

Regional NAP Expo 2023

SESSION 2.2 Transformation in key systems: Agri-food systems resilience in NAPs

28 August 2023

Songdo, Korea

Organised by FAO and the CRFS Alliance



Food and Agriculture Organization
of the United Nations



NAP expo



Food and Agriculture Organization
of the United Nations



Opening and Introduction

Food and Agriculture Organization

Session Objective

To provide a space to **learn** about **experiences** to date with **adaptation** in the **agriculture and fisheries** sectors in the region, future adaptation **priorities** in these sectors and **how** the **NAP** can be used as a framework to **scale-up** effective, **sector-specific adaptation**



Food and Agriculture Organization
of the United Nations





Session overview

16:00 - 16:05	Opening and Introduction
16:05 - 16:15	Context: agrifood systems and food security and nutrition in Asia-Pacific and LEG Supplementary Guidelines for agriculture and NAPs
16:15 - 16:25	Climate-Resilient Food Systems Alliance (CRFS): Overview of the Alliance, activities and approaches
16:25 - 17:05	Examples of and approaches to building agri-food systems resilience through NAPs by countries and CRFS Alliance members
17:05 - 17:25	Audience Q&A
17:25 - 17:30	Wrap up and closing



Beau Damen

Food and Agriculture Organization

Julia Weatherhogg

UNFCCC Secretariat

Ms. Shagdarsuren Tserensulam

Ministry of Environment and Tourism, Mongolia

Mr. Sanjeev Karn

MoALD, Nepal

Ms. Marissa Cook

Dep. for Environmental Management & Agriculture, Nauru

Mr. Am Phirum

Ministry of Agriculture, Forestry and Fisheries, Cambodia

Ms. Jessica Troni

United Nations Environment Programme

Mr. Gabriel Boc

Green Climate Fund



Food and Agriculture Organization
of the United Nations



Integrating Agriculture & Fisheries into the NAP process

**Supplementary Guidelines for Addressing Agriculture, Forestry and
Fisheries in National Adaptation Plans**

Beau Damen

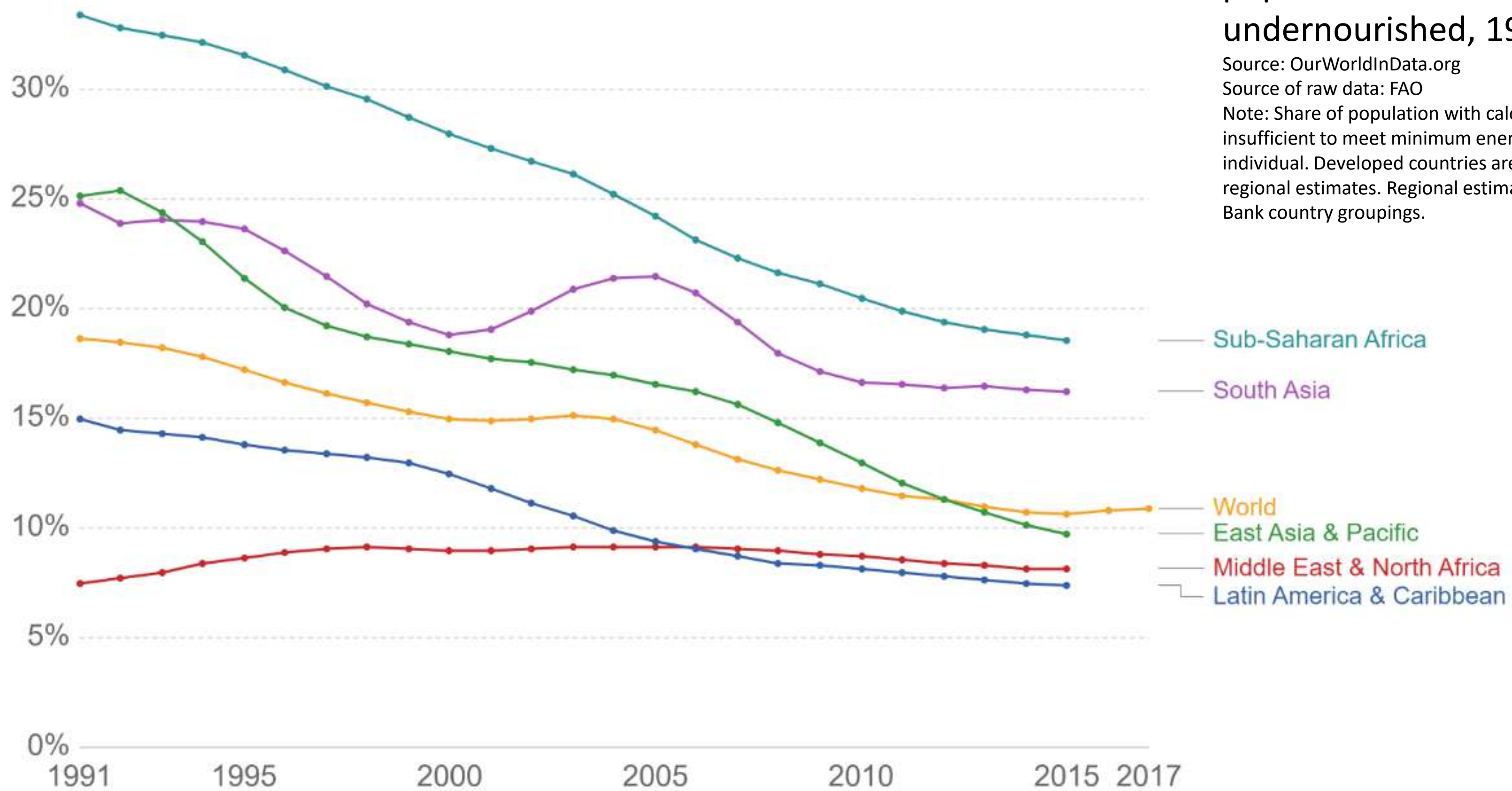
Food and Agriculture Organization

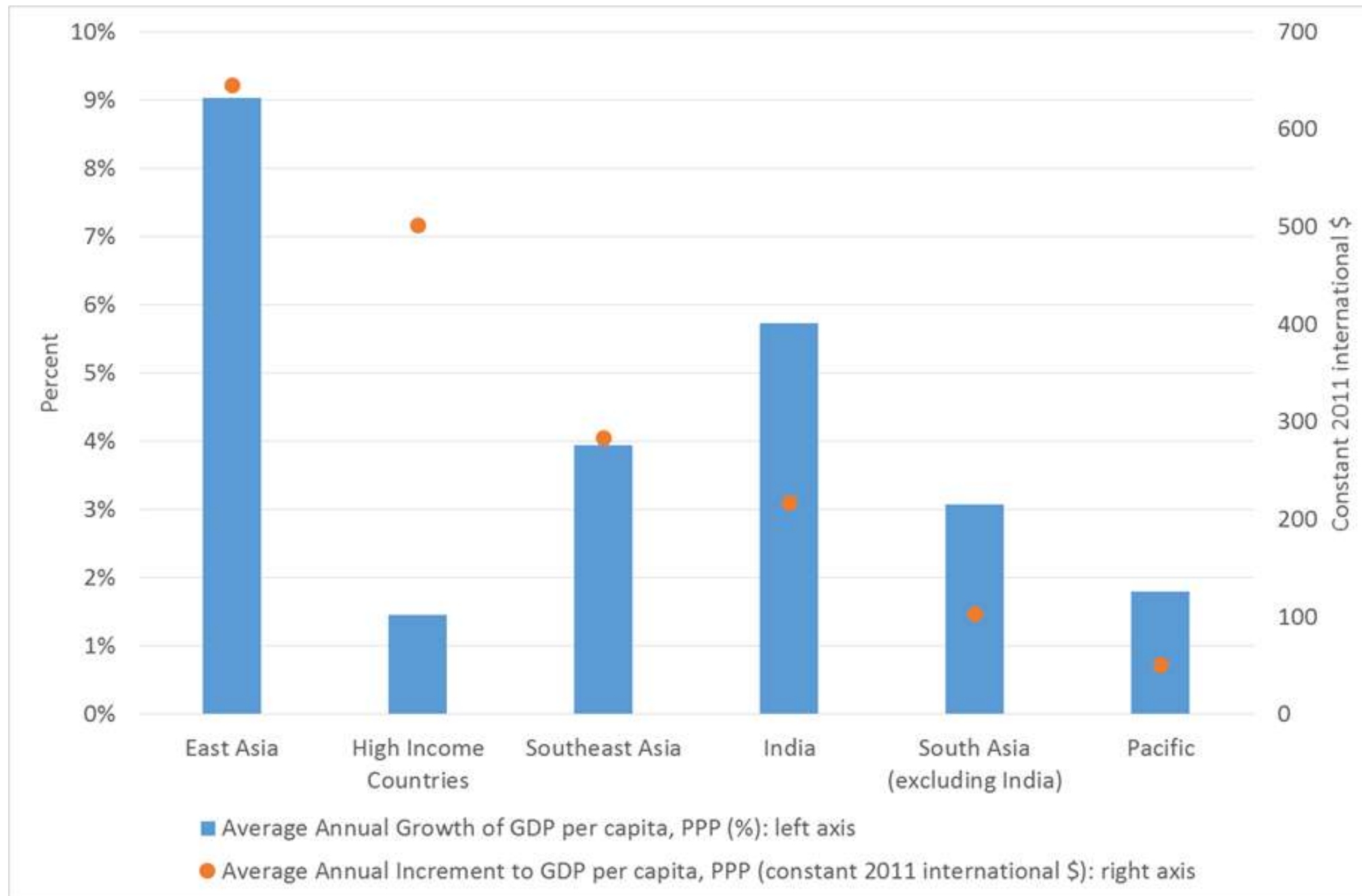
Figure – Share of the population that is undernourished, 1991-2017

Source: OurWorldInData.org

Source of raw data: FAO

Note: Share of population with caloric intake that is insufficient to meet minimum energy requirements for an individual. Developed countries are not included in regional estimates. Regional estimates based on World Bank country groupings.





