

Vulnerability of development sectors to climate change in West Africa :

Challenges, opportunities and approaches for integration into development actions



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Communication objectives

Share ideas and tools for decision support in connection with the management of risks posed by climate change for development in West Africa.

**We will consider two illustrative areas :
food security and water resources**

**characterization of impacts and vulnerabilities
related to climate change
in West Africa**

Climate change is change that will take place over time, with local and regional characteristics

Characterization of Climate Change

In the short and medium term

❑ Increased frequency and intensity of extreme weather events

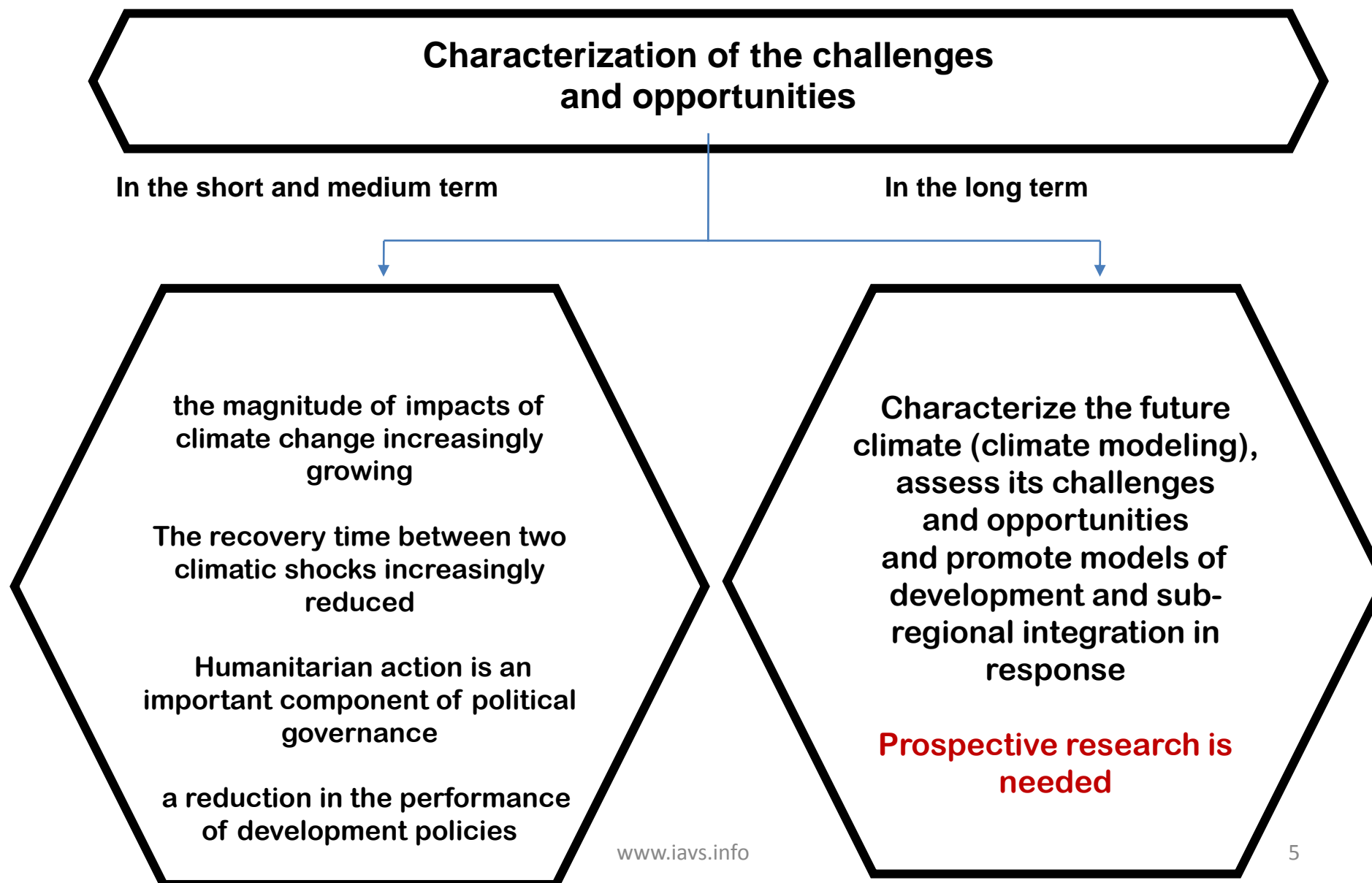
❑ Increase in average temperature, climate variability and mean sea level

