



# FORESIGHT TRAINING TOOLKIT

# WEST AND CENTRAL AFRICA

Developing skills and capacity in applying foresight for climate resilient agricultural development in West and Central Africa





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The Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA) project, led by the Alliance Bioversity International and CIAT helps deliver a climate-smart African future driven by science and innovation in agriculture. AICCRA works to make climate information services and climate-smart agriculture technologies more accessible to millions of smallholder farmers across Africa.

**About AICCRA** Accelerating Impacts of CGIAR Climate Research in Africa (AICCRA) is a project that helps deliver a climate-smart African future driven by science and innovation in agriculture. It is led by the Alliance of Bioversity International and CIAT and supported by a grant from the International Development Association (IDA) of the World Bank. Explore AICCRA's work at **aiccra.cgiar.org** 

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**Design and Layout |** Debra-Jean Harte Photo Cover: ©Adobe Stock

# ACKNOWLEDGEMENTS

This WCA Regional Foresight Toolkit was designed and developed as part of foresight training to support a regional Community of Practice (CoP) of foresight experts in the West and Central Africa Region. A regional training was held in Dakar, Senegal in October 2022, led by Sabrina Chesterman, Constance Neely, and facilitated by Marie Parramon Gurney, with support from Emma-Jane Fuller. Alcade Segnon and Robert Zougmoré provided leadership to the partnership and co-design of the entire training series and foresight application approach. In addition, Alcade co-facilitated key foresight sessions in Dakar and lead stakeholder relationships through the entire process.

We owe much gratitude to the expertise of the CORAF team, namely Dr Nieyidoba Lamien, Dr Emmanuel Njukwe, Dr. Amadou Ngaiado and Pauline Ngandoul Diouf for all their valuable discussions and insights into structuring this froesight training and the establishment of a regional CoP to support the application of foresight across the region.

The West and Central Africa Council for Agriculture Research and Development (CORAF) is a core partner of the AICCRA West Africa cluster. CORAF is an international non-profit association of national agricultural research systems from 23 West and Central African countries. Together with ASARECA (Association for strengthening agricultural research in Eastern and central Africa), CCARDESA (Centre for Coordination of Agricultural Research and Development for Southern Africa) and NASRO (North African Sub-Regional Research Organization), it forms the four sub-regional organizations that make up the Forum for Agricultural Research in Africa, FARA. As an umbrella organization, CORAF delivers on three activity pillars related to:

- A. Scaling technologies and innovations for impact;
- **B.** Regional integrated capacity strengthening and coordination; and
- **C.** Knowledge management, foresighting and anticipation, each of which can address the urgent need to improve the knowledge base and evidence-based dialogue upon which practice and policy responses to climate change are built.

CORAF's 2018-2027 Strategic Plan particularly emphasizes the role of foresight analysis – using historical data and modelling future scenarios to draw conclusions about actions to be taken in the present - to build consensus and inform decision-making on research priorities.

A huge thanks to the regional foresight Community of Practice for all their hard work and support throughout the training (10 – 14 October 2022), their co-facilitation support during the application week (17-21 October 2022), and their eagerness to be foresight ambassadors in the region. Ayodeji Rauf, Dr Hadja Oumou Sanon, Dr Adolphe Mahyao Germain, Edward H. Decker, Dr. Ihegwuagu Nnemeka Edith, Dr Wouedjie, Thegue Alice-Norra, Dr. Nathalie Kpera, Dr. Djondang Koye, Aminata Bâ Dia, Dr Amadou Abdoulaye M. Bahari, and Nestor Ngouambe.



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The West Africa regional level implementation led by AICCRA West Africa Cluster (AICCRA WA) collaborates with the West and Central Africa Council for Agriculture Research and Development (CORAF), an association of national agricultural research systems from 23 West and Central African countries, and AGRHYMET Regional Centre, a specialized institute of the Permanent Interstate Committee for Drought Control in the Sahel (CILSS), to ensure that effective large-scale intra-regional and south-south adoption within various value chains are taking place through innovative delivery models for climate services and CSA from West Africa. AICCRA aims to increase access to climate information services and climate-smart agriculture technologies in Africa.

#### aiccra.cgiar.org



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#### www.coraf.org

AICCRA	Accelerating the Impact of CGIAR Climate Research for
	Africa
AU	African Union
CAADP	Africa Agriculture Development Programme
CEMAC	Economic and Monetary Community of Central Africa
CILSS	Permanent Interstate Committee for Drought Control in the Sahel
СоР	Community of Practice
CORAF	West and Central Africa Council for Agriculture Research
	and Development
CSA	Climate Smart Agriculture
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EWS	Early Warning Systems
FAO	Food and Agricultural Organisation
FAW	Fall Army Worm
IDRC	International Development Research Centre
IPPC	International Plant Protection Convention
LECRDS	Low Emission Climate-Resilient Development
MSP	Multi-Stakeholder Partnerships
NARIs	National Agricultural Research Institutes
NARS	National Agricultural Research Systems
RVF	Rift Valley Fever
SHARED	Stakeholder Approach to Risk Informed and Evidence-
	based Decision-making
WCA	West and Central Africa
WOAH	World Organisation for Animal Health
₩НΟ	World Health Organisation



# CONTENTS

THE AIM OF THE REGIONAL FORESIGHT TRAINING TOOLKIT	5
FORESIGHT COMMUNITY OF PRACTICE	6
FORESIGHT KEY FRAMEWORK STAGES	7
STRUCTURE OF THE TOOLKIT	8
GLOSSARY OF KEY TERMS	9
MODULE 05	17
Scenario Implications and Transformative Change	
REFERENCES	38



# THE AIM OF THE REGIONAL FORESIGHT TRAINING TOOLKIT

This regional foresight training toolkit aims to support a regional foresight community of practice to practically apply the range of foresight tools and methods for innovative strategic planning and policy formulation in their respective institutions. The training approach is mapped out on the following page.

# FORESIGHT COMMUNITY OF PRACTICE TRAINING APPROACH



# FORESIGHT KEY FRAMEWORK STAGES

DATA, EVIDENCE, KNOWLEDGE AND CREATIVITY

STAKEHOLDER ENGAGEMENT AND PARTICIPATION

#### SITUATIONAL ANALYSIS LONG TERM FUTURE PLANNING Interpretation Prospection Reflection Analysis Plan Strategy Input What do we want What is What might happen What will we do What might we want Context Why is it happening? happening? to experience in the that we have not to do to get there? differently? future? What might thought about? get in our way? Scope Historical Systems trends mapping Backcasting Developing Develop Theme or analysis Visioning road map scenarios kev topic Cross Horizon sectoral Geopolitical Pathway boundary scanning and multi-Causal Scenario Sequencing development relationships implications analysis stakeholder & trade-offs approaches Understand relevant Multi-Network Transformation structures stakeholder actions mapping and policies co-ordination Setting the **Behaviour shift** timelines mapping Mapping the stakeholders