- Strong development outcome achieved through **income growth**
- A **key** factor was that economic **benefits** were **channeled**, in part, **to the poor**
- Improved **agricultural productivity** was a core **driver**
- Gains were unlocked through **investment** in R&D, extension, infrastructure as well as key **policy** and **institutional** changes

Figure - Absolute and percentage growth in GDP (PPP) per capita by sub-region, 2000 – 2015

Source: The World Bank Group (2018)

..... what are the implications of current agrifood system trends for climate change and food security

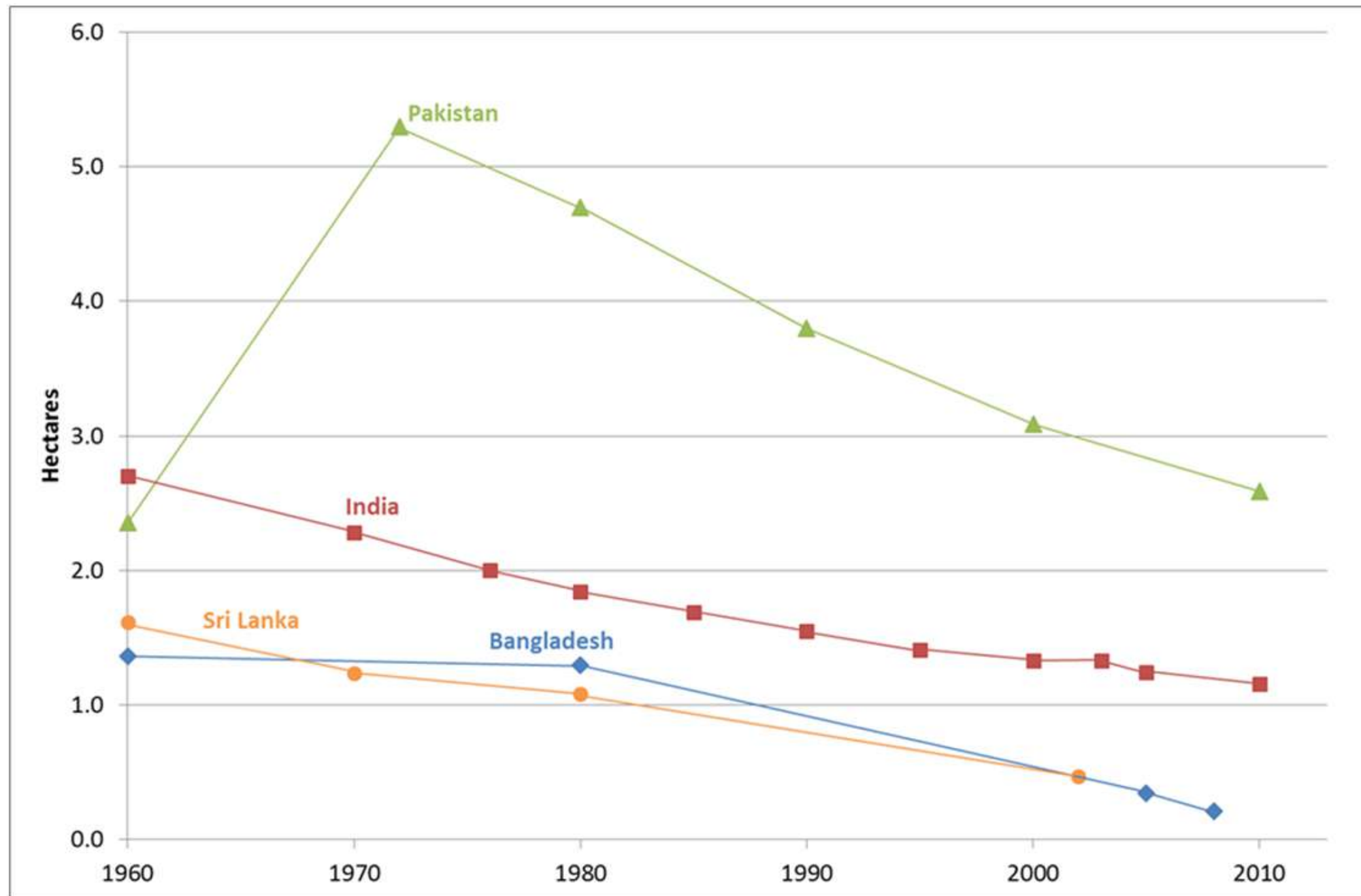
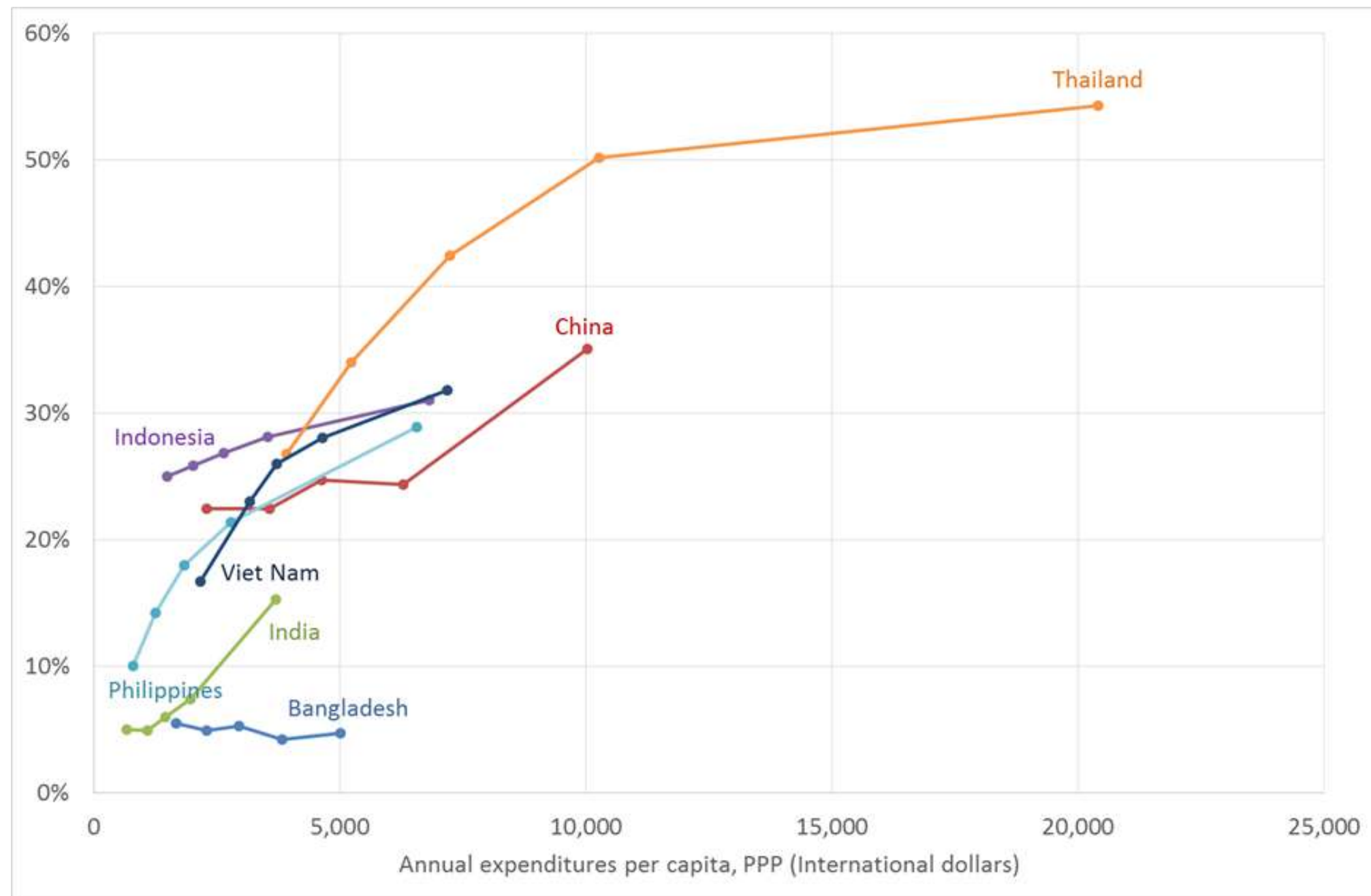


Figure – Trends in farm size in South Asia

Source of raw data: Agriculture census data

Note: Agricultural censuses define farm size as the farm area operated, not owned. Thus, these data take into account the fact that some farmers rent in (and rent out) land

- **Farm sizes are decreasing and urbanization is intensifying;** particularly in small and medium sized towns
- **Non-farm income** is a crucial and growing component of rural livelihoods
- **Urban centers** are not just consumers but are **key actors** in the **food value chain** and **investors** in rural areas
- **Trade** in commodities based on **consumer preferences in urban areas** key driver of natural resource depletion



- Growth, yes, but growing **inequality also**
- **Trends in consumption of animal products, oils, fats, wheat likely to intensify** into the future to meet new demand
- **Poor nutrition & micronutrient deficiencies persist**
- Diet related **NCDs** are now largest health and mortality **risk**
- **Gains** in addressing **undernourishment stagnating**

Figure – Percentage of total food expenditures spent on food prepared away from home in urban areas, expenditure quintiles

Source of raw data is various household surveys: Bangladesh (2010), China (2009/10), India (2011/12), Indonesia (2014), Philippines (2012), Thailand (2015), Viet Nam (2014).

Note: Horizontal axis is in purchasing power parity (PPP) terms.

