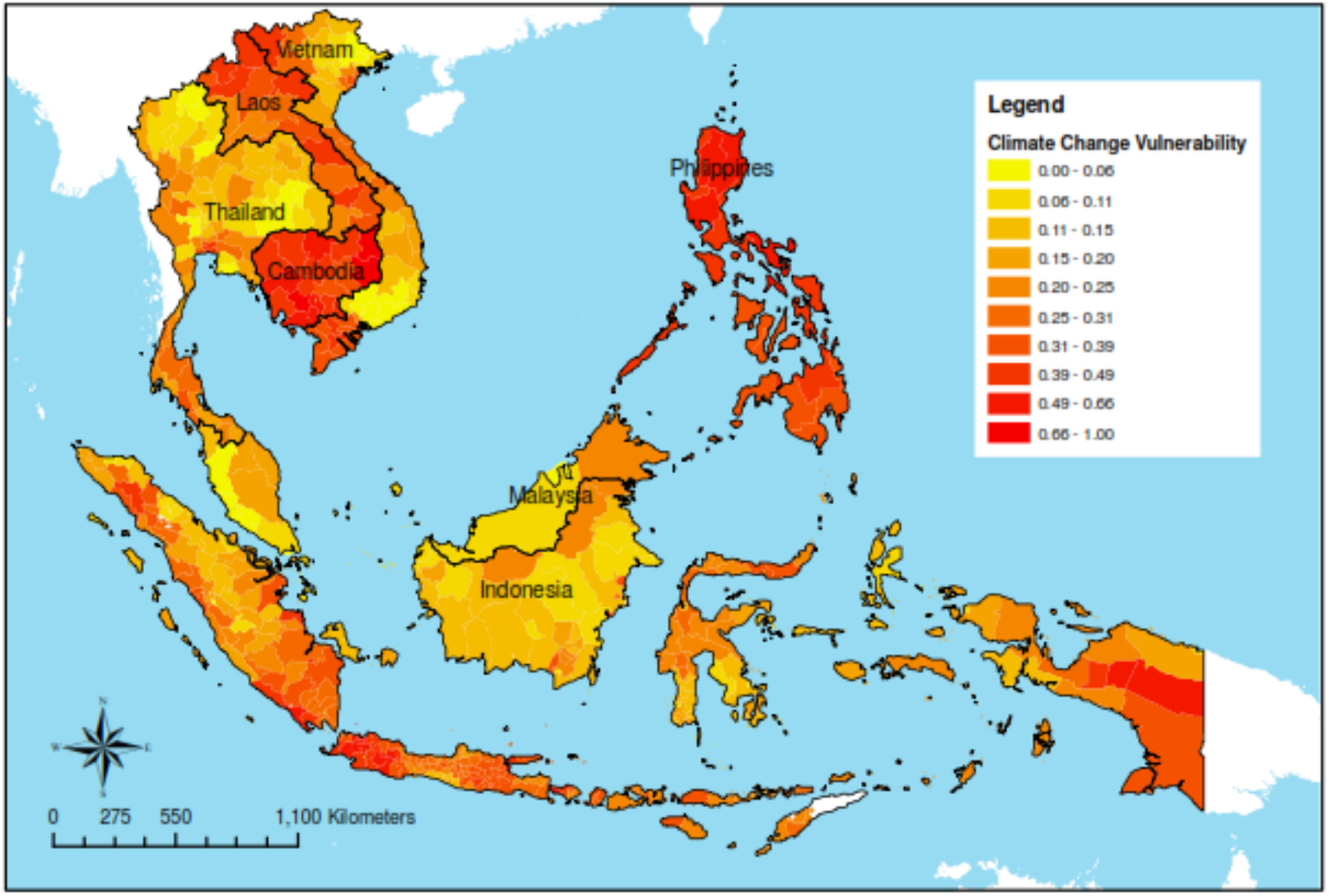
1. Determine the time frame, the scope, and the key decision variables
2. Which stakeholders and actors are important for this scope, time frame, decision variables?
3. Which drivers are the most relevant? Make a top ten list.
4. Which drivers are to be considered relatively certain?
5. Which drivers are most uncertain?
6. What are key interactions between these drivers?
7. Combine top uncertain, relevant drivers
8. Are the resulting scenarios a. plausible? b. relevant for decision makers?
9. Describe directions of change for key decision variables

Scenarios exercise: discussion

- Each group briefly presents their scenarios
- What are your reflections on the scenarios content?
- What are your reflections on the scenarios process?
- What are the implications for the planned process in each country?



South East Asia/Viet Nam context



South East Asia/Viet Nam context

- High exposure to Climate impacts, the region *" will likely experience an increase in the occurrence of extreme weather events, such as heat waves and flash floods, as well as 10-20% increase in tropical storms/cyclones intensities. Sea-Level rise should also be greater than average in the region."*(Cruz et al.2007)

SEA

- This region is highly dependent on the Mekong for the food security of those three countries with Thailand it shares the lower stretches of the 4,000-km of the Mekong.
- The river provides up to 80 percent of the animal protein consumed in Cambodia and sediment and changes to river flow threaten the Mekong Delta, which contributes half of Vietnam's agricultural GDP.

Vietnam

- Vietnam together with Bangladesh is the country at the highest risk in Asia- Pacific (half of the population living in low elevation coastal areas).
- Highly dependent to agriculture, half of the country's agriculture area would face inundation with a 2meter rise in sea level (Warner et al. 2009)

Vietnam

- Vietnam's National Climate Change Strategy states that between 2001 and 2010, damage caused by weather-related disasters has led to 9,500 dead and missing people and a loss of around 1.5% of GDP per year.
- Vietnam is a highly centralized state(state of law):

- The National Climate Change Strategy/2011 – The law sets a number of targets for the country to hit from now until 2050.