In the long term

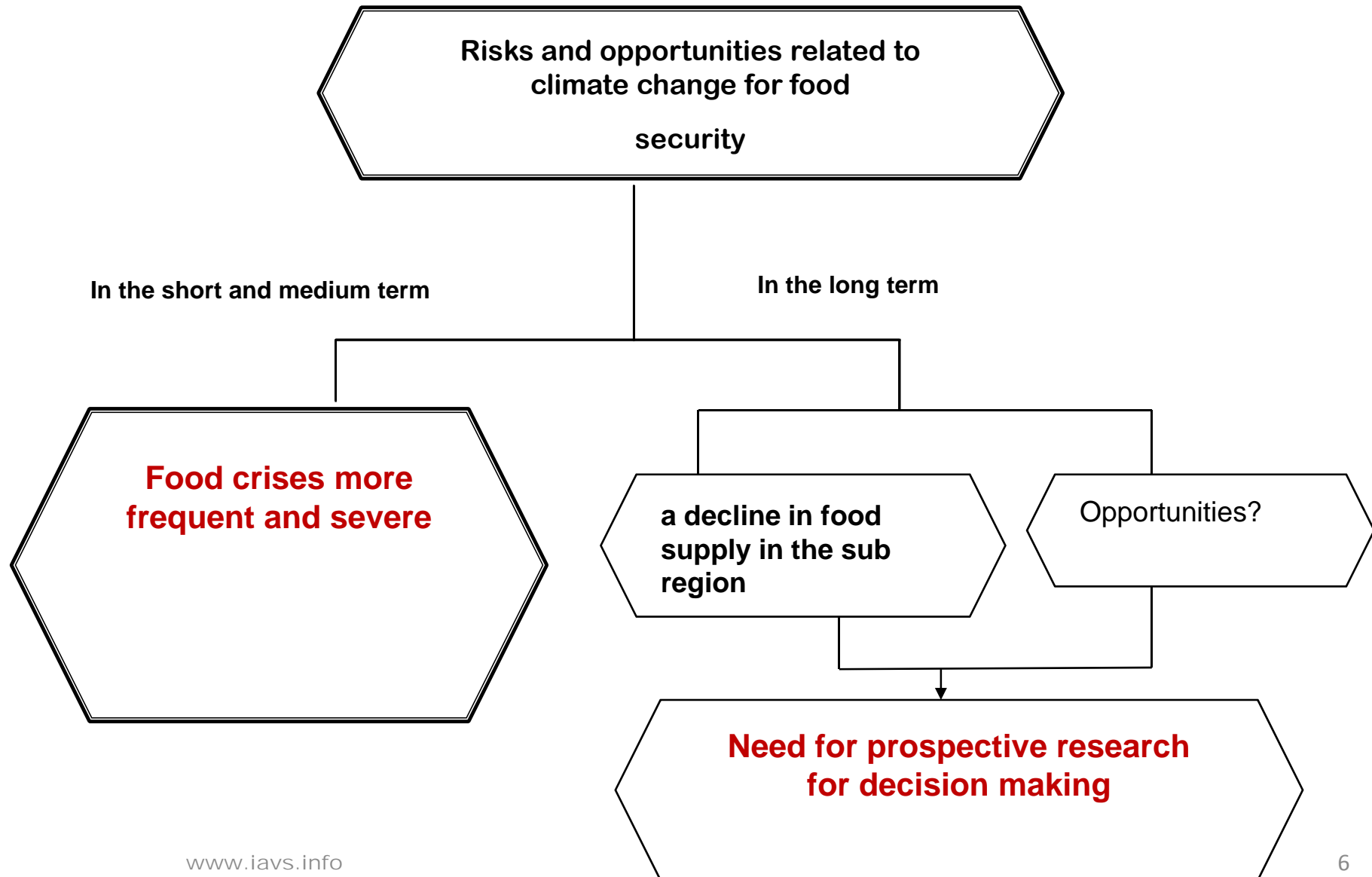
Changes in climate and environment

(What development models promote now in response?)