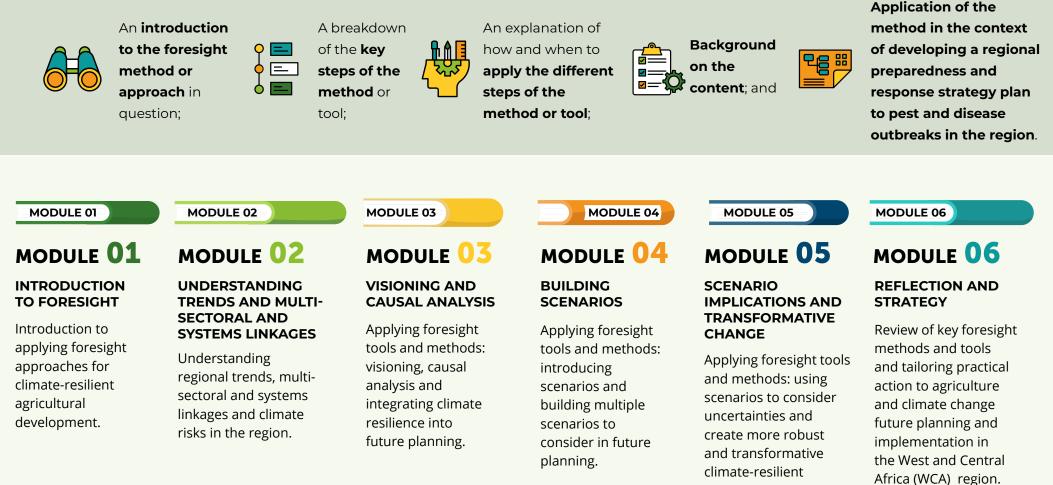
Influence and power relations

RETURN TO CONTENTS

# STRUCTURE OF THE TOOLKIT

The toolkit comprises six modules structured to both show the methodology but also to be applied, by building a clear case study and examples of climate-resilient development in agricultural systems with relevance to the WCA region. This allows the user to gain insights into both the foresight tools, methods, and key steps but also to embed case studies and practical examples to better apply those methods into their own national and institutional contexts.

policies and plans.



# **GLOSSARY OF KEY TERMS**

# FORESIGHT

Term	Description	Term	Description
Backcasting	The process of working backwards from the definition of a possible future to determine what needs to happen to make the future unfold and connect to the present.	Critical Uncertainties	Are drivers that are both highly impactful and highly uncertain.
Barrier	Identified obstacle that could stop the achievement of an activity.	Cross-cutting Issues	Issues or challenges that affect more than a single interest area, institution, or stakeholder, and that need to be addressed from all points
Black Swan	An event that could absolutely not be predicted.	Drivers	Are factors, issues or trends that cause change
Brainstorming	A method of obtaining ideas without judgement or filtering. It involves encouraging wild and unconstrained suggestions and listing ideas as they emerge.	Drivers	thereby affecting or shaping the future.
Causality	A logical link between events, where a cause precedes an effect and altering the cause alters the effect.	Driving Force	A cluster of individual trends on the same general subject moving trends in certain directions, they are broad in scope and long term in nature (for example, climate change or globalisation).
Complexity	Complex systems are non-linear and diverse networks made up of multiple interconnected elements. Cause and effect relationships within the system are not easily discernible	Evidence	The integration of raw data constituting numbers, words, images, and insights emerging from diverse knowledge sources.
	or predictable. Historical extrapolation is not possible for predicting emergence (new patterns and behaviours) in complex systems.	External Driver	External force of change, for example political or market drivers.

Term	Description		
Feasible	Possible and practical.		
Forecast	An estimate or best guess of what might happen in the future i.e. not a definitive prediction.		
Foresight	Structured tools, methods and thinking styles to enable the capacity to consider multiple futures and plan for them.		••••
Foresight Organising Group	A small core group that builds the foresight plan.		
Foresight Participating Group	A broad mix of identified key stakeholders that need to be involved.	-	
Futuring	The act, art, or science of identifying and evaluating possible future events.		
Futures thinking	Describes the practice of thinking about the future in a structured way, and the methods and approaches that are used to do so.		

Term	Description
Grey Rhino	These are the large, obvious dangers that will sooner or later emerge but whose exact timing is unknown.
Impact	Refers to the potential scale of impact of a driver on a scenario theme.
Internal Driver	Internal force of change for example, social drivers within a farm or community directing the decision making of a farmer.
Mega-trend	A trend that is apparent at a large or global scale e.g. growing youth population across the African continent.
Mind Mapping	Allows a group's ideas to be charted in logical groupings fairly quickly, even when ideas are given in a non-sequential manner. This technique allows efficient brainstorming for ideas and at the same time creates a skeletal framework for later categorisation of the information generated.
Modelling and Simulation	The process of creating and experimenting with a computerised mathematical model imitating the behaviour of a real-world process or system over time. Simulation is used to describe and analyse the behaviour of a system when asking 'what-if' questions about the real system and aid in the design of real systems.

Term	Description
Not Predictive	Participatory with multiple viewpoints, bringing in quantitative and qualitative evidence but not predictive.
Pathway	A trajectory in time, reflecting a sequence of actions and consequences against a background of separate developments, leading to a specific future situation.
Plausible	It is reasonable to assume the scenario could happen. Plausibility does not mean that a future situation will happen.
Predictability	The degree of confidence in a forecasting system based either on law derived from observations and experience, or on scientific reasoning and structural modelling.
Projecting	A quantitative technique that can be used in the analysis phase of the foresight process. Projecting or time series analysis are used when several years of data are available, and trends are both clear and relatively stable.
Projection	An expected value of one or more indicators at particular points in the future, based on the understanding of selected initial conditions and drivers.
Resilience	A system's ability to cope with and recover from shocks or disruptions, either by returning to the status quo or by transforming itself to adapt to the new reality.

Term	Description
Scenarios	Are storylines/narratives, answering 'what if' questions that describe multiple alternative futures spanning a key set of critical uncertainties. Scenarios identify future drivers of change and then plot out plausible directions that they may take.
Scenario Development	An approach to understanding highly impactful and highly uncertain drivers and to describe possible future states. Although they address uncertainty, scenarios are not predictions or forecasts - they are not 'true' or correct/wrong - only plausible.
Scenario planning	Is a technique of strategic planning that relies on tools and technologies for managing the uncertainties of the future
Social Network Mapping	A tool to identify the importance and influence of stakeholders as well as how they exchange information or are connected.
Strategic foresight	The combination of foresight and strategic management
Time Frame	The complete period (past-to-future) considered in a foresight exercise.

Term	Description
Transformation	An agriculture and food systems transformation is a significant redistribution - by at least a third - of land, labour and capital, and/ or outputs, and outcomes (e.g. types and amounts of production and consumption of goods and services) within a time frame of a decade.
Trend	A general tendency or direction of a movement or change over time e.g. increasing erratic seasonal rainfall patterns.
Trend Impact Analysis	Collecting information and attempting to spot a pattern, or trend, and assess its influence from the information.
Uncertainty	Refers to how much or how clear we are on how a driver will emerge or play out in the future. High uncertainty does not mean 'high improbability', high uncertainty can mean having little knowledge of how something may pan out.
Underlying Cause	Unpacking why an obstacle is in place.