Vietnam

- National REDD+ action
- Law on Forest Protection and Development/2010
- National Energy Development Strategy of Vietnam 2020-2050/2007 – By 2050, nuclear electricity will account for about 15–20% of total commercial energy consumption of the whole country.
- Mainly on Mitigation and focusing on energy, few legal steps on adaptation (>Resettlement plan).

Today

- Summary of yesterday: reviewing progress, some concepts

Summary of yesterday

- Discussed scenarios theory
- Discussed CCAFS scenarios process as an example that is close to CSA
- Outlined CSA scenarios steps
- Developed test scenarios for all three focus countries
- Discussed planning for South East Asia/Vietnam to start discussing concrete features of the CSA project

Scenarios theory recap

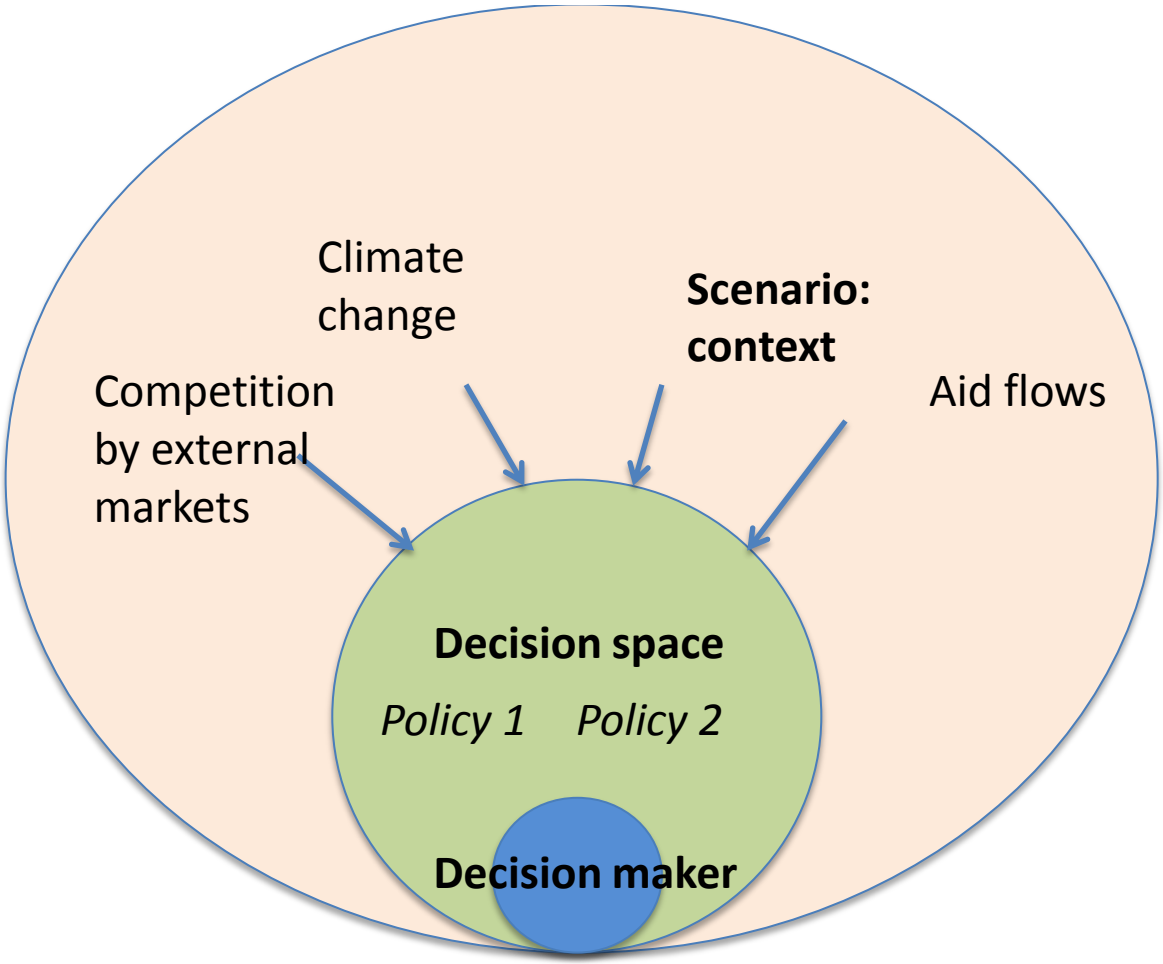
- Tool for systemic thinking, internal communication, identifying strategic issues, setting scope, bounding uncertainty
- Two types of credibility: thorough and informed analysis (quant) and linked to stakeholder realities (qual)
- Creates stakeholder co-ownership by co-framing
- Process with potential to engage