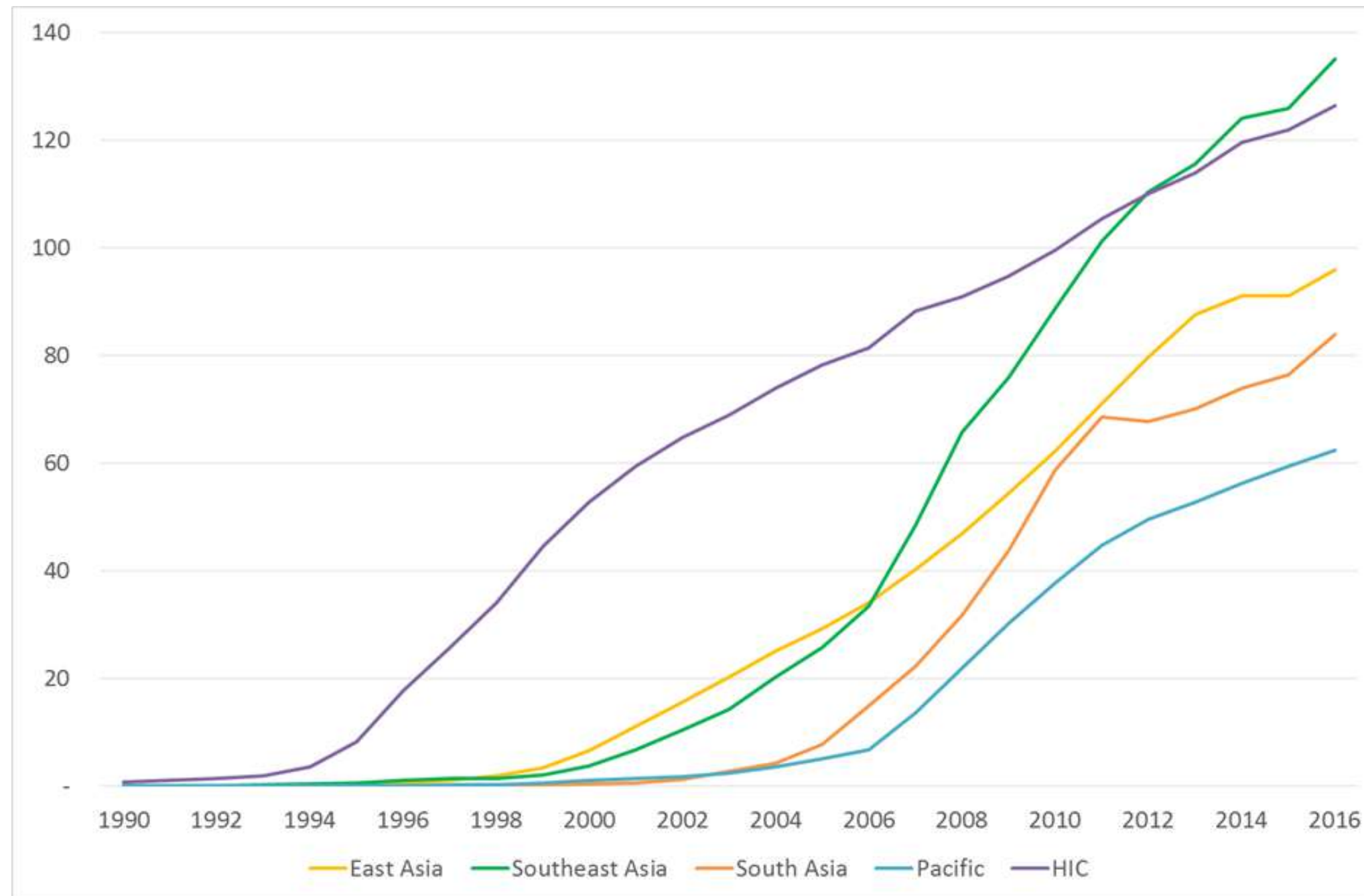


Figure –Number of mobile telephone subscriptions per 100 people by sub-region, 1990 - 2016

Source of raw data: The World Bank Group (2018)

- **Mechanization** is spreading
- New opportunities for integration of **ICT & other technologies**
- **Efforts to strengthen R&D, farmers access to finance, agricultural & rural infrastructure and environmental standards** could bring benefits in terms of productivity and sustainability

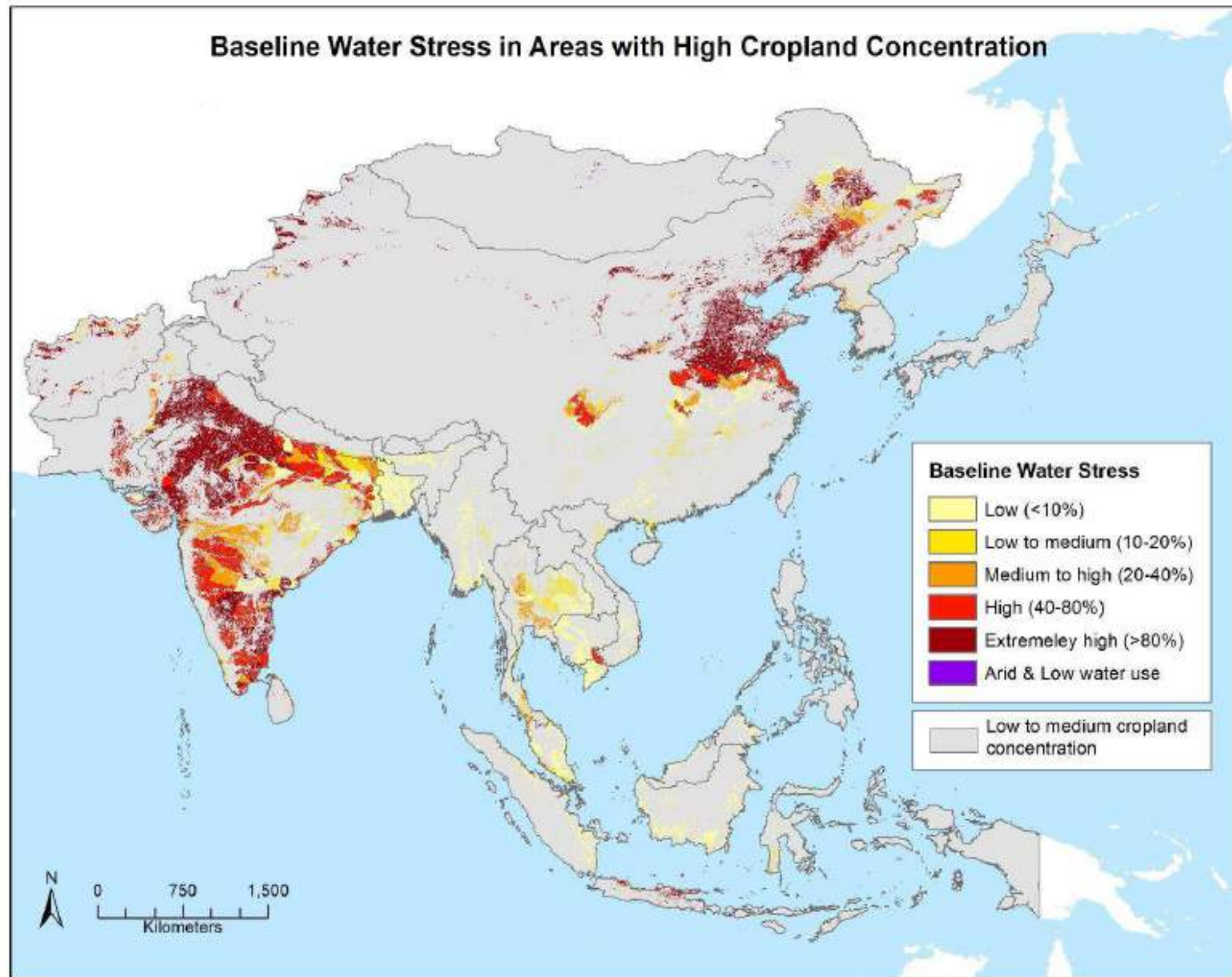


Figure - Water stress in areas of high cropland concentration

Source: IWMI.

Note: Water stress in areas of high cropland concentration derived from baseline water stress data (WRI Aqueduct, 2014) and cropland concentration > 90%