Term	Description
Unknown Unknowns ?	Issues and situations in organisations that have yet to surface and which are blind spots for planners who are unaware that they do not know about them.
Viable	Able to be done or could occur.
Vision ⊕–⊖ ⊛→⊜	A compelling image of a (usually preferred) future.
Visioning	A well-known prospective technique with a highly participatory approach.
Wicked Problem	A problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognise.
Wild Card	A low-probability but high-impact event that seems too incredible or unlikely to happen.

# **CLIMATE RESILIENCE**

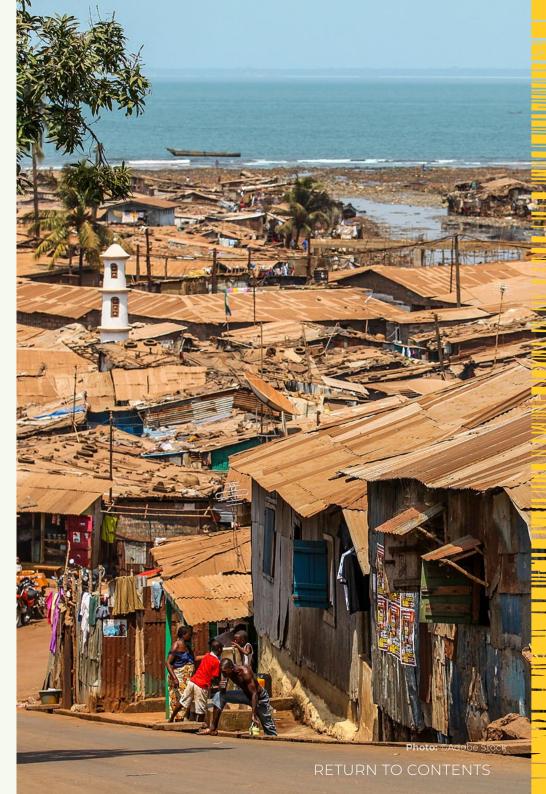
Term	Description
Adaptive Capacity	The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.
Climate Change	Climate change is a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer.
Climate Resilience	The ability of a system to 'bounce back' from the impacts of climate-related stresses or shocks. It is the ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions.
Exposure	Refers to the inventory of elements in an area in which hazard events may occur.

Term	Description
Hazard	A possible, future occurrence of natural or human induced physical events that may have
	adverse effects on vulnerable and exposed elements.
Risk	Intersection of hazards, exposure, and vulnerability.
Sensitivity	The degree to which a system is affected, either adversely or beneficially, by climate variability
	or change.
Social Vulnerability	Inability of people, organisations, and societies to withstand adverse impacts from multiple
	stressors to which they are exposed.
Vulnerability	The propensity or predisposition of a system to be adversely affected by an event. Vulnerability
all all	is a function of a system's sensitivity, and its adaptive capacity.

Term	Description
Agriculture	Is the science, art, or practice of cultivating soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products.
Agricultural Value Chain	Includes the people and activities that bring a basic agricultural product such as maize to the consumer. The activities include obtaining inputs and production in the field right through to storage, processing, packaging, and distribution.
Biological Diversity	The variability among living organisms from all sources, including terrestrial, marine, and aquatic ecosystems.
Cross Sectoral Coordination	The engagement, management, planning and implementation, of activities conducted across different thematic sectors to deliver development outcomes (e.g. food security, nutrition, sustainable landscapes, and agriculture).
Ecosystem Services	These include provisioning services, such as the production of food (e.g. fruit for humans or grazing for cattle) and water; regulating, such as the control of flooding and disease; supporting, such as nutrient cycles and oxygen production; and cultural, such as spiritual and recreational benefits.

Term	Description
Elements	The different, discrete elements within a system (e.g. farms, organisations, inputs, and soil).
Interconnections	The relationships that connect the elements (e.g. rules, ideas, funding, or service relationships, among others).
Land Degradation	A process in which the value of the biophysical environment is affected by a combination of human land-use activities. It is viewed as any change or disturbance to the land perceived to be undesirable.
Multi-Stakeholder Collaboration	Consists of a mix of representatives or stakeholders from public, civil, and private domains of society.
Post-Harvest Loss	Is the loss in quantity and quality of agricultural produce between harvest and consumption. It includes on-farm losses e.g. damage to grain by pests, as well as losses along the value chain during transportation, storage, and processing.
Pre-production	This stage of the agricultural process is prior to production and may involve land preparation and the sourcing and purchasing of inputs such as seed and fertiliser.

Term	Description
Productive Inputs	These are used to increase yields and range from improved seeds, genetics, fertilisers and crop protection chemicals to machinery, irrigation technology and knowledge.
System	An interconnected set of elements that is coherently organised in a way that achieves something (function and purpose). For example, the purpose of an agricultural system could be to produce dairy products and the system could consist of interconnected elements such as the farmer, employees, cattle, machinery, feed, water, and energy.
Systems Thinking	A mindset, tool, and process that is reserved for complex problems.
Systems View	Understands life as networks of relationships.
Transboundary Animal Disease	Epidemic disease which is highly contagious or transmissible and has the potential for very rapid spread, irrespective of national borders, causing serious socio-economic and potentially public health consequences.







is the ability to prevent disasters and crises as well as to anticipate, absorb, accommodate or recover from them in a timely, efficient and sustainable manner.

### PREPAREDNESS

refers to a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response. Preparedness is associated with disaster risk reduction.

#### **EARLY WARNING**

- Early warning systems are designed to enhance detection of pests and diseases to prevent introduction and spread.