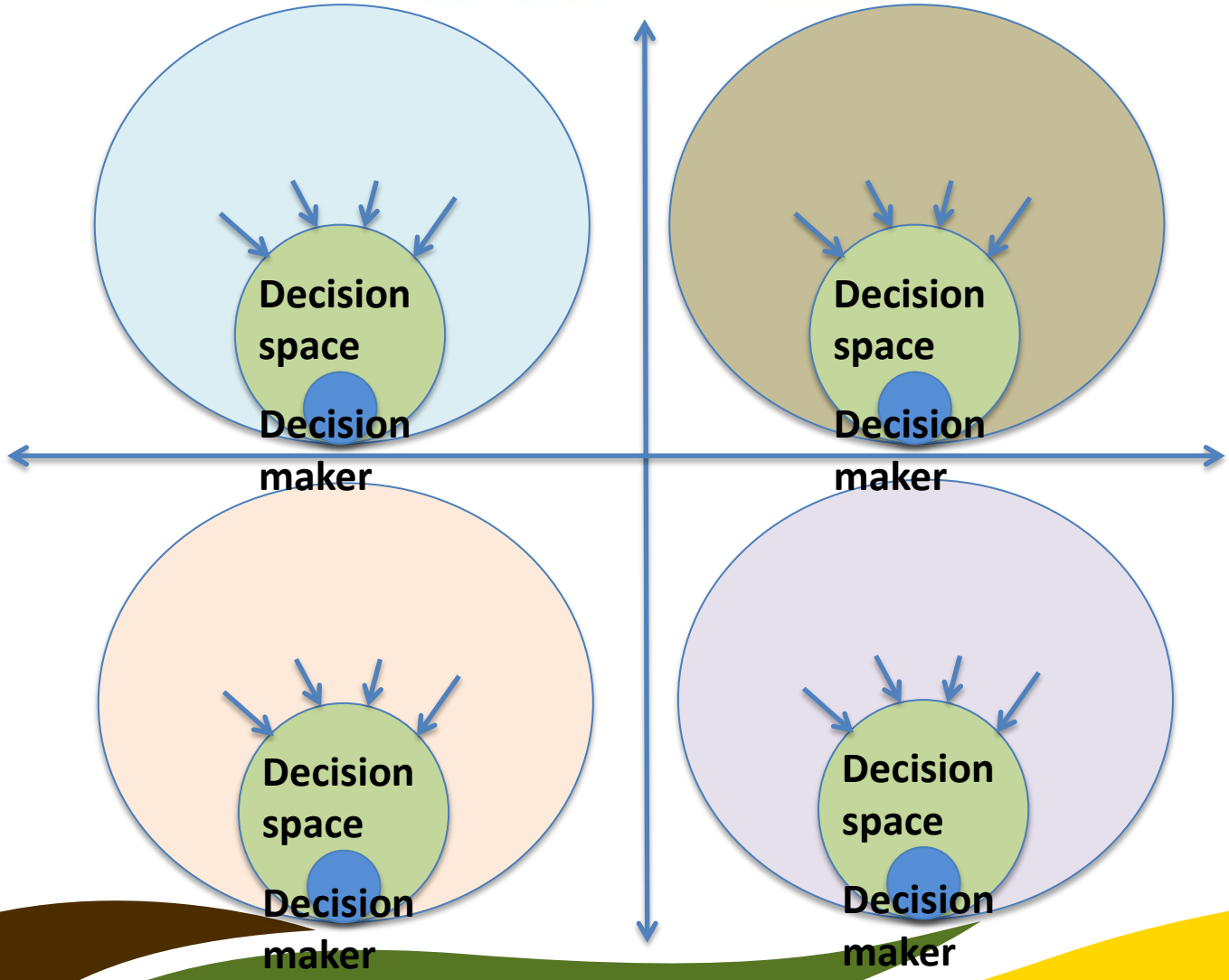
Challenges

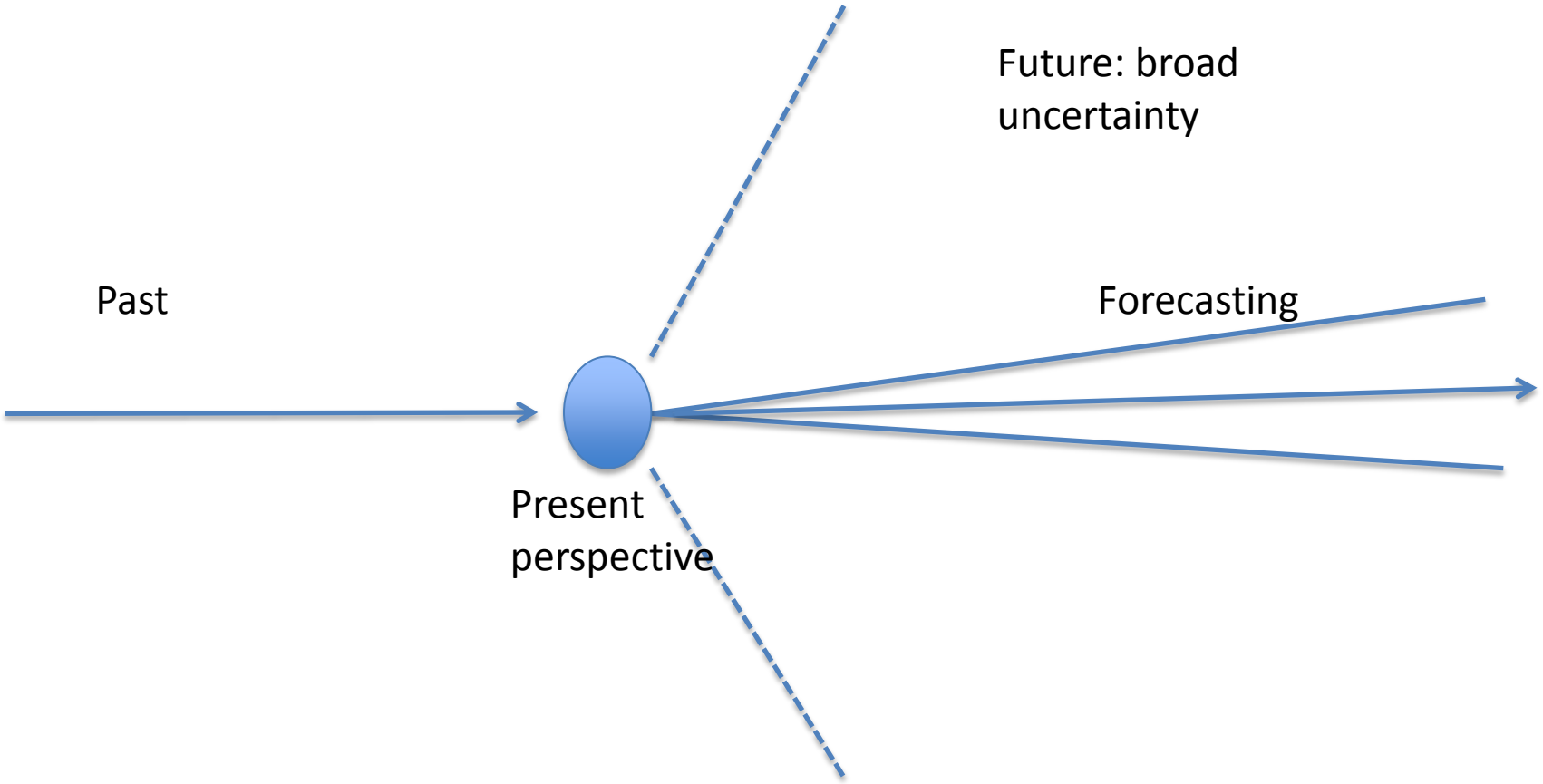
- Learning curve
- Distinction between decision space (who is the user) and context (scenarios)
- Normative versus explorative: scenarios are about what could happen, not what we want to achieve
- Likelihood and plausibility
- How to get from scenarios to recommendations, actions