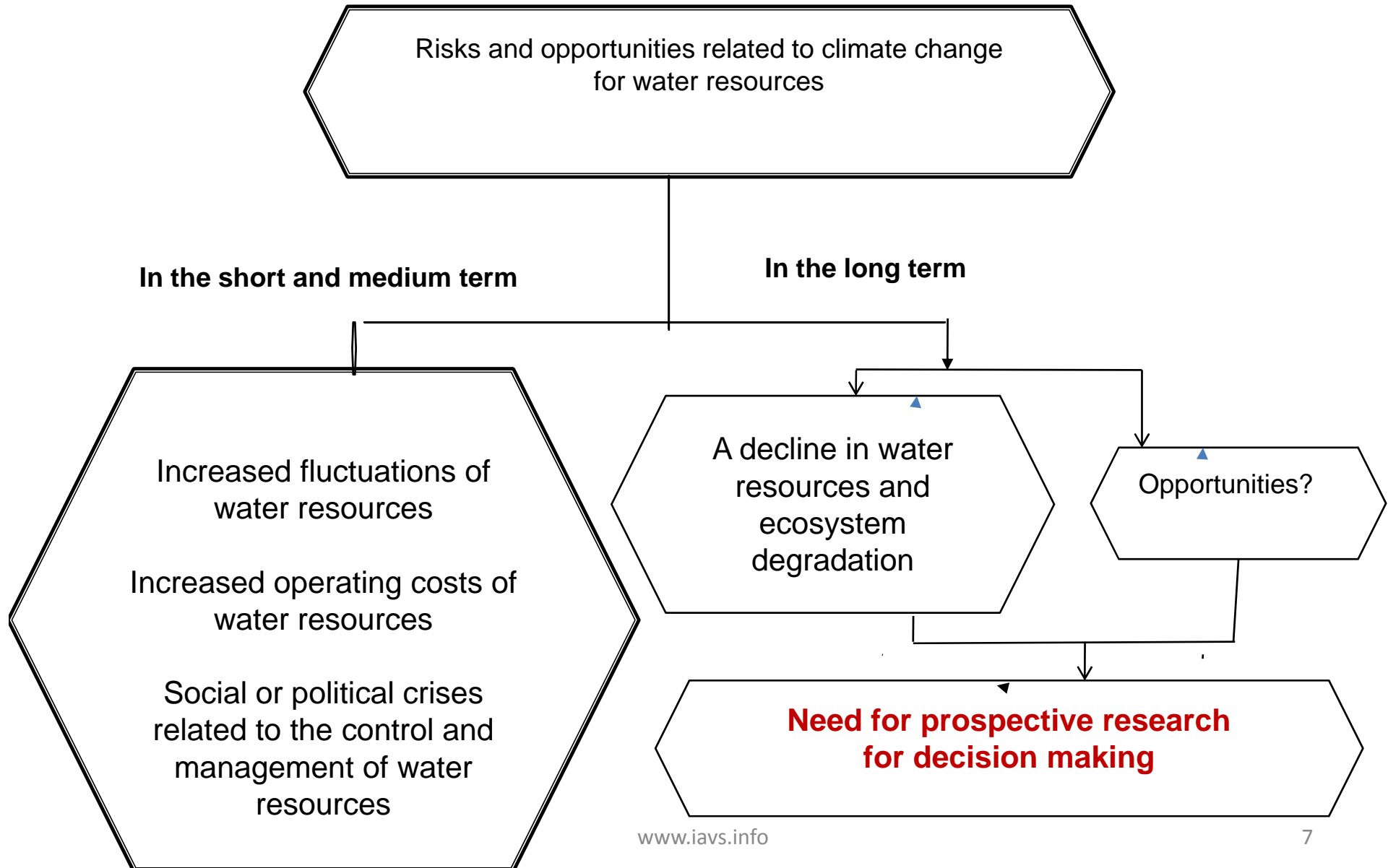
Threats and opportunities related to climate change for development in West Africa