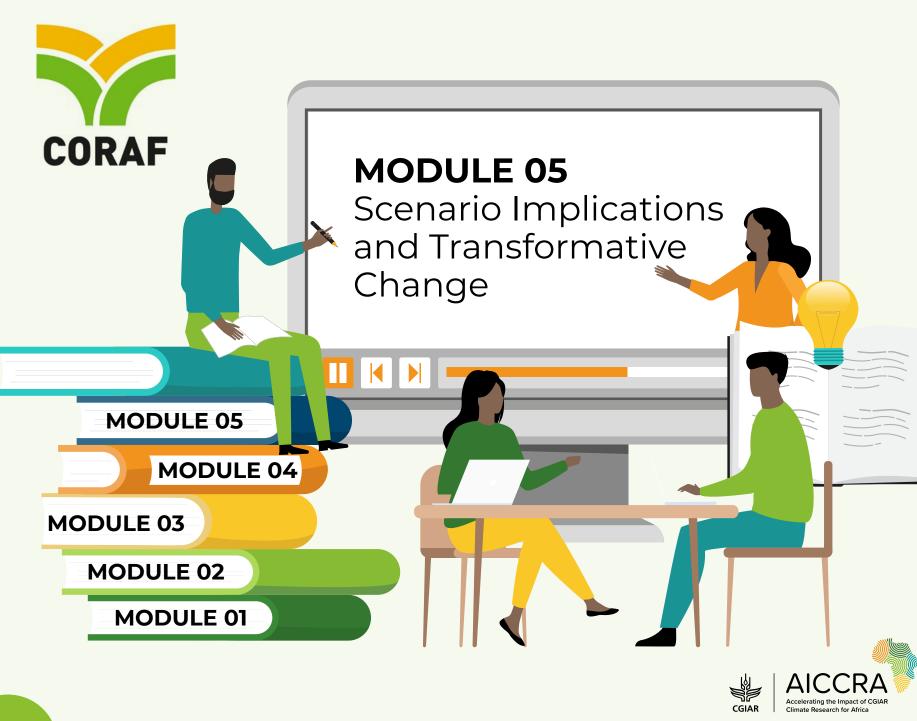
Early warning systems provide up-to-date, accurate information on emerging crop and livestock pests that may be a threat to agriculture or natural resources if they become established in new countries.

#### **RESPONSE** refers

Photo: ©Adobe Stock

to a series of coordinated activities involving one or more organizations, in order to respond to pests and disease concern/ outbreak and bring the situation under control.

The development of decision support systems requires an understanding of what information is needed, when it is needed, and at what resolution and accuracy.



RETURN TO CONTENTS

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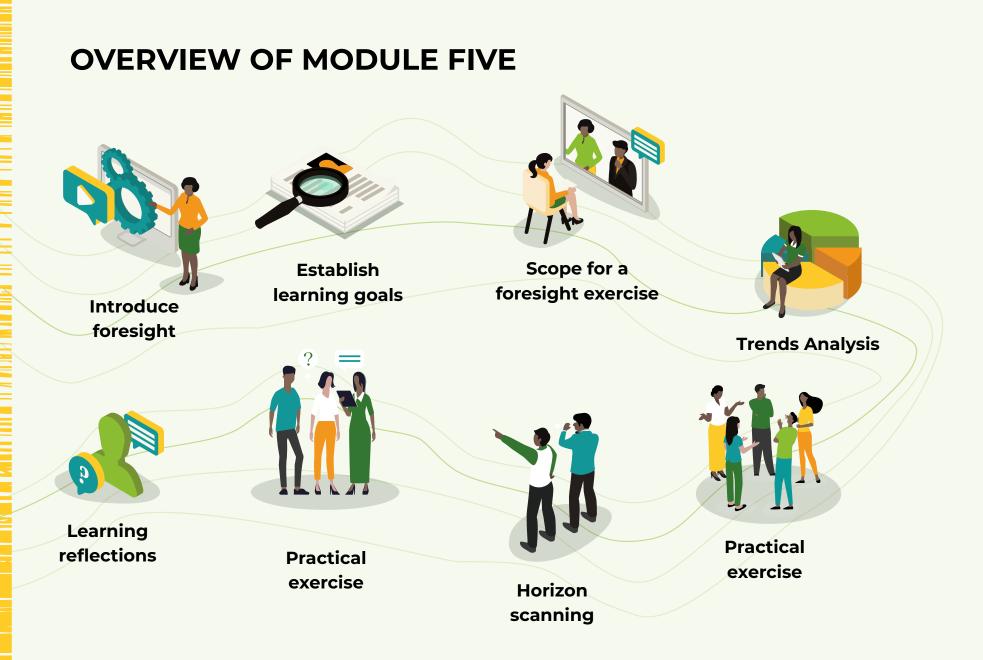
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**MODULE 05** Scenario Implications and Transformative Change

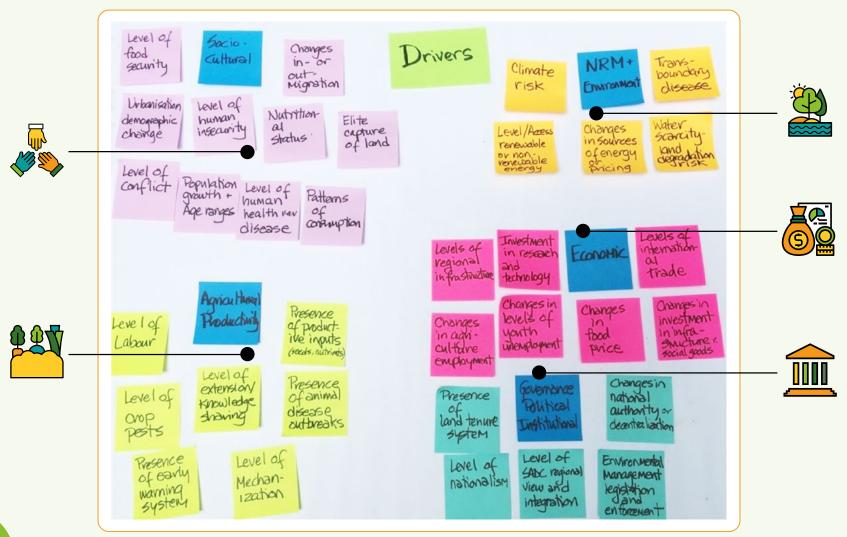


# LEARNING EXERCISE

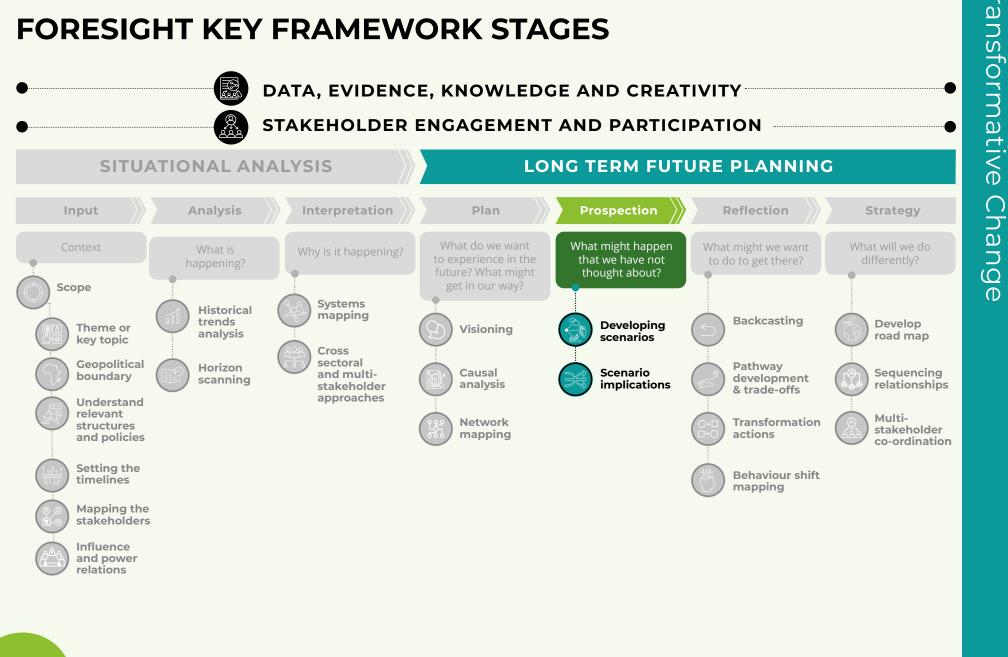
#### Test Your Learning of the West and Central Africa Foresight Framework

Before continuing with Module 5, test your understanding of building scenarios based on information given in Module 4, by answering the questions below:

# In a scenario process, what are the key factors that cause change that we are trying to understand?



RETURN TO CONTENTS



#### RETURN TO CONTENTS

# 20

#### PROSPECTION



Developing Scenario scenarios implications With a view to possible futures, we can better plan interventions to avoid unfortunate scenarios and toward more resilient and preferred scenarios.