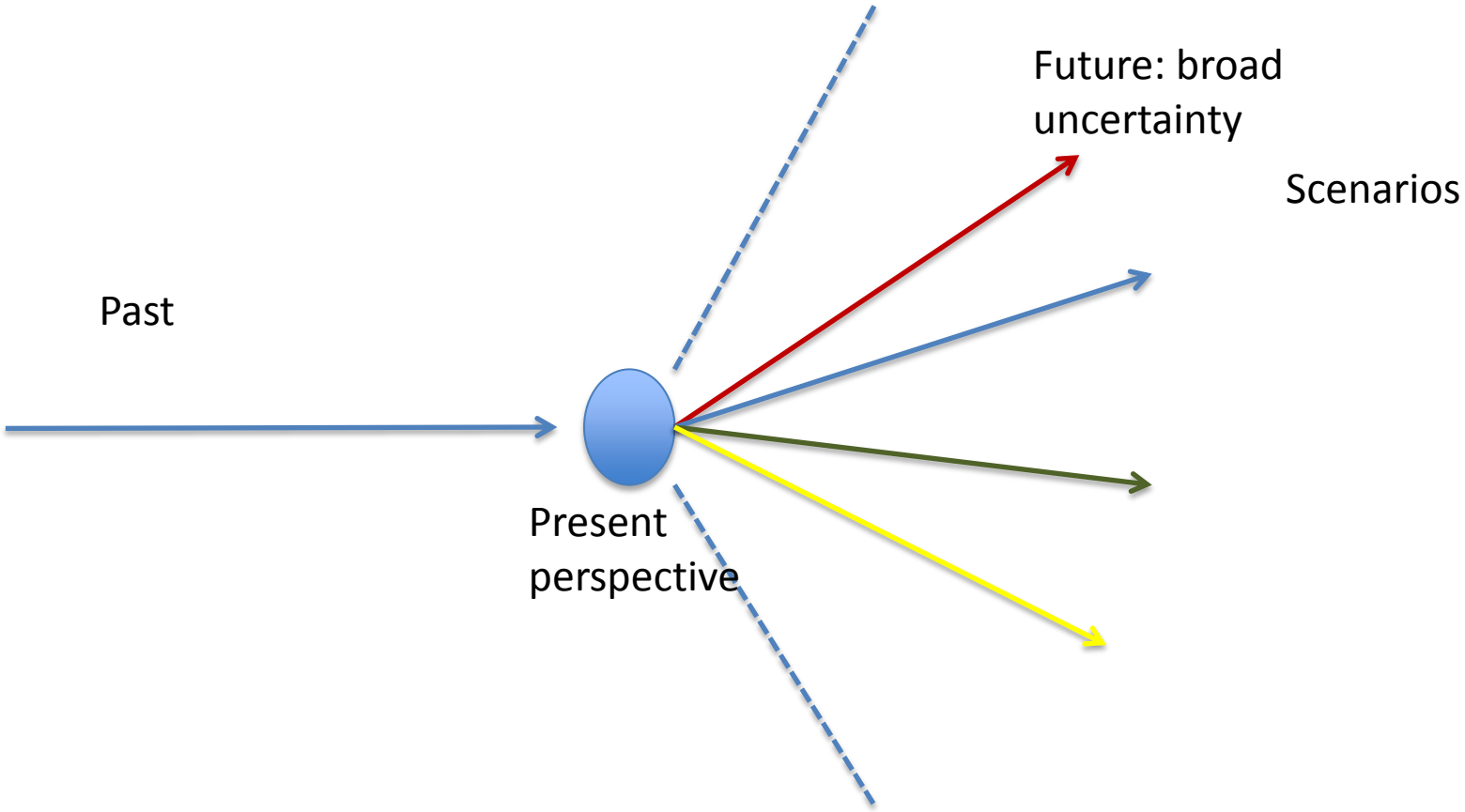
Key terms

- Drivers: external forces of change, outside of the decision space of a given user group, that shape that decision space (*examples: climate change, external aid, global price change for national decision-makers*)
- Scenarios: multiple plausible future narratives about how the context for decision space may develop (*example: high climate variability, low climate variability*)
- Scope: What falls within the focus for research and decision-making, policy (*example: CSA including agricultural production, food security, mitigation*)
- Decision variables: Leverage points
- Indicators of change: show impact of drivers, decisions (*examples: rural poverty, access to extension services*)
- Outcomes/objectives