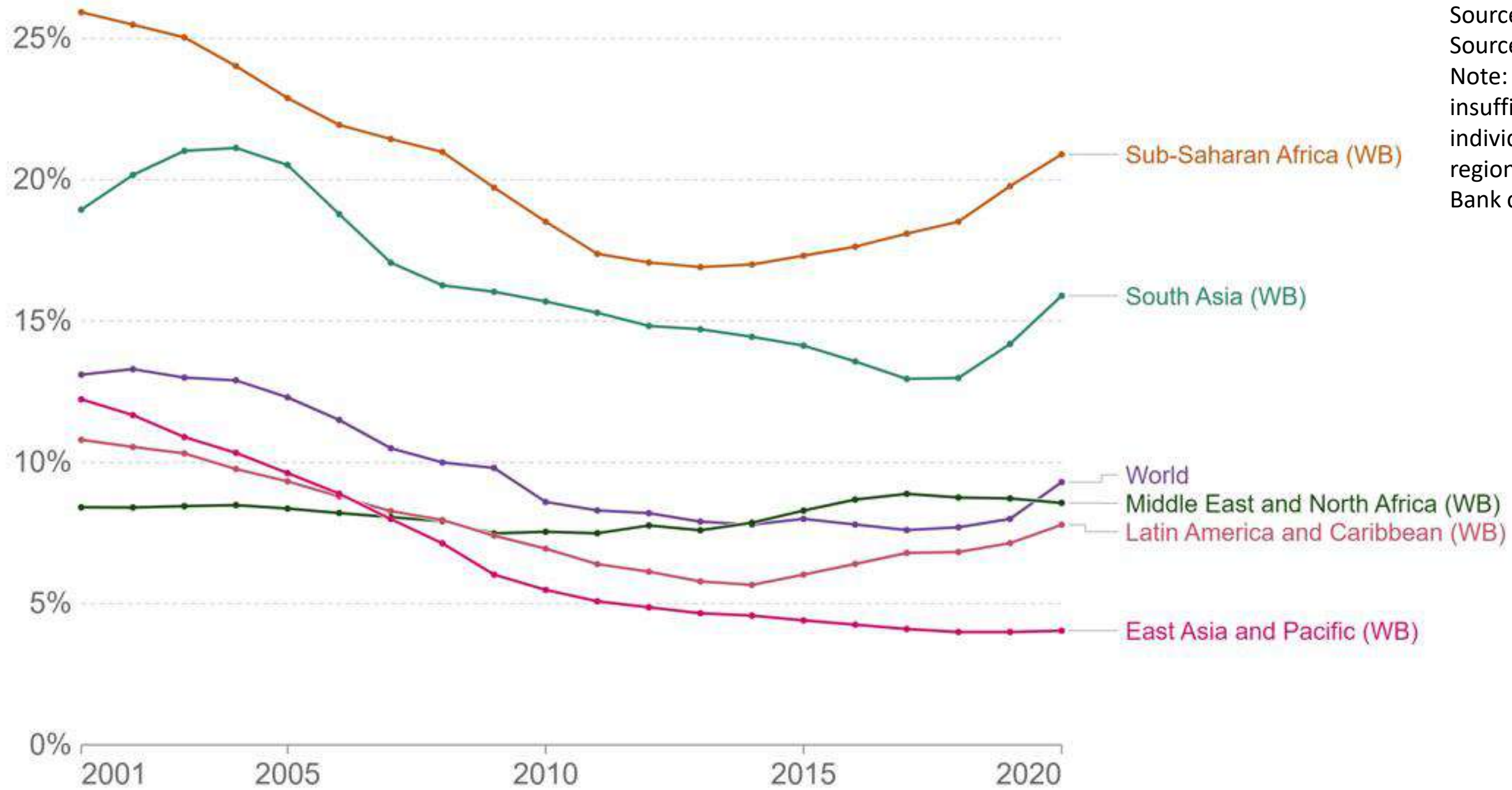
- Agriood system **policies** still **focused** largely on **production**
- Production-centered model has led to:
 - **Water stress** and scarcity
 - **Degradation** of natural systems and biodiversity loss
 - **Pollution** including GHG emissions
 - **Weakness to shocks** highlighted by the COVID-19 pandemic & Ukraine crisis
 - **Vulnerability** and risk from extreme events and climate change

Figure – Share of the population that is undernourished, 2001-2020

Source: OurWorldInData.org

Source of raw data: FAO

Note: Share of population with caloric intake that is insufficient to meet minimum energy requirements for an individual. Developed countries are not included in regional estimates. Regional estimates based on World Bank country groupings.



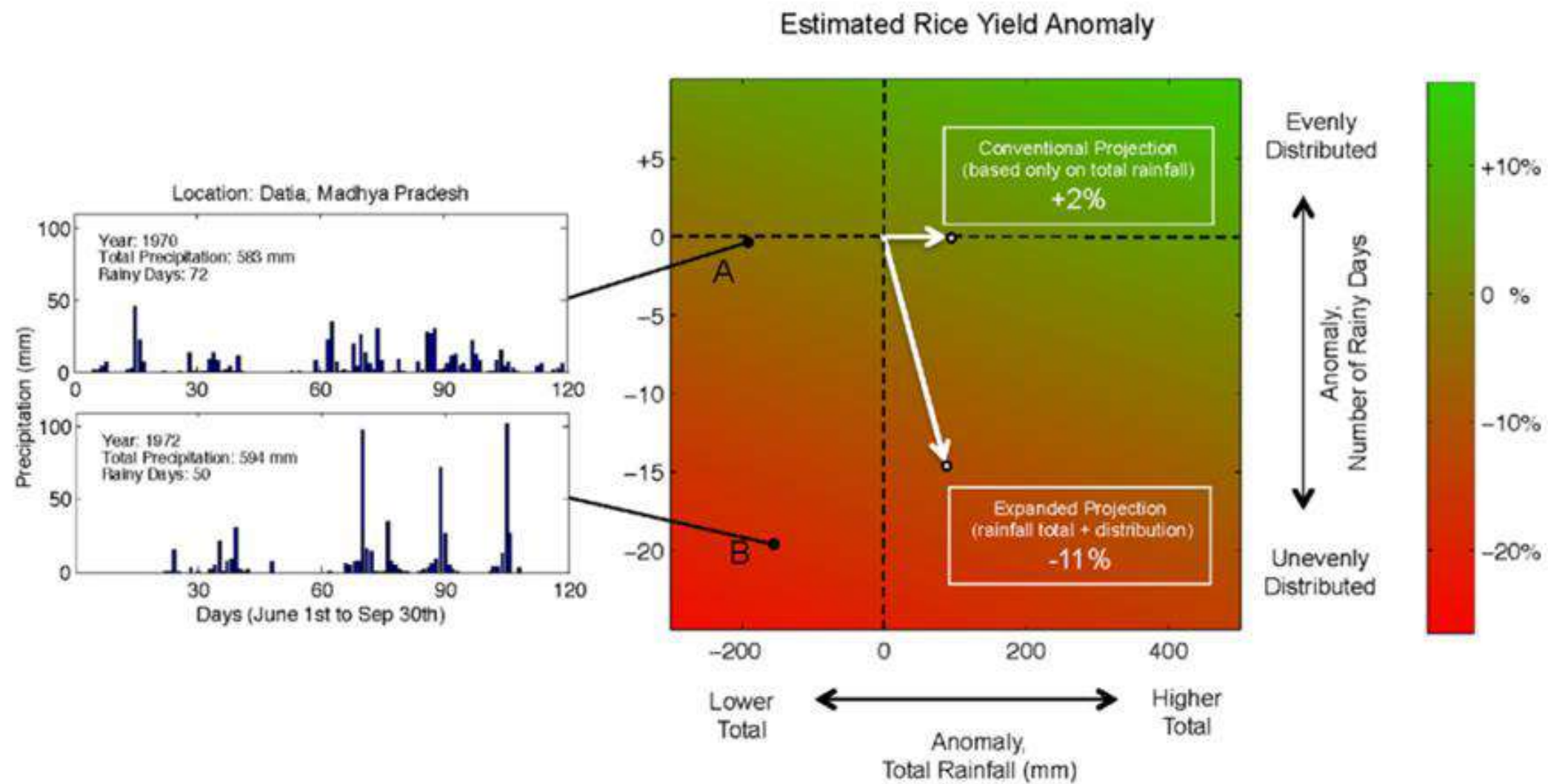
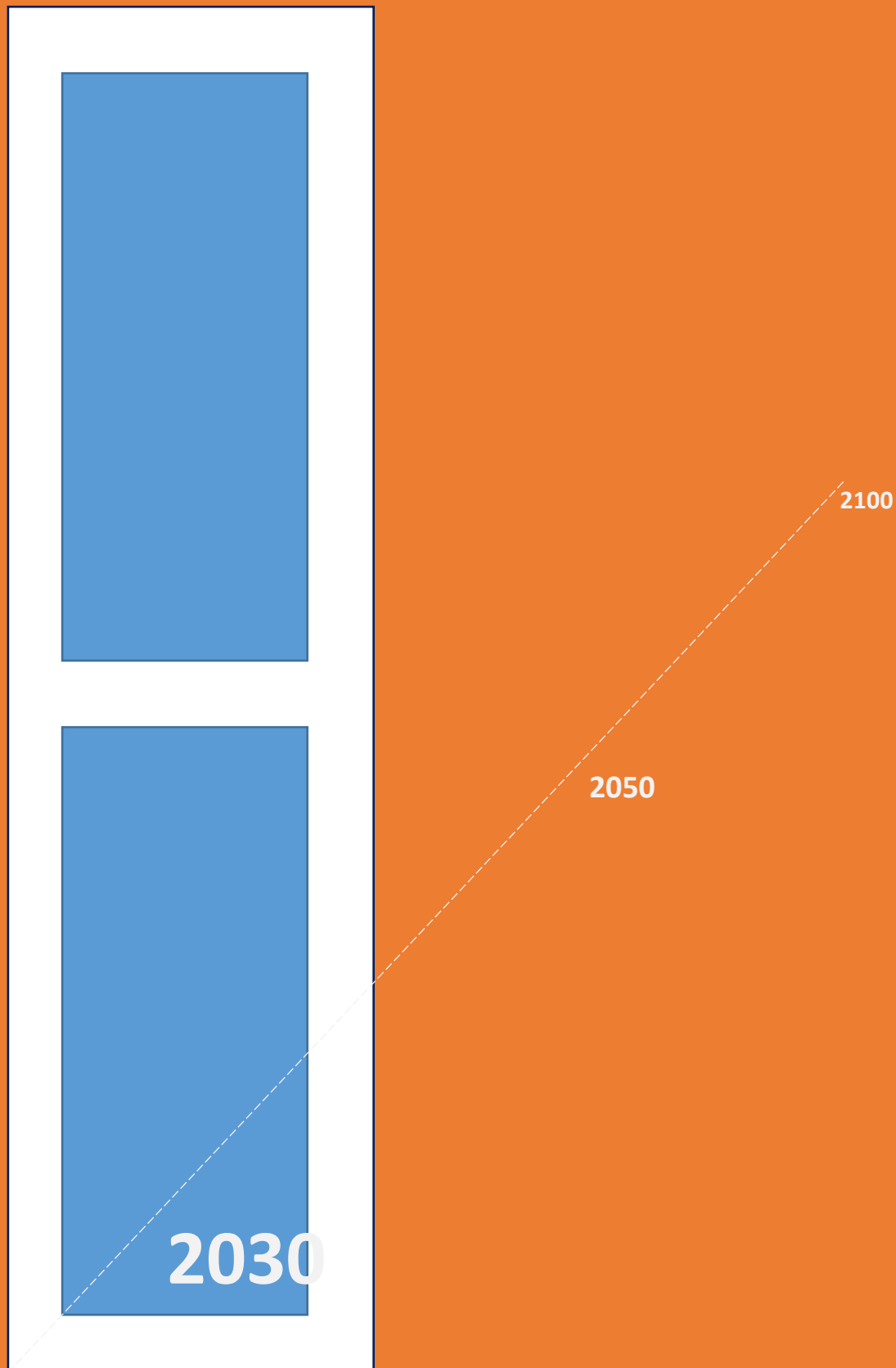