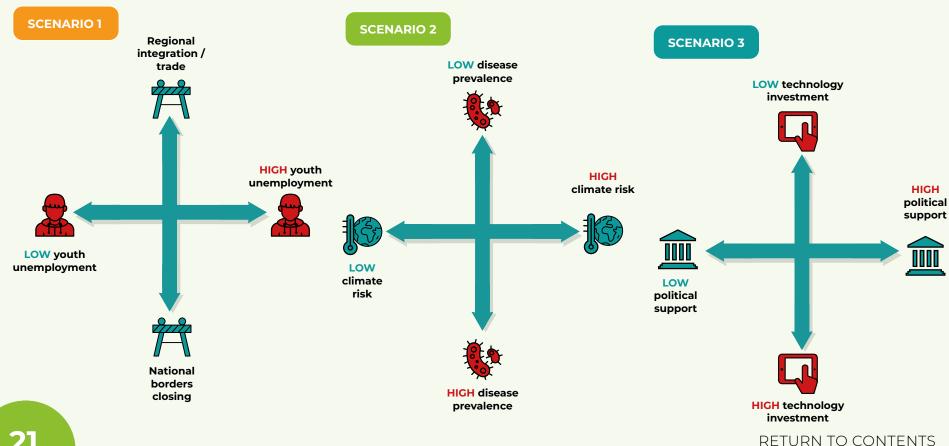
#### **SCENARIO IMPLICATIONS**

#### **STEP 1**

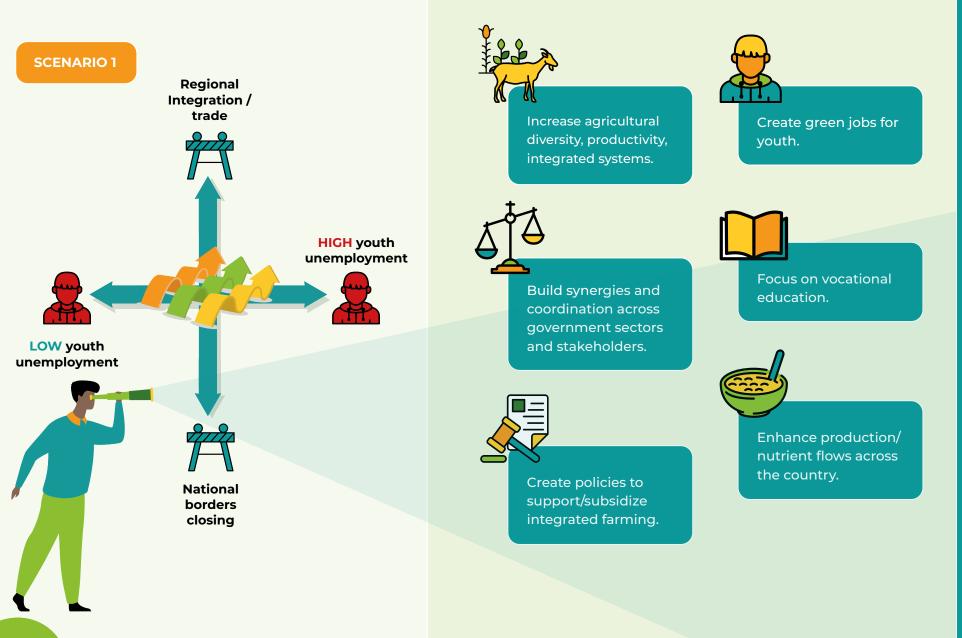
#### **STEP 2**

**Review Implications** 

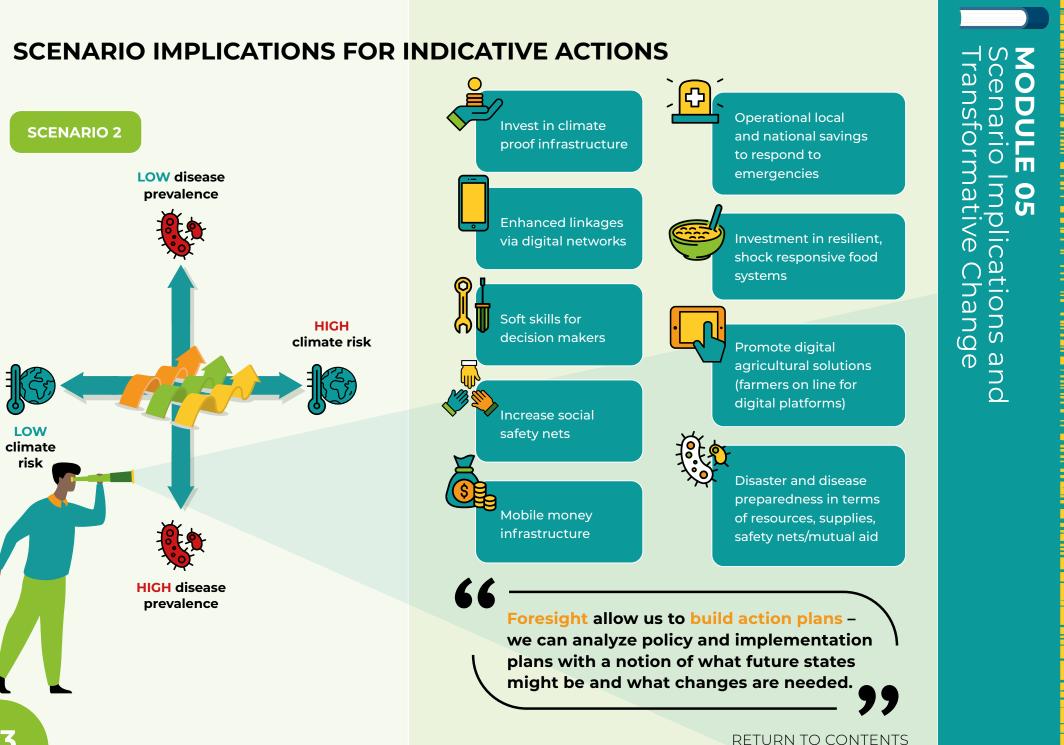
Brainstorm actions across multiple scenarios