Climate change
Scenario: context
Competition by external markets
Aid flows
Decision space
Policy 1
Policy 2
Decision maker


Decision space
Decision maker
Decision space
Decision maker
Decision space
Decision maker
Decision space
Decision maker


Future: broad uncertainty
Past
Forecasting
Present perspective


Future: broad uncertainty
Scenarios
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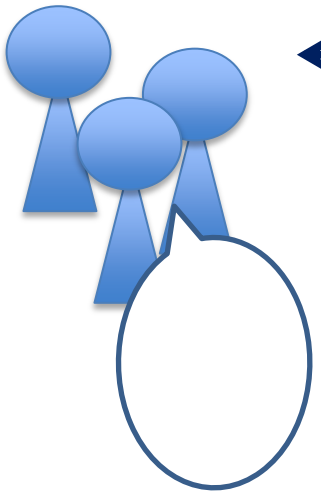
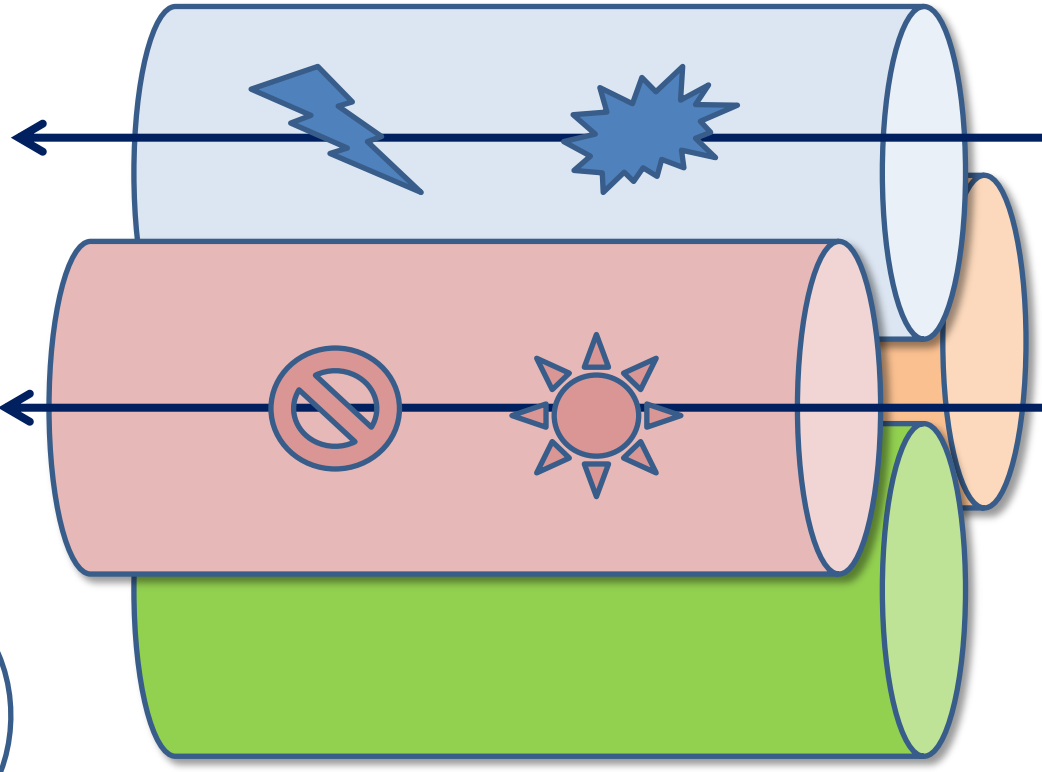
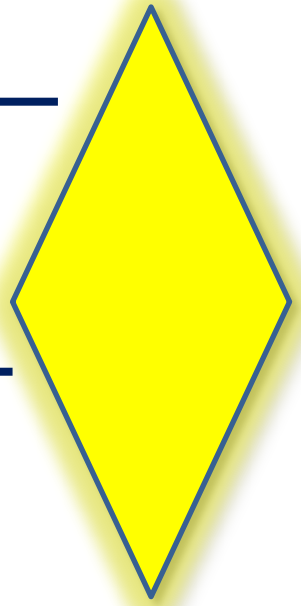
Scenarios as alternate future contexts