Threats and opportunities for Food Security in Africa West



Threats and opportunities for Water Resources in Africa West



Vulnerabilities to climate change in West Africa

Basic indications

Three factors determine the vulnerability of a system to climate change:

- ☐ the nature of climate changes to which it is exposed;
- ☐ its sensitivity to climate;
- ☐ its ability to adapt to changing climatic conditions

Overview of the vulnerability of West African climate change

The vulnerability of West African climate change include:

Poverty: it is the factor that most limits the ability to adapt to climate change. Countries and peoples of West Africa did not have the resources to develop and implement various options to adapt to climate change;

Sensitivity of key economic sectors to climate: agriculture is mainly rain-fed and strong dependence of populations to natural resources that are fragile (desertification).

Deficit of scientific knowledge: scientific knowledge of the potential effects of climate change is necessary for the implementation of relevant options of adaptation

Access to information and technology: access to information and technologies enhance the adaptive capacity of communities;

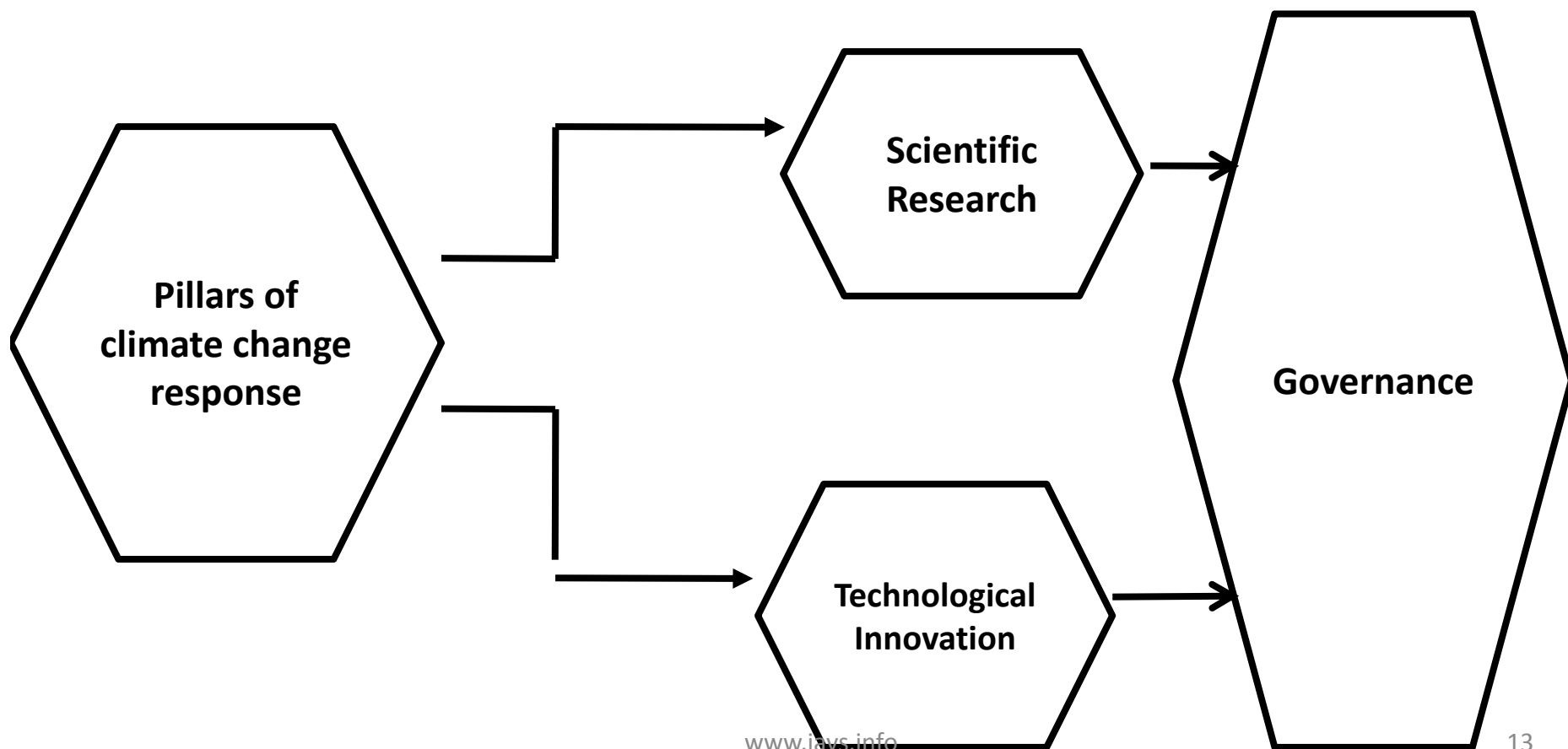
Poor governance: a governance that sustains or maintains poverty creates vulnerability to climate change