Figure – Illustration of the observed and projected impact of intra-seasonal variability in precipitation on rice yields in Madhya Pradesh, India (1970 and 1972)

Source: Fishman, 2016

- **Climate impact drivers** of importance to agrifood systems have already **changed** or are **changing** compared to past climate conditions
- **System-wide impacts** of such changes could have been **significant** – reducing agricultural productivity by almost 20 per cent between 1961 and 2020
- **Past investments** in agricultural R&D were **crucial** in offsetting larger negative impacts
- **Early investment** is **required** to ensure that agrifood systems can withstand future shocks



- **Narrow window for action** corresponds with the commitment period of the **Paris Agreement**
- Building policy and investment decisions around **guiding principles** or target outcomes such as – agroecology, CSA and others - can provide a consistent basis for climate action now and in the future
- **Policies and measures** consistent with these approaches **have been identified in country NDCs, NAPs, Disaster Risk Reduction plans** and implemented with the support of partners



Example policies and measures to support action

Types of policy or measure	Selected Examples	FAO Support
Multi-stakeholder and sector partnerships	<ul style="list-style-type: none"> • ASEAN Climate Resilience Network 	<ul style="list-style-type: none"> • Support for regional dialogue, technical guidance and resource mobilization
Innovative research, evidence-based analyses and technologies	<ul style="list-style-type: none"> • Climate foresight and scenario analysis • Paris Agreement Transparency • Ecosystem and community-based adaptation in fisheries 	<ul style="list-style-type: none"> • Support to develop and apply integrated modelling tools and capacity building • GEF-supported CBIT projects in 9 countries • GEF and other donor supported projects in 10+ countries
Market-based measures and leveraging public investment	<ul style="list-style-type: none"> • Sustainable Rice value chains • REDD+ results-based payments 	<ul style="list-style-type: none"> • GEF-supported projects in 7 countries • Regional programs on REDD+ & FLEGT
Experiences with COVID-19 response and green recovery	<ul style="list-style-type: none"> • Nature-Based Solutions 	<ul style="list-style-type: none"> • Development of sector specific NBS approaches deployed in field projects

NAP-Ag Guidelines

Supplementary Guidelines for Addressing Agriculture, Forestry and Fisheries in National Adaptation Plans



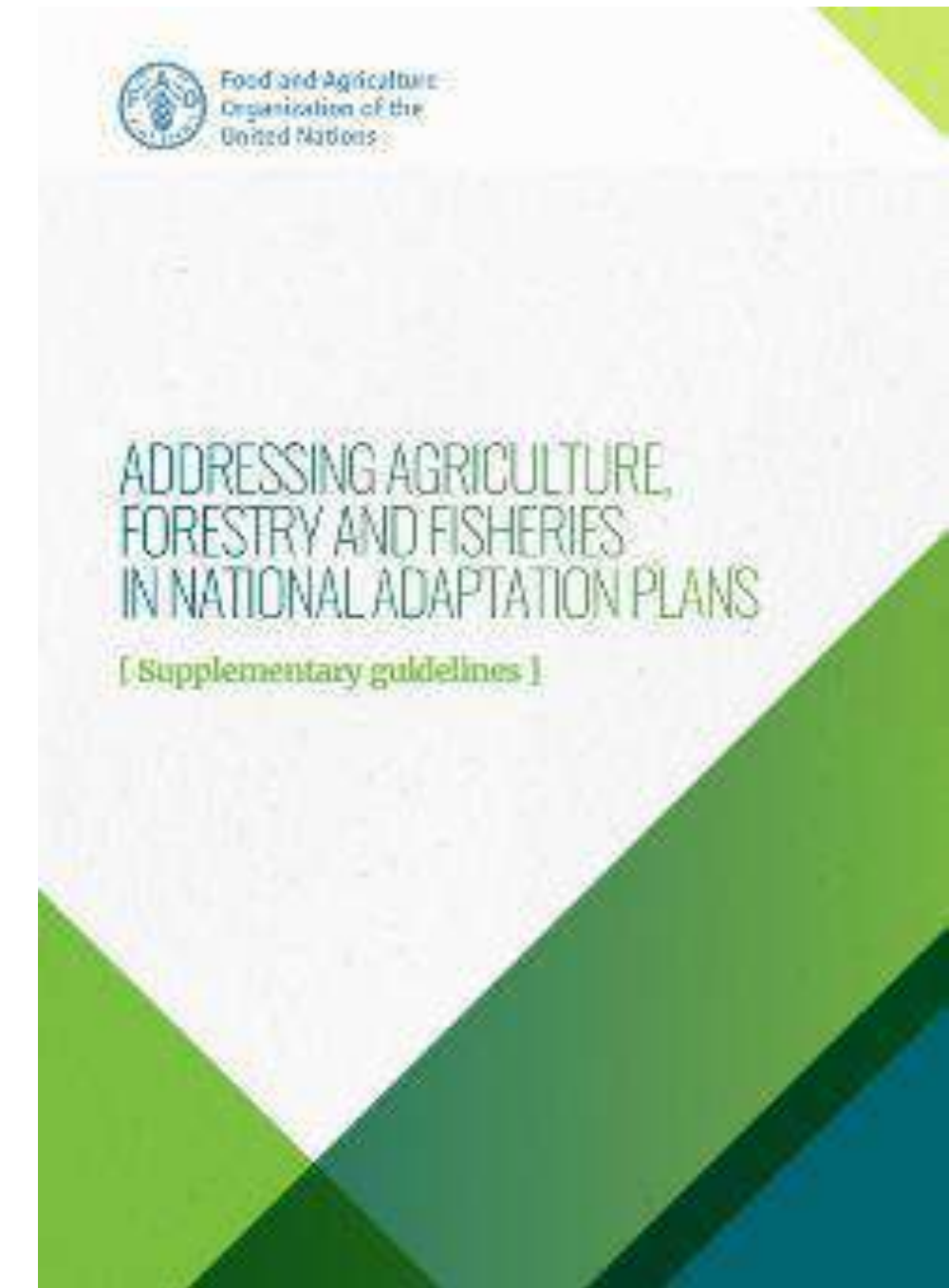
Highlight the agriculture sector-specific aspects in the process to formulate and implement NAPs



Mainstream adaptation in agriculture sector policies, plans and programmes



Support countries' efforts to reduce the agriculture sectors vulnerability to the impacts of climate change



Target groups

1

Non-Ag Specialists

National planners
and decision makers
working on climate
change

2

Ag Specialists

Authorities and
experts of the
agriculture sectors

UNFCCC NAP Technical Guidelines (2012)