Actors in the present



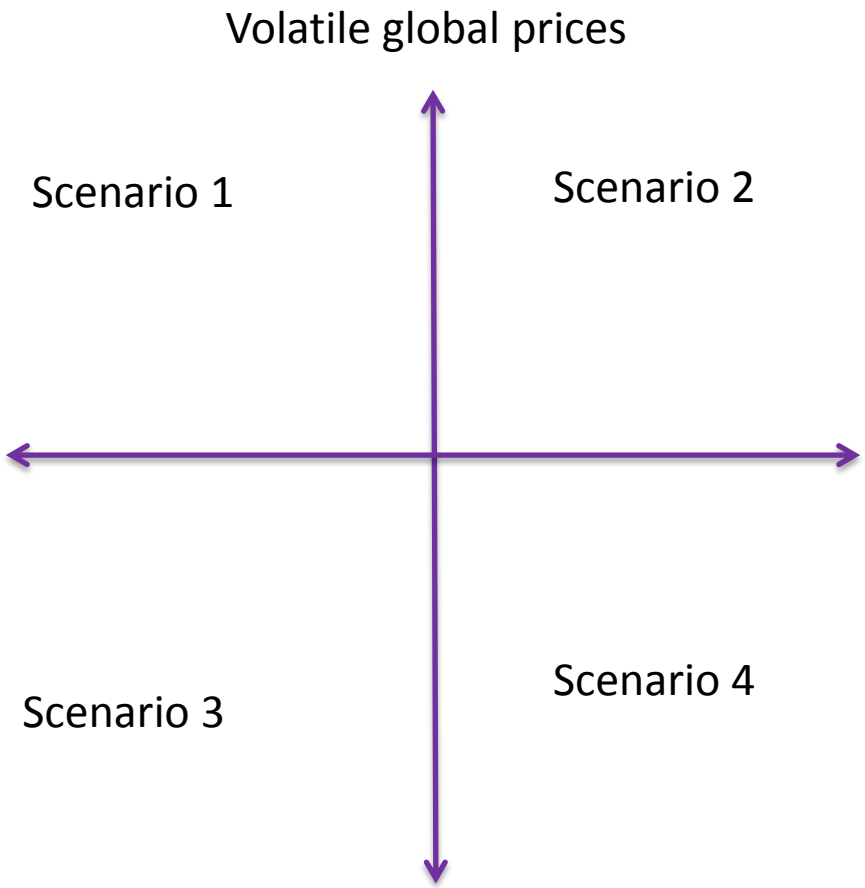




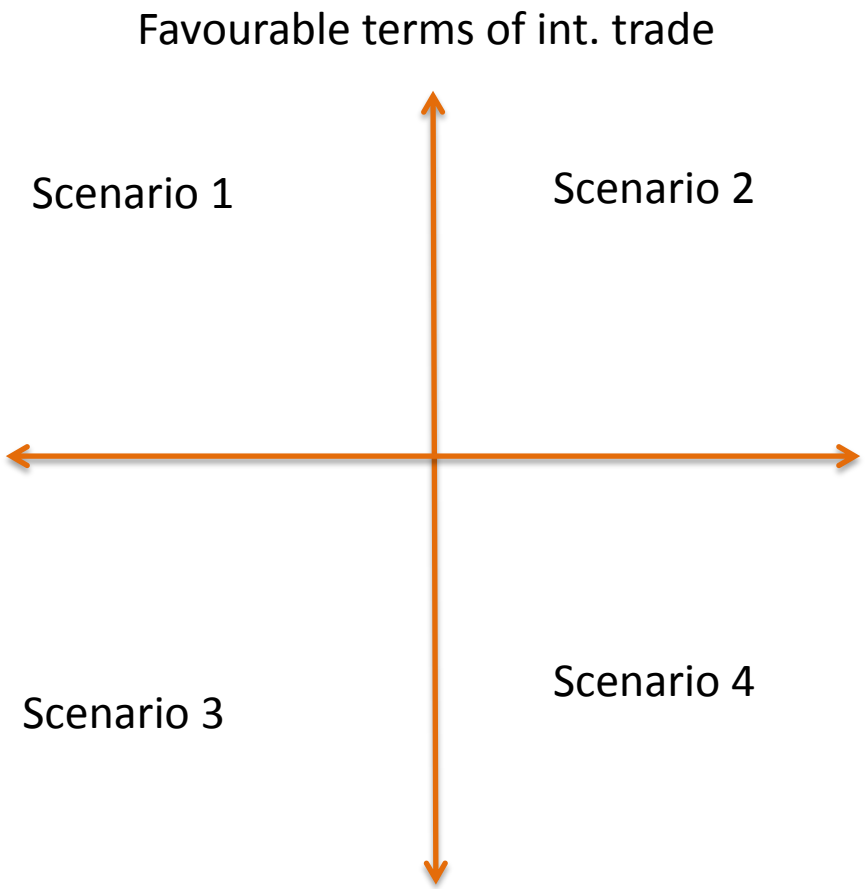
Shared future goals

What challenges and opportunities do we face in each scenario as we try to get from our desired future to the present?