Vulnerabilities at the community level

At the community level, vulnerability factors include:

- **poverty**
- **sources of income that are not diversified and climate-sensitive;**
- **a high dependence on natural resources;**
- **limited access to basic services;**
- **geographical isolation;**
- **a low level of education among the population;**

Pillars of climate change response



Scientific research directions for decision support in West Africa

Lines of research could be:

- **the rate and magnitude of climate change;**
- **impacts and vulnerabilities related to climate change;**
- **the social and economic consequences of climate change;**
- **development of scenarios for increasing resilience to climate change;**
- **methodologies for taking into account considerations related to climate change into development policies;**

Technological developments and innovations

Increase access to technology for solutions to climate risks, especially at local level (agriculture, water resources, livestock, housing, ...)

Governance

Ensure that an indicator of good governance is taken into account considerations related to climate change in development programs

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Scenario for the establishment of the pillars of adaptation Climate Change in West Africa

Pillars	Actions to implement	Instruments
Scientific Research	Promote research on climate change in universities and research centers , implement a strategic research agenda on climate change in West Africa, create a journal on Climate Change in West Africa	A research fund for universities and research centers; scholarships, Develop partnerships with international centers
technological development	Same	Same
Governance	Dialogue with policy makers	Scenarios of climate change impacts

Example of scenarios to promote dialogue

Case of food security

To contribute to the debate on the future of food security in West Africa, our institute uses three scenarios of climate change and food security. A scenario is a description of a possible future, among many others.

The climate change scenarios:

Scenario S1: a radical and negative climate change at regional and local level

Scenario S2: a changing climate characterized by an increase in temperature, frequency and intensity of climatic shocks

Scenario S3: a changing climate that is characterized by a return to favorable climatic conditions