A

- Lay the Groundwork and Address the Gaps

B

- Preparatory Elements

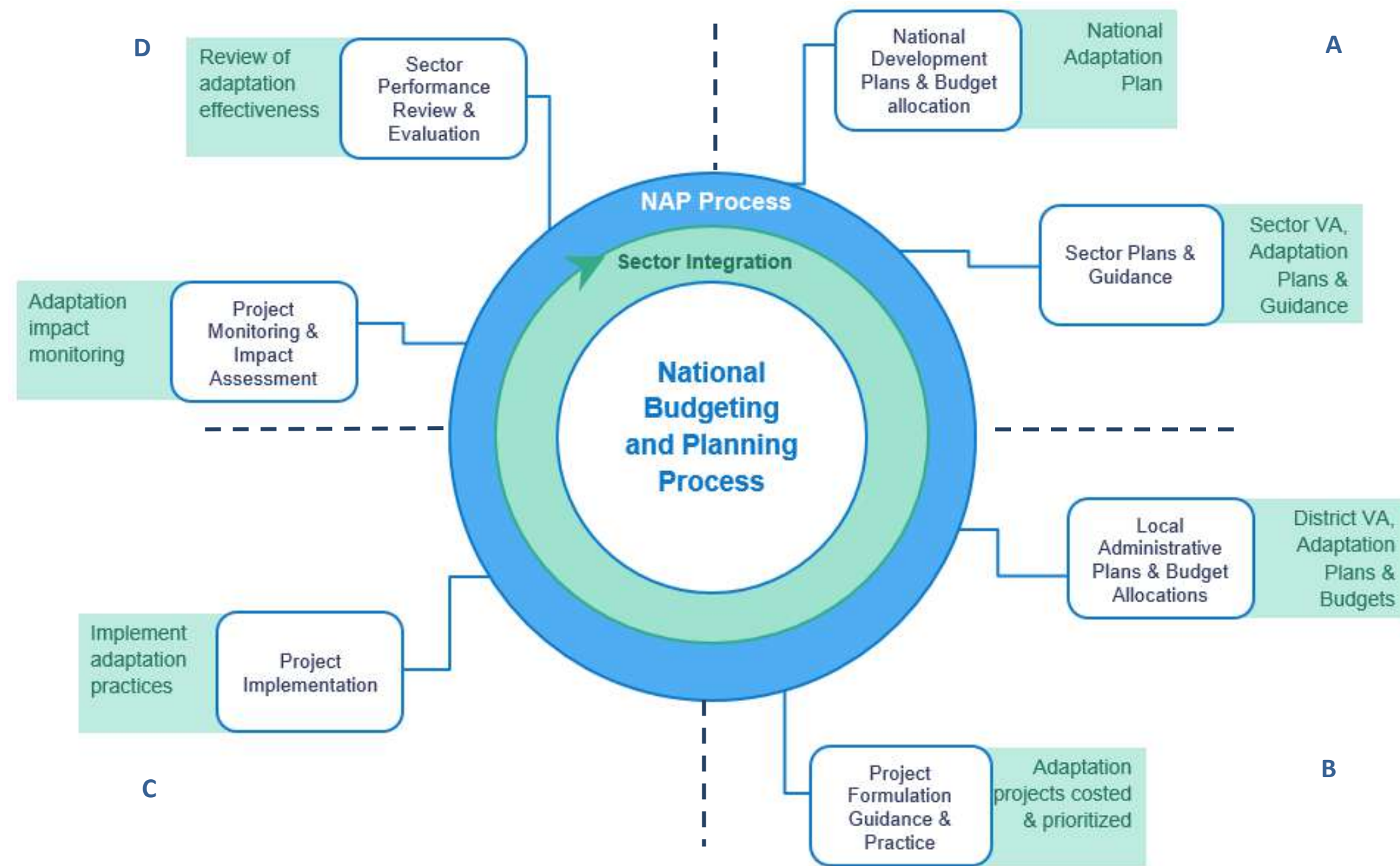
C

- Develop Implementation Strategies

D

- Monitoring, Reporting and Review of the process





- NAP provides the **framework** to for **integrating sector adaptation plans**
- Adaptation planning should be fully **integrated** with broader national budgeting and planning processes

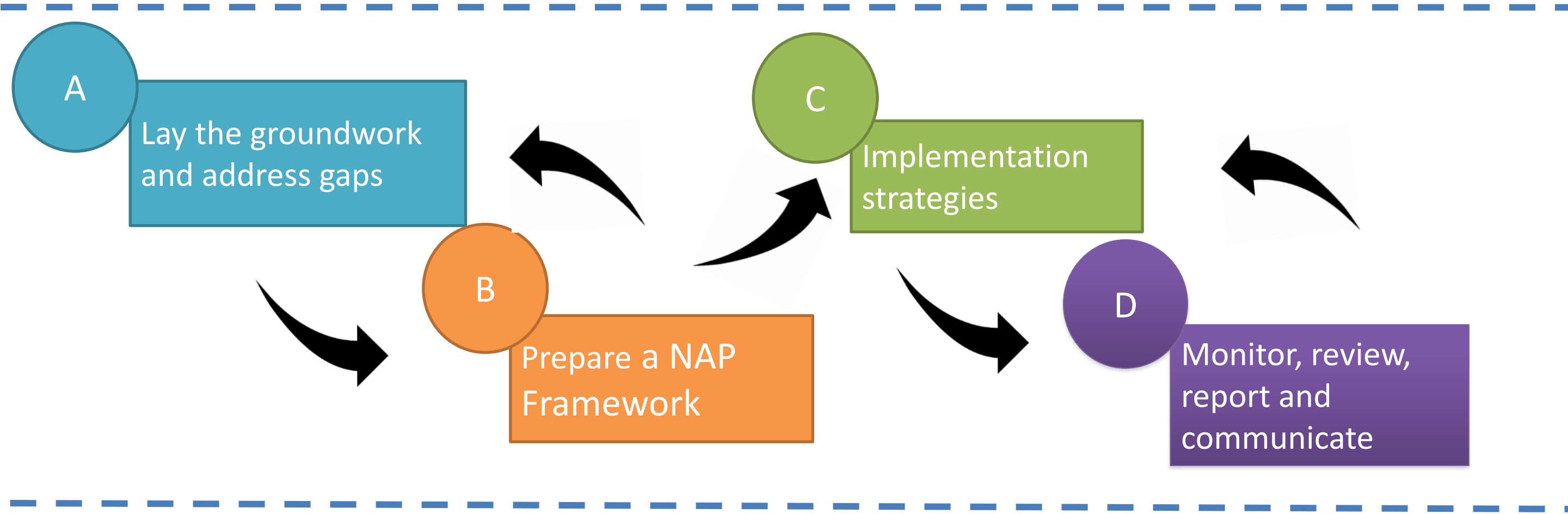
Sector integration into the NAP



- This NAP Agriculture guidelines consists of **four elements**
- The **process** can be **mapped** against the **NAP LEG Guidelines elements**

Sector integration into the NAP

Overview



NAP-Ag Guidelines

A

Lay the groundwork and address gaps

Ensure and facilitate the appropriate involvement of relevant stakeholders from the various agriculture sectors in the process to formulate and implement NAPs

1. Initiating and launching

- Has the process to formulate and implement NAP started at the national level?
- Key Ag sectors aware of the process?
- What are Ag sector challenges?

2. Stocktaking

- What are existing key strategies links to climate change and the Ag sectors?
- Who are the stakeholders in climate change and Ag issues?

3. Addressing gaps and weaknesses

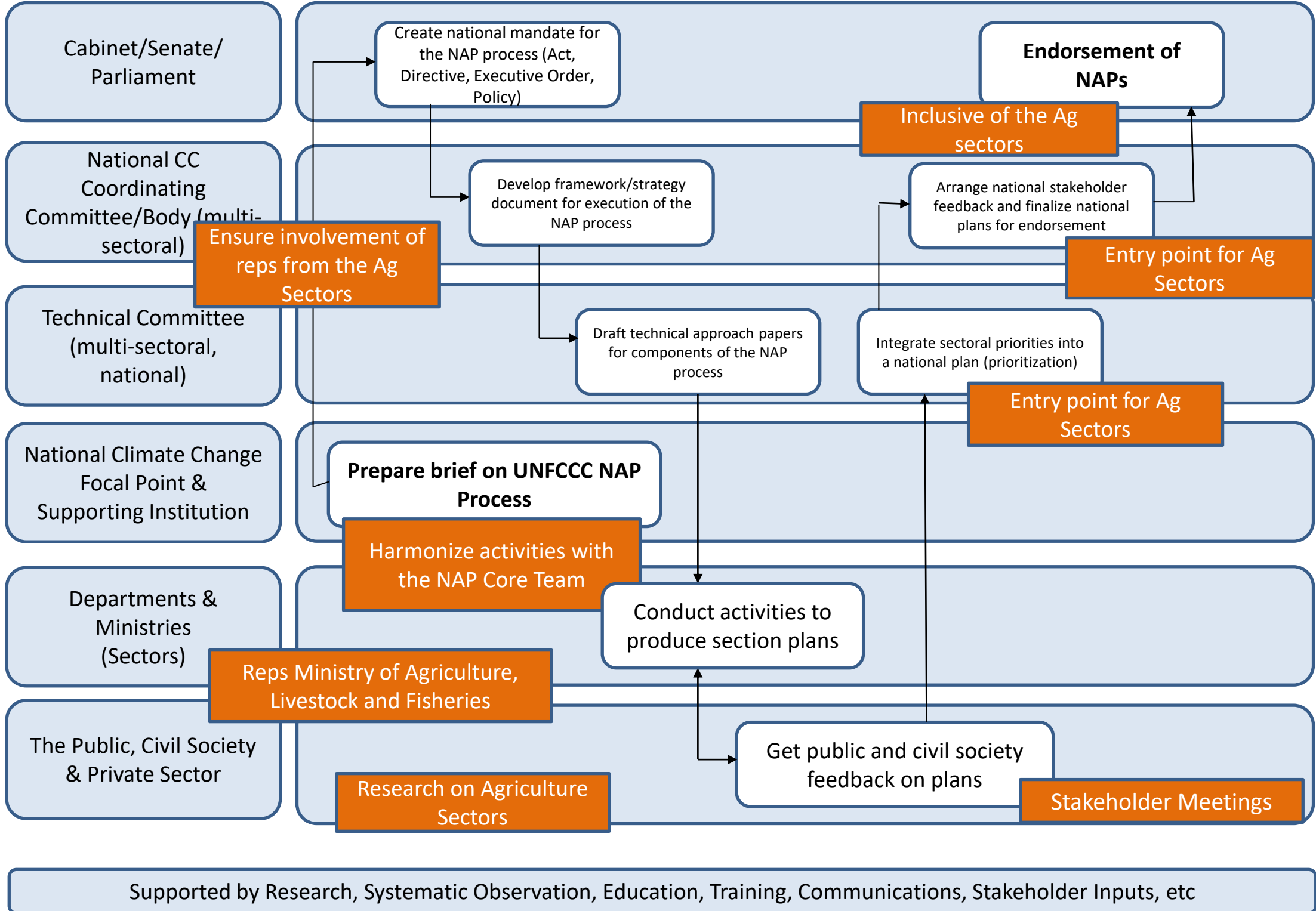
- Existing plans and resources to address capacity gaps in the NAP-Ag planning
- What coordination mechanisms are needed?

4. Linking adaptation and development

- What are the development goals in the Ag sectors?
- How to best integrate adaptation in Ag development?

NAP-Ag Guidelines

Process flow for addressing Ag



B

Prepare a NAP Framework

Analysis of climate change scenarios, vulnerabilities and risks in the agriculture sectors for identifying, selecting and prioritizing medium- to long-term adaptation options

1. Climate scenarios

- Is climate information available and accessible?
- What are the climate scenarios for the country and the regions?

2. Impacts and vulnerabilities

- Which Ag sectors and systems are amongst the most exposed?
- What are the adaptation options?
- What is currently in place?

3. Adaptation Options

- How are adaptation options ranked and prioritized? By whom?
- Are food security, nutrition and poverty reduction considered?

4. Compiling and communicating priorities

- Identify top adaptation priority options in the Ag sectors?
- How can this be communicated to the stakeholders?, e.g. ministries and government actions engaged in NAP planning

5. Reviewing integration

- Is climate change integrated in the planning and budgeting of the agriculture sectors?
- Opportunities and barriers to do so? How to address?