#### SCENARIO IMPLICATIONS FOR INDICATIVE ACTIONS



**MODULE 05** Scenario Implications and Fransformative Change



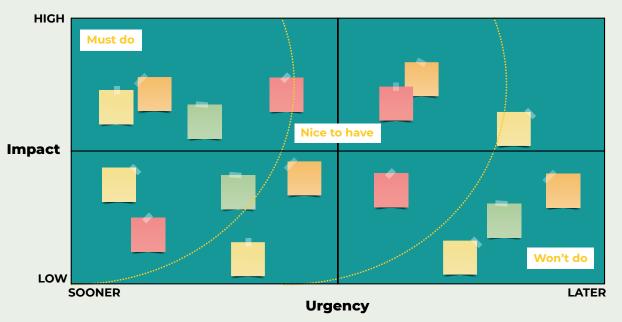


**STEP 3** Prioritization of actions by looking at impact and likelihood

> Prioritization is the art of combining everything we think we know about the past with the fixed resources and processes we have right now to predict the order in which to do things to improve our collective future.

# **IMPACT-LIKELIHOOD MATRIX**

IMPACT ON ISSUES	HICH	Hard and ineffective Potential target, may require resources for adoption	Easy but ineffective First priority, probably already targeted
	LOW	Hard and ineffective Low priority	Easy but ineffective Possible target, may help leverage other behaviours
		LOW	HIGH
		LIKELIHOOD (	OF ADOPTION



# SCENARIO EXAMPLE FROM KOUTIALA, MALI

Climatic and Non-Climate Challenges for Agriculture, Natural Resources and Food Security



Access to farm inputs, technology and equipment.



Security, regulatory policy and governance.



Erratic rainfall.



High population growth.



Subsequent high pressure on natural resources.



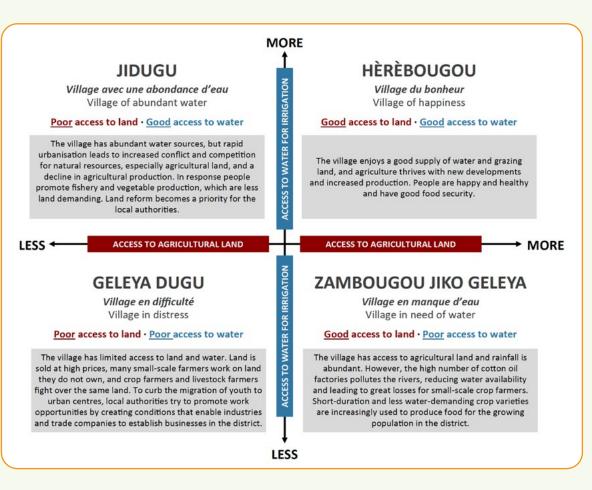
#### RETURN TO CONTENTS

**MODULE 05** Scenario Implications and Transformative Change

# TRANSFORMATIVE SCENARIO PLANNING (TSP)

- A diverse set of stakeholders deliberated the factors that could trigger a positive impact on agriculture, natural resource and food security challenges.
- Access to agricultural land and access to water for irrigation as main drivers were identified and used to build scenarios for the future.
- Scenarios were use to develop "Vision 2035" — a shared view of overcoming challenges and identifying actions to enhance rain water management, soil fertility and access to better quality seeds.

Building relationships, working collaboratively, and developing cross-sectoral understanding were identified as critical to devise and implement adaptation plans to transform agriculture and improve regional food security.





By 2035, strategic investments will target agriculture and natural resource conservation to ensure food security and improve household income in the Koutiala district. New, updated training sessions will allow communities to make better use of the scarce water resources and variable rainfall in the region. This will be combined with improved rainwater and soil management and the promotion of improved seeds.

# **MODULE 05** Scenario Implications and Transformative Change

# **Acting to Transform the System**

To get closer to realising Vision 2035, two workshop participants were nominated to coordinate the efforts for moving toward implementation. The immediate actions (listed below) will be informed by the research findings of ASSAR students during 2017.

	Managing rainwater and soil fertility	Improving the seed sector
Activities	<ul> <li>Develop partnerships</li> <li>Train farmers on sustainable rainwater management</li> <li>Pilot new techniques</li> </ul>	<ul> <li>Diagnose the barriers to the adoption of improved seed</li> </ul>
Influencing	<ul> <li>Create awareness</li> <li>Strengthen interactions between national and local actors</li> <li>Develop farmer skills</li> <li>Create enabling environments</li> </ul>	<ul> <li>Inform seed policy</li> <li>Increase government allocation to the sector</li> <li>Influence effective participation of local institutions</li> </ul>
Outcomes	<ul> <li>Increased adoption of sustainable rainwater harvesting/use and soil fertility management practices</li> <li>Increased crop yields</li> <li>Increased household incomes</li> </ul>	<ul> <li>Increased use of high quality seeds</li> <li>Increased crop yields</li> <li>Increased household incomes</li> </ul>
Impacts	<ul> <li>More dry season farming opportunities</li> <li>Improved food security</li> </ul>	<ul> <li>Improved living conditions and wellbeing</li> <li>Improved food security</li> </ul>

Generally, it is better to have a group of motivated people, who are each committed to a shared set of goals, agree to a prioritization together than to rely on the intuition of a single leader.

Alignment, confidence and commitment result when the group is able prioritize together.



**Impact** – refers to the potential scale of impacts of the driver on your scenario theme.

Uncertainty – in scenarios refers to how much or how clear we are on how a driver will emerge or play out in the future. High uncertainty does not mean 'high improbability', high uncertainty can mean having little knowledge of how something may pan out.



#### **Critical uncertainties** -

are drivers that are both high impact and highly uncertain.