Food security scenarios in West Africa

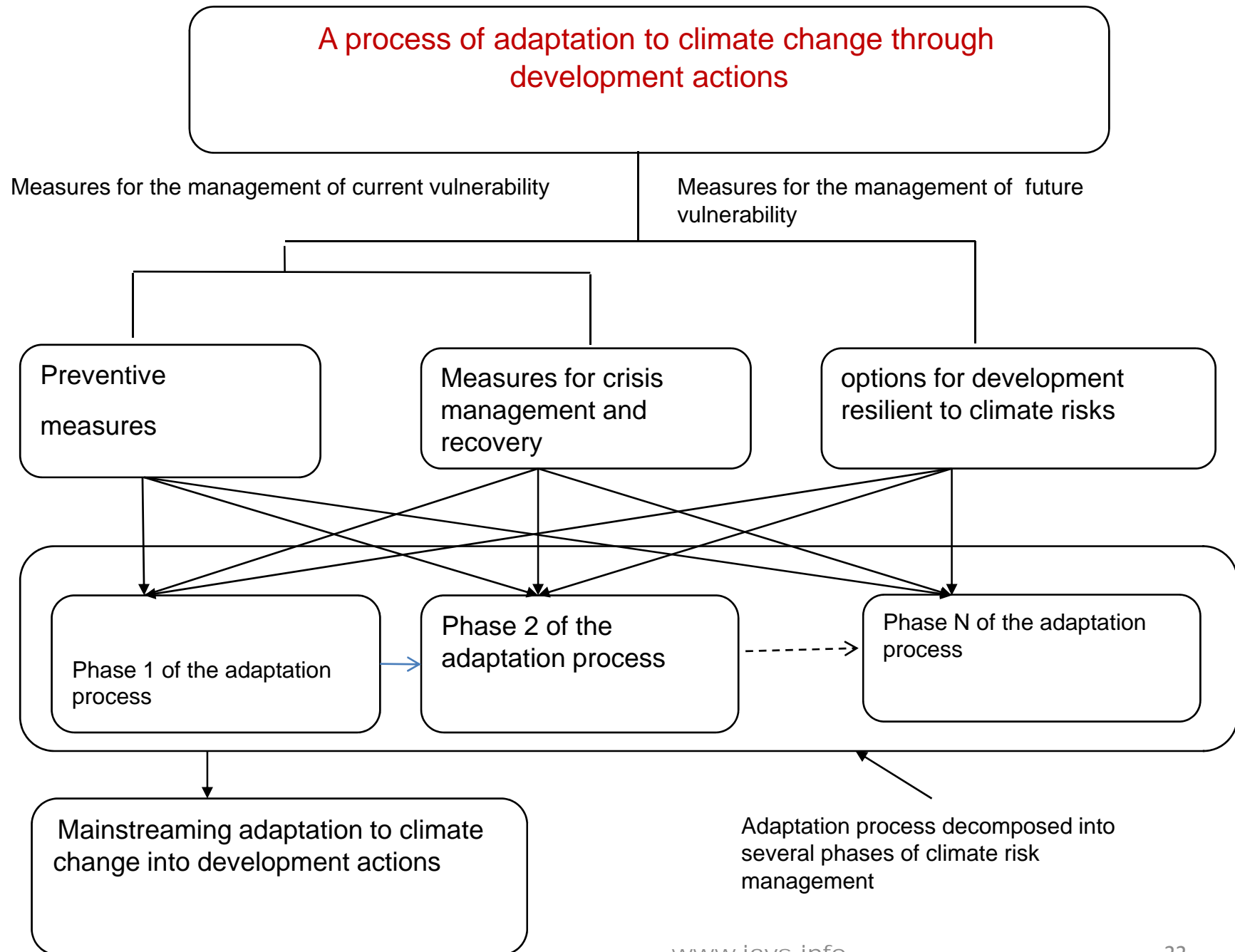
Climate change scenarios	Food Security scenarios	What models of food security to promote in response
Scenario S1	decline in food supply : a sub-region highly dependent on food aid	
Scenario S2	Disarray : a sub-region which is facing recurrent food crises	
Scenario S3	Abundance : an abundance of food in the region	