C

Implementation strategies

Ensuring the agriculture sectors' adaptation priorities are prioritized in the NAP.

1. Addressing agriculture in NAP

- Are Ag adaptation priorities well reflected in the NAP?
- What are lessons learned from ongoing programmes?

2. Planning implementation

- What are potential approaches for implementing adaptation?
- What are opportunities for financing for adaptation?

3. Developing implementation

- Is there a capacity development programme to support implementation?

4. Promoting coordination and collaboration

- Are all relevant ministries and other stakeholders engaged?
- Is there alignment with global conventions and agreements? – e.g. Paris Agreement and SDGs

D

Monitor, review, report and communicate

Build effective monitoring and review systems to assess – progress, effectiveness and gaps in integrating Ag in NAPs

1. Prepare for monitoring

- What are key indicators for monitoring the areas?
- Is there an existing M&E and/or management information system (MIS) in the Ag sectors?

2. Monitoring the planning

- Are the Ag sectors' concerns and needs included and prioritized in the NAPs?

3. Monitoring the implementation

- Is there a review and revision process for the NAP?
- Lessons learned from successes and challenges?

4. Disseminating information

- How to ensure experiences and information are shared with relevant stakeholders?
- What are the mechanisms in place for learning across borders? e.g. South-South communication



Food and Agriculture Organization
of the United Nations



Climate-Resilient Food Systems Alliance (CRFS): Overview of the Alliance, activities and approaches

Julia Weatherhogg
UNFCCC Secretariat



Climate Resilient Food Systems Alliance

OVERVIEW OF THE INITIATIVE



OUR VISION

A world where food systems are **sustainable, inclusive and resilient**, where food systems actors, including governments, private sector, the UN, civil society, academia, finance and **all stakeholders come together** towards preserving ecosystems and resources **to ensure healthy and nutritious foods for present and future generations**, whilst neutralizing the negative impact of production, transformation and consumption emissions, soil degradation, water depletion and biodiversity loss.

OUR STORYLINE

WHY FOOD SYSTEMS & CLIMATE CHANGE?



Whilst extreme weather events impact food systems and communities, at the same time, food systems, their production cycles, underlying diets and consumption are responsible for negative effects on ecosystems and the environment.

However, this does not have to be a downward spiral - we can reverse the negative relationship between food systems and climate change and turn it into a positive and mutually beneficial one.

WHAT NEEDS TO BE DONE?



To feed 9 billion people on the planet by mid-century, global food systems will need to operate efficiently while achieving the SDGs and meeting the 1.5C climate commitments.

To preserve a livable climate, greenhouse-gas emissions must be reduced by half by 2030 and to net zero by 2050. Bold, fast, and wide-ranging action needs to be taken by governments and businesses.

The **CRFS Alliance advocates for integrated food and climate nexus approach around 3 key areas with 9 themes**

OUR CALLS TO ACTION



Make food systems more resilient to climate change induced shocks and stressors through access to climate finance, DRR and CRM approaches, early warning and climate risk insurance.

Make food systems more resilient to man-made shocks and stressors by addressing climate-food security- conflict interlinkages and building resilient local food systems

Make food systems more sustainable by mainstreaming regenerative agriculture, WEF nexus, preserving soil health and halting biodiversity loss.

THE CRFS ALLIANCE ADVOCATES FOR A FOOD AND CLIMATE NEXUS APPROACH ARTICULATED AROUND 3 KEY AREAS:

1

Make food systems more resilient to **climate change induced shocks and stressors** by:



Facilitating access to climate finance



Investments in Climate Risk Management & Disaster Risk Reduction approaches



Early Warning & Climate Risk Insurance

2

Make food systems more resilient to **man-made shocks and stressors** by:



Addressing the interlinkages between Climate Change- Food Security & Conflict



Building Local Resilient Food Supply Chains

3

Make food systems more sustainable by:



Mainstreaming regenerative agriculture



Promoting soil and land health




Promoting Water - Food - Energy Approaches




Halting biodiversity loss

WHAT WE WILL DELIVER

 WELL-ADVANCED

 WORK IN PROGRESS

 NEXT FOCUS STREAMS



Alignment of interventions & solutions with countries' needs & priorities on food systems through – inter alia - dedicated surveys, analysis of NAPs, NDCs, national pathways and needs and capacity assessment



Case studies of four initial countries (Ethiopia, Fiji, Belize, The Gambia) to have practical examples on how to best integrate food & climate action in different contexts



A visual menu of options for countries to pick and choose solutions from



A connection network with an overview of all members and supporters of the Alliance



A data and analytics platform on food systems & climate change



A collection of possible climate finance sources & a quick overview of how to apply to each one



A desk support officer function to channel queries from countries to the best placed member within the alliance or provide guidance on the accessible knowledge



Strategic engagement on high-level events and summits, including a dedicated event at COP27 and other related global policy processes

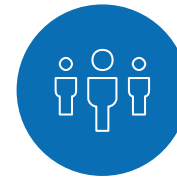


Regular communication and information materials (CRFS Newsletter, CRFS powerpoint, CRFS Factsheet) to all audiences



Brokerage with existing funds for supporting projects at country level

BREAKDOWN OF THE CRFS ALLIANCE



Leadership Group (tentative list)

World Food Programme Innovation Accelerator | Humanitarian Development Peace (HDP) Nexus Coalition | Resilient Local Food Supply Chains Alliance | UNDRR Science and Technology Advisory Groups (STAG) | World Farmers' Organization | International Association of Students in Agriculture and Related Sciences (IAAS) | InsuResilience Global Partnership | Clim-EAT | Risk-informed Early Action Partnership (REAP) | African Union Commission | Water & Energy for Food (WE4F) Programme | Federal Ministry for Economic Cooperation and Development (BMZ) | International Rice Research Institute (IRRI) | International Maize and Wheat Improvement Center (CIMMYT) | The Global Alliance on Climate Smart Agriculture (GACSA) | The Global-Hub on Indigenous Peoples' Food Systems | SEKEM | World Business Council on Sustainable Development (WBCSD) | Private Sector Alliance for Disaster Resilient Societies (ARISE) | Good Food Hub | Bangladesh Rural Advance Committee (BRAC) and BRAC International | Global Network of Civil Society Organizations for Disaster Reduction (GNDR) | Green Climate Fund (GCF) | UN Foundation | AIM for Climate (AIM4C) | UN Capital Development Fund (UNCDF) | GSTIC | TAPP Coalition



Core Group

CGIAR, the Club of Rome, the Commonwealth Secretariat, the Food and Agriculture Organization of the United Nations, the International Centre for Climate Change and Development, the International Fund for Agricultural Development, the Sustainability Health Education Foundation, the UNFCCC, the United Nations Convention to Combat Desertification, the United Nations Environment Programme, the United Nations Office for Disaster Risk Reduction, the World Bank and the World Food Programme



Countries

Armenia, Belize, Ethiopia, Fiji, Germany, Libya, New Zealand, Panama, Pakistan, Republic of Moldova, State of Palestine, The Philippines, The Gambia, Uganda