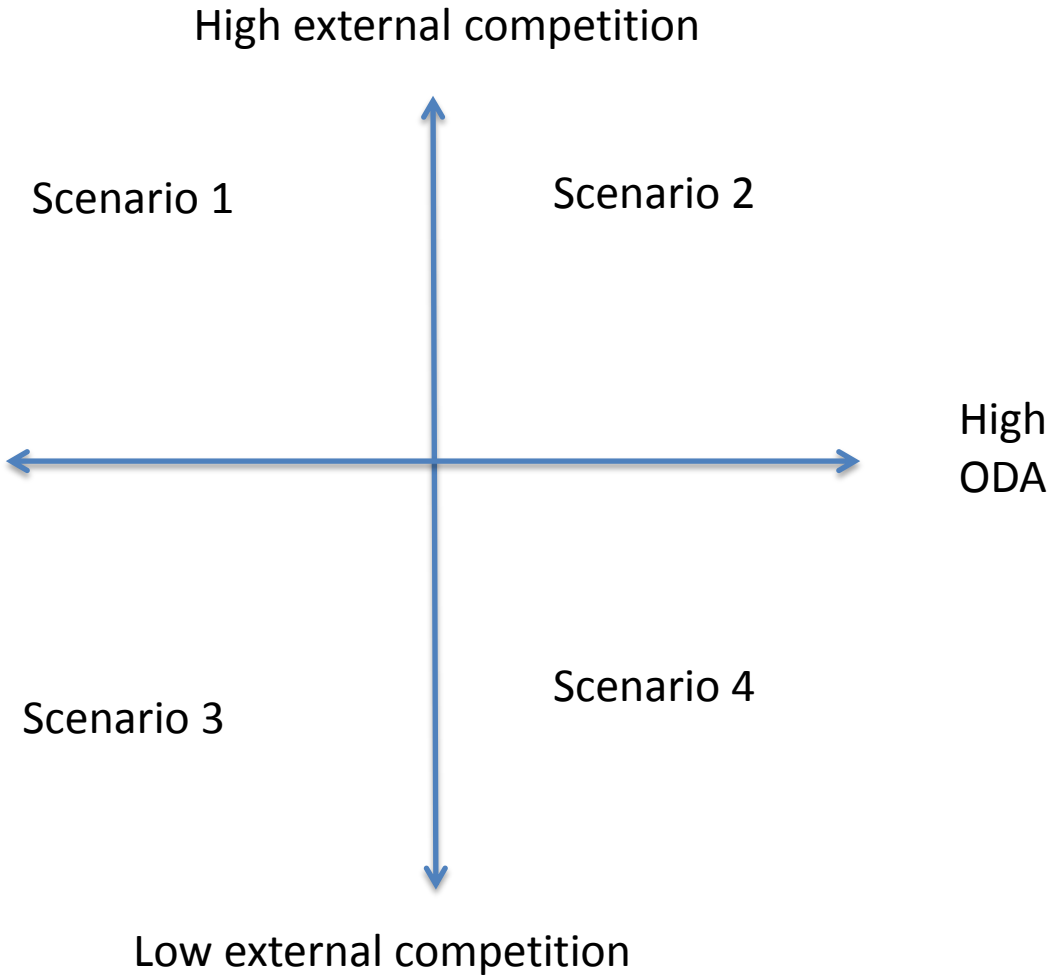
MALAWI


Volatile global prices
Scenario 1
Scenario 2
Low external aid
High external aid
Scenario 3
Scenario 4
Stable global prices

ZAMBIA


Favourable terms of int. trade
Scenario 1
Scenario 2
Low external investments
High external investments
Scenario 3
Scenario 4
Unfavourable terms of int. trade

VIET NAM


High external competition
Scenario 1
Scenario 2
Low
ODA
High
ODA
Scenario 3
Scenario 4
Low external competition

Success for the CSA project

Policy and institutional analysis: which policies, which stakeholders

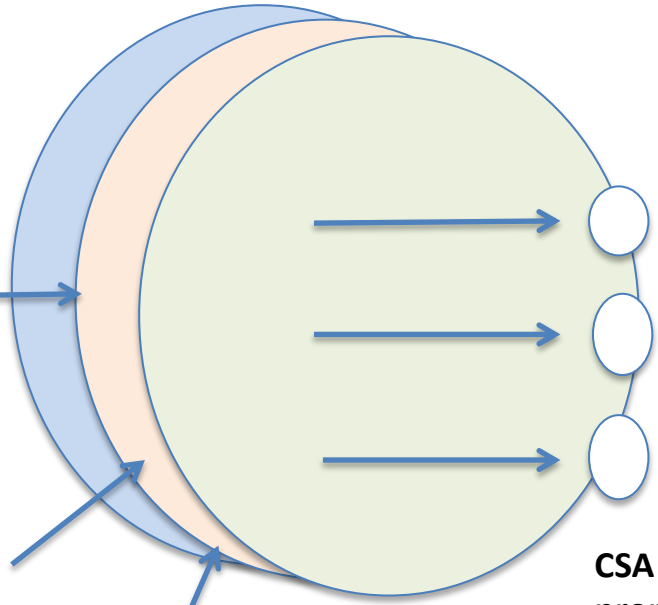
Scenarios: multi-stakeholder future decision contexts (climate/soc-eco): ***engagement tool***

Large-scale quant scenarios

Econometric analysis: recommendations for proposal seeds in current context

Extend econ. analysis into future assumptions

Risk simulations



Multi-level current and future contexts as ***engagement tools*** for developing pathways for investment proposals with policy, financers

CSA investment proposals co-financed and facilitated by enabling policy environment

Policy and institutional analysis: which policies, which stakeholders

Active engagement

Econometric analysis: tradeoffs and synergies

No econ. Analysis Viet Nam

Stakeholder consultation

Scenarios: multi-stakeholder future decision contexts (climate/soc-eco): ***engagement tool***

Scenarios applied To econ. Analysis To an extent (time)

Large-scale quant scenarios

Impact scenarios + Tanzania scenarios

Extend econ. analysis into future assumptions

Cost/benefit analysis

Risk simulations

Proposal seeds v1

Stakeholder consultations

Proposal seeds v2

Enabling policy contexts

Multi-level current and future contexts as ***engagement tools*: 1. policy guidance, 2. investment proposals**

CSA proposals, co-developed with policy and co-financers

Viet Nam

Policy and institutional analysis: which policies, which stakeholders

Active engagement

Econometric analysis: tradeoffs and synergies

No econ. Analysis Viet Nam

Stakeholder consultation

Scenarios: multi-stakeholder future decision contexts (climate/soc-eco): ***engagement tool***

Scenarios applied To econ. Analysis To an extent (time)

Large-scale quant scenarios

Proposal seeds v2

Enabling policy contexts

Stakeholder consultations

Multi-level current and future contexts as ***engagement tools*: 1. policy guidance, 2. investment proposals**

Extend econ. analysis into future assumptions

Cost/benefit analysis

Risk simulations

Proposal seeds v1

CSA proposals, co-developed with policy and co-financers

Zambia

Policy and institutional analysis: which policies, which stakeholders

Active engagement

Econometric analysis: tradeoffs and synergies

Scenarios: multi-stakeholder future decision contexts (climate/soc-eco): ***engagement tool***

Scenarios applied
To econ. Analysis
To an extent (time)

Stakeholder consultation

Impact scenarios

Proposal seeds v2

Enabling policy contexts

Stakeholder consultations

Multi-level current and future contexts as ***engagement tools*: 1. policy guidance, 2. investment proposals**

Extend econ. analysis into future assumptions

Cost/benefit analysis

Risk simulations

Proposal seeds v1

CSA proposals, co-developed with policy and co-financers

Success for the CSA project

- Investment proposals developed with policy makers and co-financers through back-casting in co-developed scenario contexts: co-ownership, shared understanding of feasibility and challenges
- Multi-level inputs from large-scale scenarios, econometric analysis and risk simulations
- Focus on investment proposals provides useful target – but what about larger purpose of science-policy interaction?
- Identify policy vulnerabilities and recommend changes
- Identify role for FAO and other research to inform decision-making
- Embedding?