#### The drivers of change

Mali,

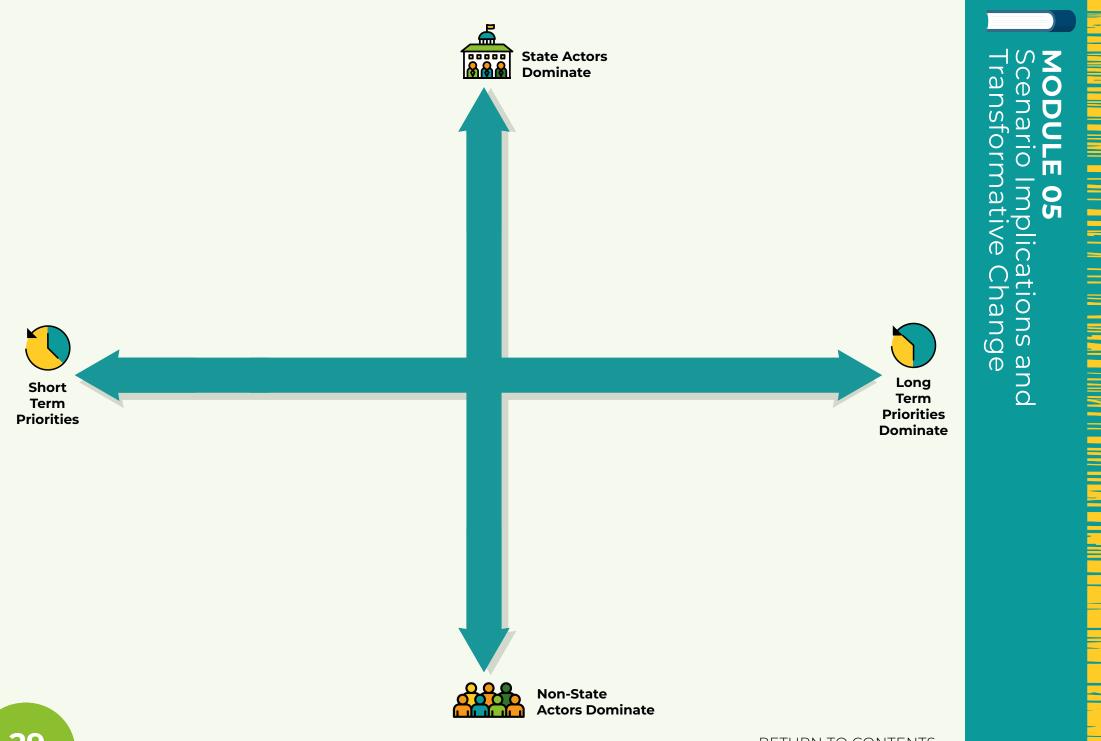
West Africa

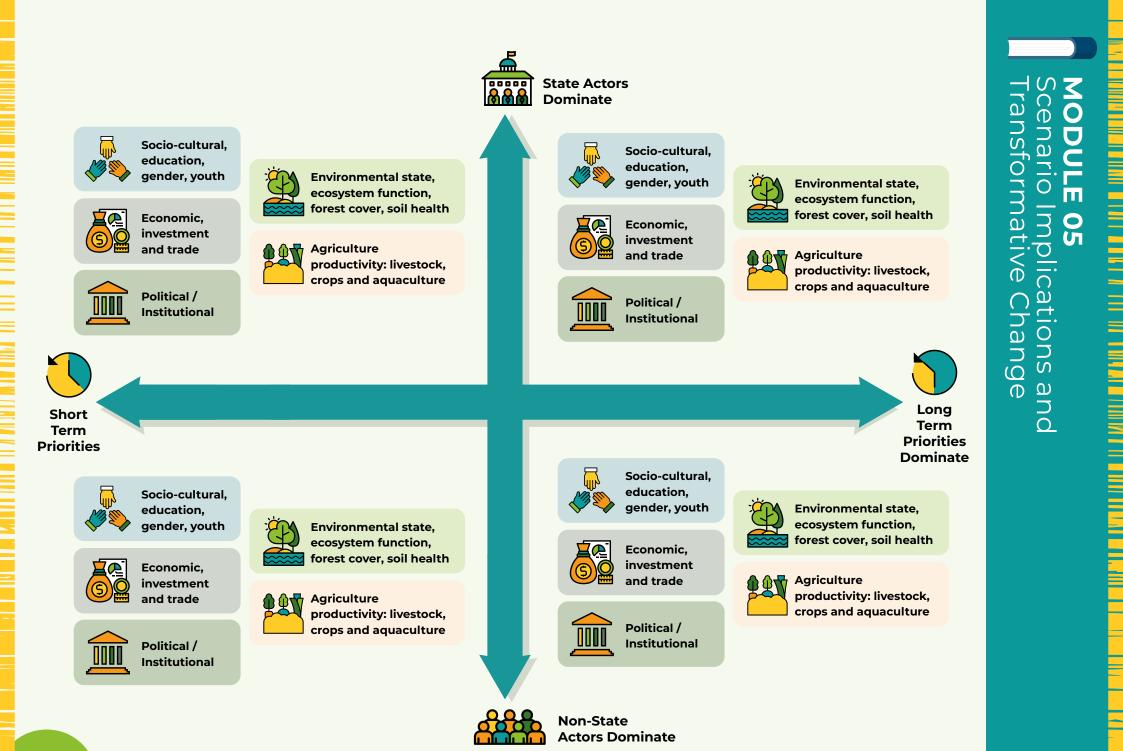
Livelihoods

Food Security,

Driver	<b>Impact</b> - how impactful they are (Low, High)	<b>Uncertainty</b> - how well we know how they will play out (Low, High)
Short Term Planning or Long Term Planning	нісн	нісн
Government or NGO Leadership	нісн	нісн

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Short

Term





# **Political /Institutional**

Governments facilitate short term gain: cash, carbon, calories.



**Political /Institutional** A slow painful transition to sustainable states.



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#### **Political /Institutional**

Ungoverned, quick and chaotic development; dealing with crises at the expense of investment.



#### Political /Institutional

A struggle between civil society and the private sector that is ultimately productive.



**Non-State Actors Dominate** 

Short Term Priorities



#### Socio-cultural, education, gender, youth

CSOs focus on emergency issues. Rural livelihoods are decreasing and there are massive movements to urban areas.



#### Economic, investment and trade

Hyper liberal market policies lead to diversity of available food for urban middle class, leaving rural poor highly insecure.



#### Political /Institutional

Non state actors are the driving force, governments are corrupt, passive and unstable.



**Environmental state, ecosystem function, forest cover, soil health** Environmental health has suffered greatly from lack of policy and there is a scramble for new rural sources of livelihood.



After Palazzo et al, 2016

#### Agriculture productivity

Livestock, crops and aquaculture – Fiercely expansive presence of commercial agricultural.