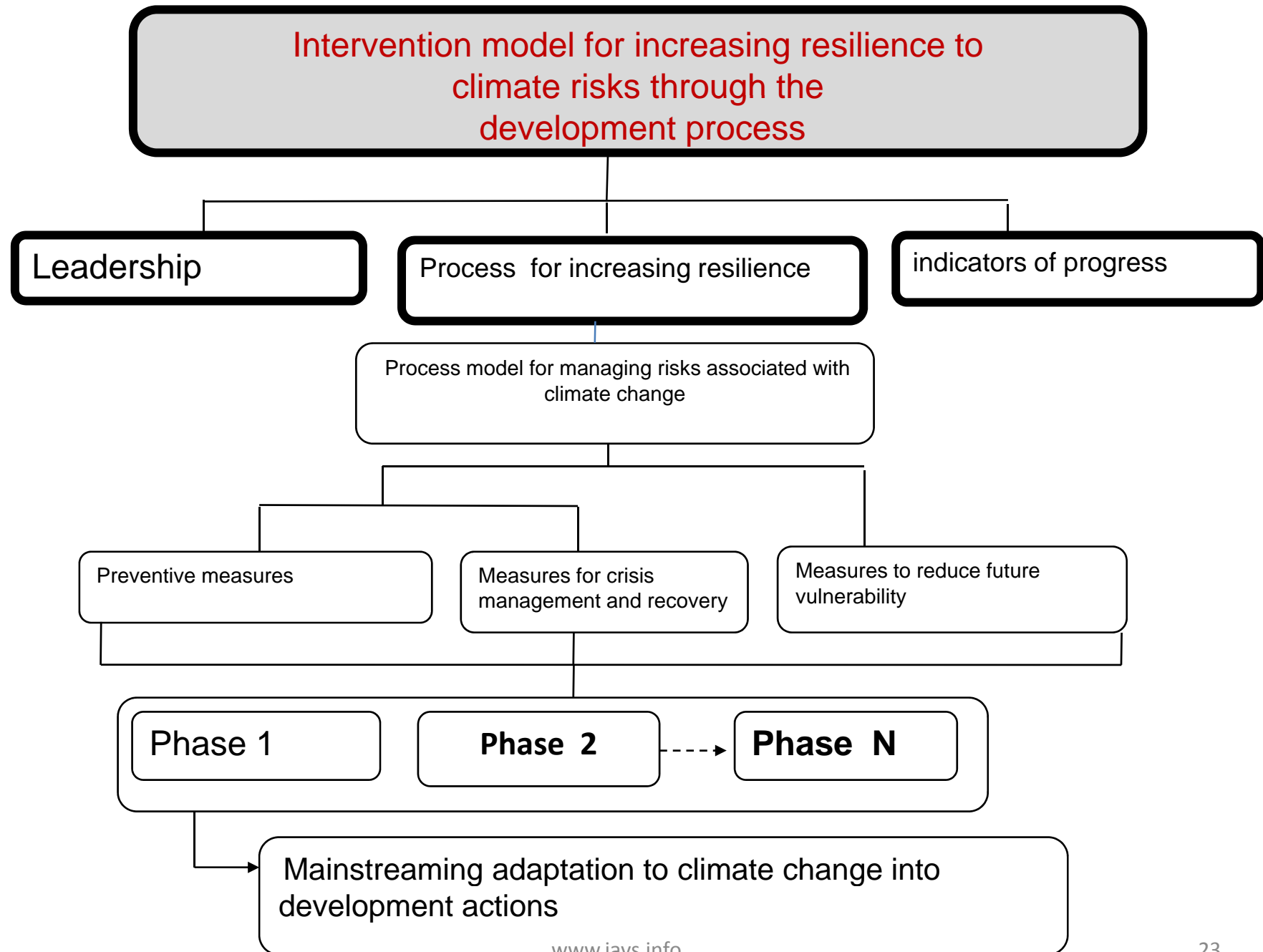
Intervention models for reducing vulnerability to climate risks through the development process

ClimProspect model

Our institute has developed model for managing climate risk through the development process (ClimProspect).

This model takes into account the current and future vulnerability to climate risks





Building options for reducing the vulnerability on the strengths and weaknesses of the region				
	Forces in the region	Weaknesses in the region	External opportunities	External Threats
Process of increasing resilience to climate risks in West Africa	?	?	?	?