CSA scenarios SEA: *operationalizing policies and investments*

- Institutional and policy analysis northern Viet Nam: by 15 July
- Institutional and policy analysis SEA: by 30 July
- Workshop 1: SEA socio-economic scenarios, by end of September, informed by stakeholder analysis – inputs for risk simulation + econometric "simulations"
- Round of feedback
- Quantification of socio-economic scenarios at the regional level + combined with climate scenarios by end of December
- Quantification of socio-economic scenarios using risk simulation + econometric analysis by end of December
- Policy analysis + proposals workshop for Vietnam in March 2014
- Quantification of back-casting results in report (30 April 2014)
- Investment proposals (workshop on 30 June 2014)
- Reporting and connection to UNFCCC (beginning of June 2014)

Scenarios in CSA: South East Asia/Viet Nam context

- To be captured in post-workshop report
- Broad contextual description
- What policies? What institutions?
- Which stakeholders should be involved?
- From policy brief:

  SEDS: modern industrialized society by 2020 – actions captured in SEDP, annual SEDPs; Sustainable Development Strategy; National Green Growth Strategy
  MARD agriculture and rural development 5 year plan
  Master Plan for Agricultural production: specific up to 2020-2030, untested?
  MARD adaptation and mitigation to CC: research? Same for GHG emissions?
  National Target programmes (example up to 2015)
  Risk and extreme events programmes; REDD

Scenarios in CSA: South East Asia/Viet Nam context

- Policy analysis and back-casting:
  - *Can we give an example of current policy that could be examined and challenged by the scenarios developed in this meeting?*
  - *Can we give an example of a new investment proposal that could be examined by our scenarios?*
  - *What about institutional arrangements in a broader sense?*

Scenarios in CSA: steps in Zambia

- Institutional and policy analysis: by 15 July
- Workshop 1: Zambia socio-economic scenarios, 12-14 August informed by stakeholder analysis
- Global socio-economic and climate scenarios from IFPRI by 15 November 2013
- Quantification of socio-economic scenarios at the local to national level by end of December 2013, first draft at end of November 2013
- Round of feedback: start with project core team
- Policy analysis and proposals workshop for Zambia by February 2014
- Quantification of back-casting results by April 30 2014
- Investment proposals (meeting on 30 June 2014)
- Reporting and connection to UNFCCC (event

Scenarios in CSA: steps in Malawi

- Institutional and policy analysis: by 15 July
- Workshop 1: Malawi socio-economic scenarios, 3-5 September informed by stakeholder analysis
- Global socio-economic and climate scenarios from IFPRI by 15 November 2013
- Quantification of socio-economic scenarios at the local to national level by end of December 2013, first draft at end of November 2013
- Round of feedback: start with project core team
- Policy analysis and proposals workshop for Malawi by end of February 2014
- Quantification of back-casting results by April 30 2014
- Investment proposals (meeting on 30 June 2014)
- Reporting and connection to UNFCCC (event

Scenarios in CSA: Zambia

- To be captured in post-workshop report
- Broad contextual description
- What policies? What institutions?
- Which stakeholders should be involved?
- From policy brief:

  Vision 2030: no CC, 3 scenarios ; SN Development Program: CC mentioned in ag and environment
  NAP: no CC; CAADP National Agricultural Investment plan
  Draft reviewed by EPIC team – CC considerations
  National Policy on environment: sector integration, CC mitigation
  NAPA: agriculture and food security
  National Climate Change response strategy: vulnerable sectors
  National Policy on Climate Change
  NAMA working group, REDD+

Scenarios in CSA: Zambia

- Policy analysis and back-casting:
  - *Can we give an example of current policy that could be examined and challenged by the scenarios developed in this meeting?*
  - *Can we give an example of a new investment proposal that could be examined by our scenarios?*
  - *What about institutional arrangements in a broader sense?*

Scenarios in CSA: steps in Malawi

- Institutional and policy analysis: by 15 July
- Workshop 1: Malawi socio-economic scenarios, by end of July informed by stakeholder analysis
- Global socio-economic and climate scenarios from IIASA by 15 November 2014
- Quantification of socio-economic scenarios at the local to national level by 15 November 2014
- Back-casting workshop for Malawi in February 2014
- Quantification of back-casting results by April 30 2014
- Investment proposals (meeting on 30 June 2014)
- Reporting and connection to UNFCCC (event

Scenarios in CSA: Malawi

- To be captured in post-workshop report
- Broad contextual description
- What policies? What institutions?
- Which stakeholders should be involved?
- From policy brief:

  Vision 2020: untested? Specific interventions mentioned.
  Mitigation and adaptation not addressed in detail in V2020
  MGD: Agriculture as driver of economic growth
  MGD: Special attention to CC
  NAPF: no CC; ASWAp: risk management
  NEAP; NAP: no CC
  NAPA, NAMAs; Climate Change Policy

Scenarios in CSA: Malawi

- Policy analysis and back-casting:
  - *Can we give an example of current policy that could be examined and challenged by the scenarios developed in this meeting?*
  - *Can we give an example of a new investment proposal that could be examined by our scenarios?*
  - *What about institutional arrangements in a broader sense?*

Further questions and followup

- Meeting notes to be disseminated
- Annotated presentation to be disseminated
- Contacts for stakeholders to be followed up on
- Revised project outline

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