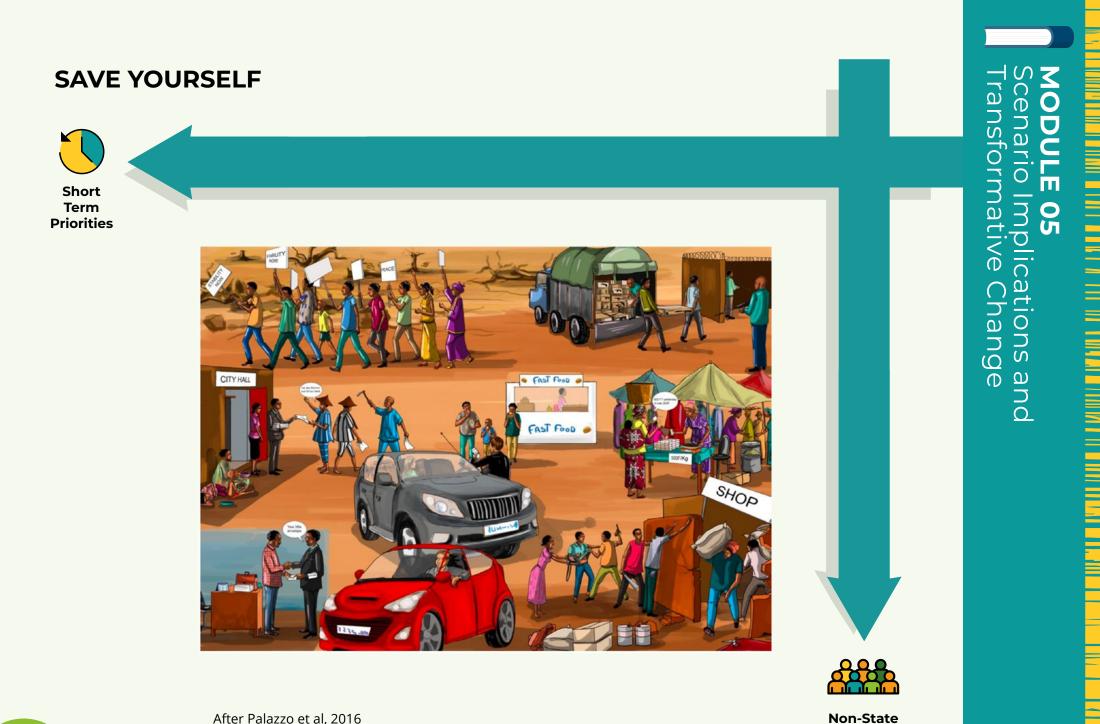




Non-State Actors Dominate

RETURN TO CONTENTS

**MODULE 05** Scenario Implications and Transformative Change



After Palazzo et al, 2016

**RETURN TO CONTENTS** 

**Actors Dominate** 

#### SELF DETERMINATION



State Actors Dominate





**Socio-cultural, education, gender, youth** Investments in education.



#### Economic, investment and trade

Longer term investments and access to markets for rural population, done on a small budget because donor funds decline because of disputes about outside influence



#### Political /Institutional

A slow difficult transition to sustainable governance of food security, environments or livelihoods.



**Environmental state, ecosystem function, forest cover, soil health** Agricultural intensification and extended land use have impacts on water availability and quality produces challenges in the region's development.



After Palazzo et al, 2016

Agriculture productivity

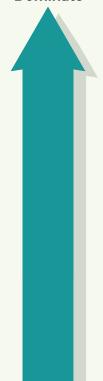
Direct investments in agriculture.

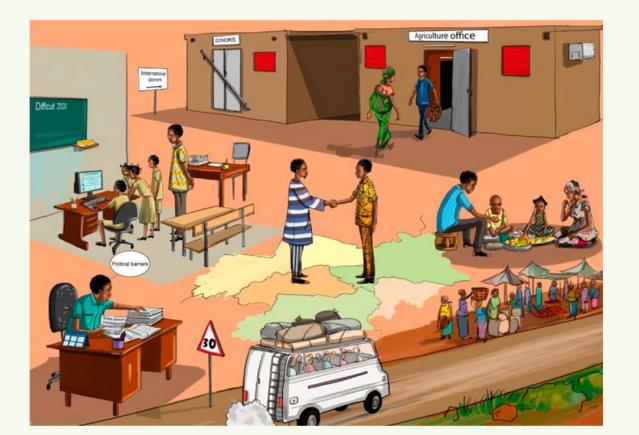


#### **SELF DETERMINATION**



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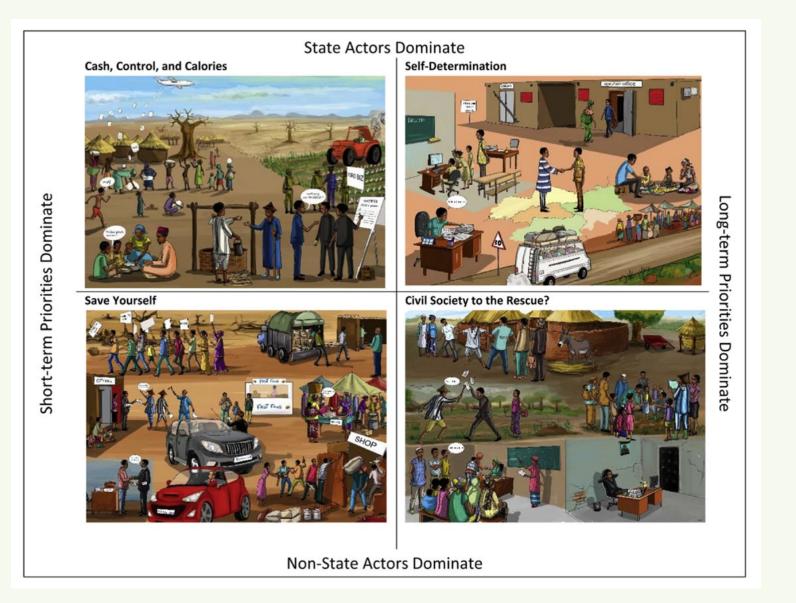
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RETURN TO CONTENTS

# Cartoon representations of the four CCAFS West Africa scenarios along the axes of uncertainty



Source: Drawings by artist Andre Daniel Tapsoba

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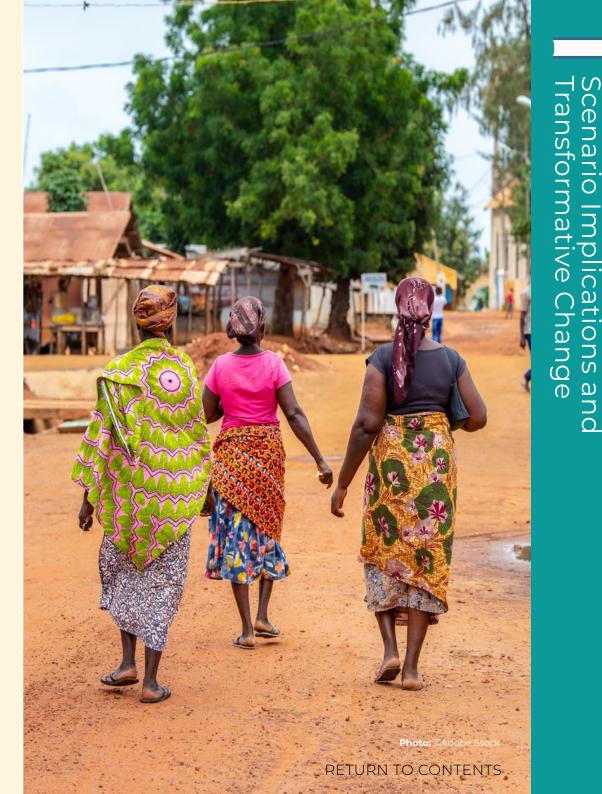


#### REFLECTIONS AND GUIDING QUESTIONS

The reflection stage of the foresight process follows on from the prospection stage described in Module 4.

In this stage it is important to understand the implications of scenarios and to consider elements that allow for transformational change. A key question the sicario method aims to answer is:

What might we want to do differently?



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