CRFS ALLIANCE WORKING GROUPS



DATA AND ANALYTICS

Data and Analytics Platform

Investment Case



PARTNERSHIP & ADVOCACY

Webpage

Advocacy Framework

COP 27 Strategy

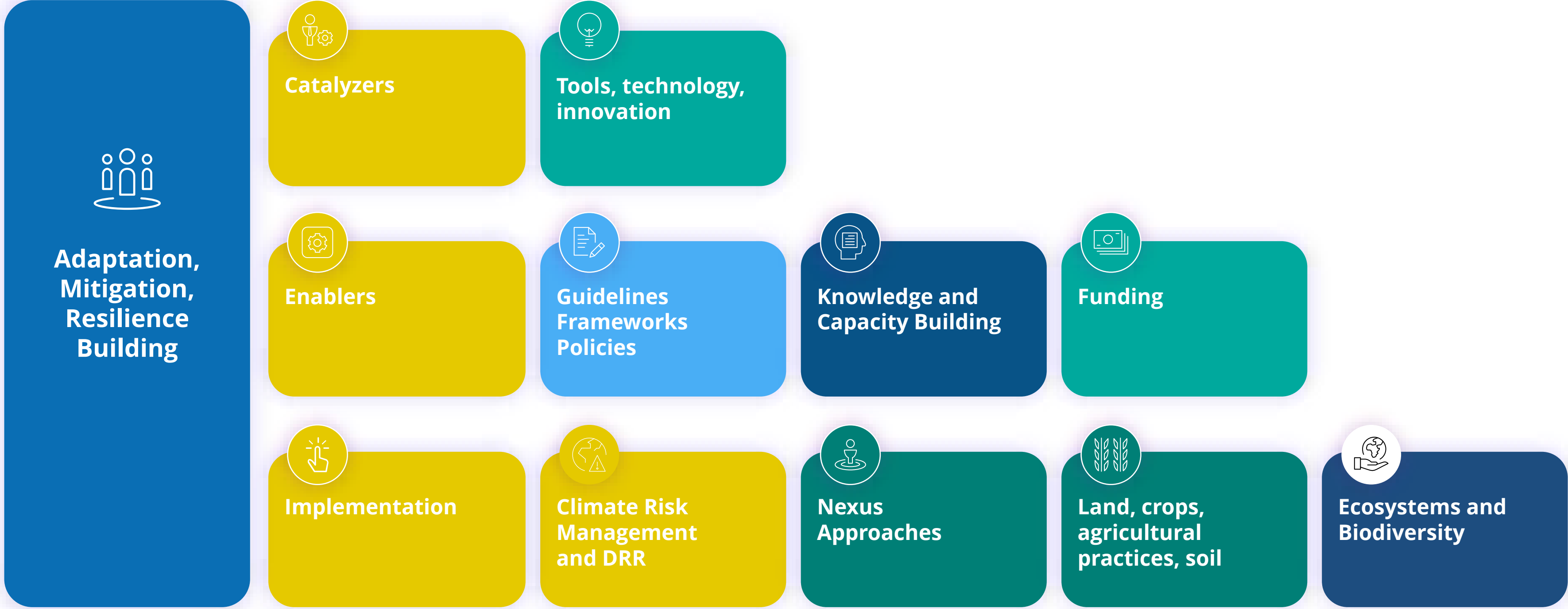


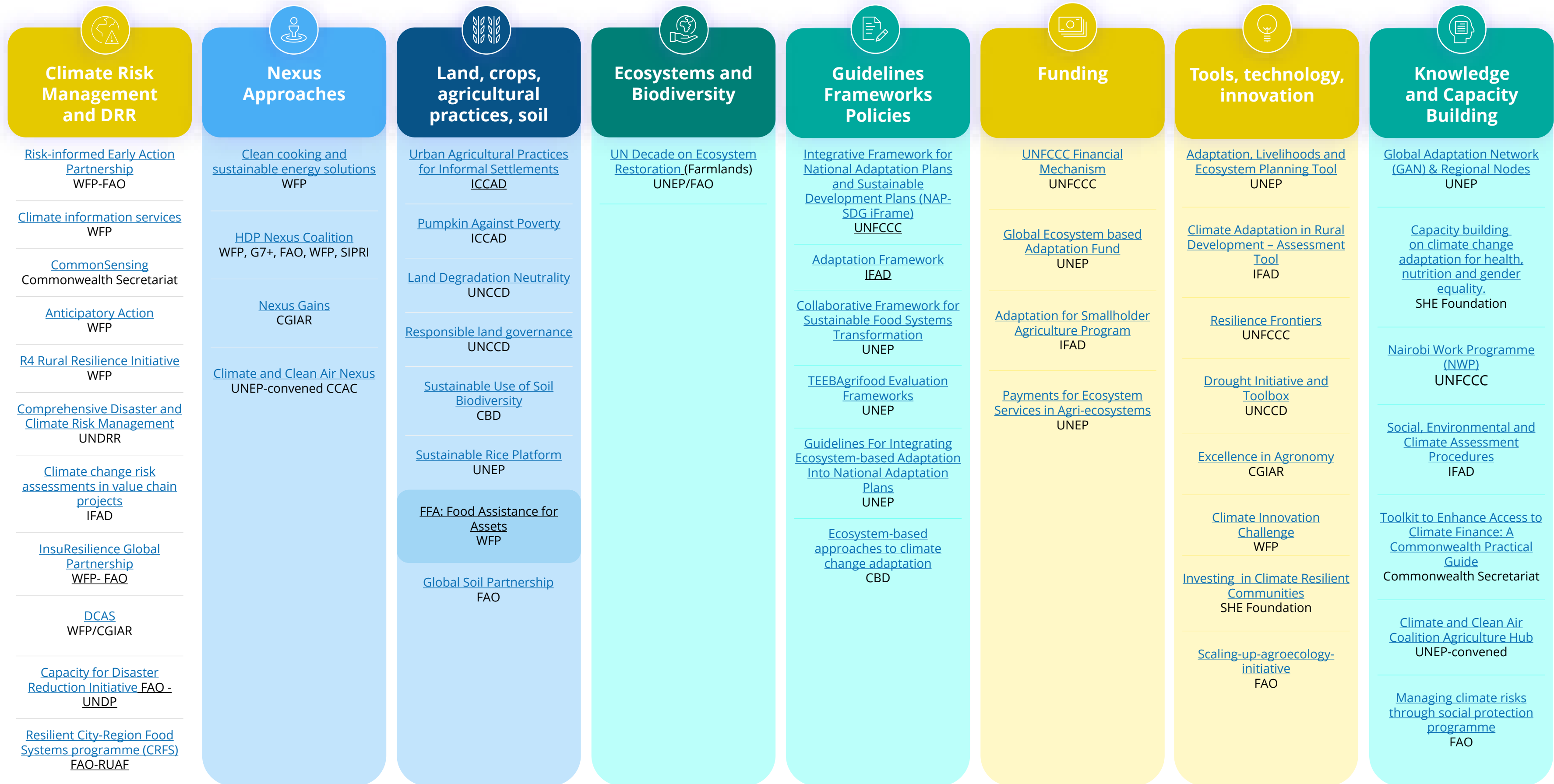
COUNTRY CASE STUDIES

Country Case Studies (ppt)

Country Case Studies (word)

ACHIEVING CLIMATE RESILIENCY IN FOOD SYSTEMS





CRFS COUNTRY CASE STUDIES

Why?

- Allow proactive engagement of selected countries and provide opportunities for the Alliance to gather lessons, challenges, opportunities and good practice in providing and coordinating the support

What?

- Identifying key issues related to climate resilient food systems and possible actions to be implemented by the Alliance;
- Designing and implementing activities, drawing upon existing activities from the members of the Alliance and other stakeholders;
- Monitoring, evaluation and learning;

Where?

- Based on the expression of interest from countries, the initial phase of case studies seek to represent diverse geographic, economic and risk factors: **Belize, Ethiopia, Fiji, Gambia.**



CASE STUDIES: SOME COMMON PRIORITIES

Policy support

- Support to completion/implementation of the national food systems transformation pathway
- Support implementation of commitments set out in NDCs and NAPs

Data, information & learning

- Climate information systems and multi-hazard early warning systems
- Technical discussions and exchanges on good practices
- Monitoring, evaluation and learning

Access to finance

- Support for strengthening food supply chains and food systems

Multi-risk approaches

- Cross-sectoral collaboration and multistakeholder initiatives.

CASE STUDIES: COMMON GAPS & CHALLENGES

1

Rainfed agriculture dominates the sector and increases vulnerability to climate change

2

High dependence on imports to meet food requirements - local produce is often more expensive than imported produce.

3

Insufficient cooperation for knowledge sharing, innovation and technology transfer for resilience.

4

Lack of diversity in crop production and diets.

5

Need for comprehensive risk management systems that articulate climate services, multi-risk EWS, access to insurance schemes, and move towards Adaptive Social Protection

6

Food systems policies and projects mostly focused on production – initiatives for better market arrangements are not well-coordinated.

7

Limited participation of women and youth in resource governance, agri-business development, and digital innovation.

8

3 of the countries present specific knowledge, implementation and policy gaps to address risks that sea level rise poses to food systems.

LEADERSHIP GROUP OUTPUT AND WORKSTREAM

CLUSTER



OUTPUT LED BY CLUSTER



OUTPUT COORDINATED BY CRFS ALLIANCE WITH CLUSTER'S INPUT



Innovation And Technology

- Technology matchmaking
- Connecting with AIM4C innovation sprints
- Design and implement a defined program for selected start-ups and other entities offering solutions to defined climate priorities

- Creating a portfolio of the services, tools and solutions offered by leadership group members
- Advocate for the importance of accurate and geo-localized data for food systems resilience
- Promote the inclusion of indigenous knowledge in innovation/tech solutions (e.g. through hosting dialogues)



Alliances And Coalitions

- Liaising with relevant members of the HDP Nexus Coalition and Resilient local Food Supply Chain Alliance (RLFSCA)
- Sharing outcomes of respective works in promoting food systems and climate resilience within both networks

- Expand membership with affected countries and local civil society
- Implementing coordinated action in the 4 country case studies with sister coalitions
- Work closely with the HDP Nexus coalition on the interlinkages between conflict, climate change and food security



Solutions

- WE4F will bring in more than 120 local SMEs around 5 Regions to provide solutions for smallholders and End-Users
- Work closely with the Innovations and Technology group to identify and integrate additional, suitable solutions for partner countries

- Develop a feedback mechanism to implement and test solutions at a country level, providing also lessons learned
- Develop mechanisms and ways to access climate finance for end-users, governments and the private sector

LEADERSHIP GROUP OUTPUT AND WORKSTREAM

CLUSTER



OUTPUT LED BY CLUSTER



OUTPUT COORDINATED BY CRFS ALLIANCE WITH CLUSTER'S INPUT



Funds

- Sharing guidance and best practices in building climate resilience and carbon neutrality in agriculture and food systems

- Hosting dialogues with developing countries on emerging issues of agriculture and food systems
- Start a brokerage system for the countries selected for the country diagnostics exercise



Civil Society

- Bringing in the voices of those on the frontline, i.e. risk perspectives and the lived-in experiences of the Civil Society Organizations (CSOs)
- Integrating the messages of the alliance in platforms like Poverty and Environment Platform (PEP) for a joined-up narrative
- Representing CRFS alliance and contributing to the CSO engagement at global platforms such as GPDRR, HLPF, COP and World Food Summits

- Add a gender network to this cluster (e.g. the gender climate alliance)
- Promote paradigm shift in knowledge transfer from North-South exchanges to South-South and South-North knowledge exchange



National and International Bodies

- Establishment of knowledge sharing platform to share science, innovation, knowledge, etc.
- Development and facilitation of uptake of climate resilient agriculture socio-technical innovations through public and private partnerships

- Develop a series of white papers on climate-resilient agricultural practices
- Update an inventory of key climate-resilient agriculture solutions



Private Sector

- Facilitating representation by the private sector in the planning and advocacy work of the CRFS alliance
- Providing capacity for the CRFS workplan when needed and showcasing case studies to alliance stakeholders to trigger engagement with the alliance

- Coordinate a joint campaign with diverse voices to deliver a COP28 commitment on a third of climate finance to food

PART II:

**Examples of approaches to building agri-food
systems resilience through NAPs by
countries and CRFS Alliance members**



Food and Agriculture Organization
of the United Nations



NAP expo



Food and Agriculture Organization
of the United Nations



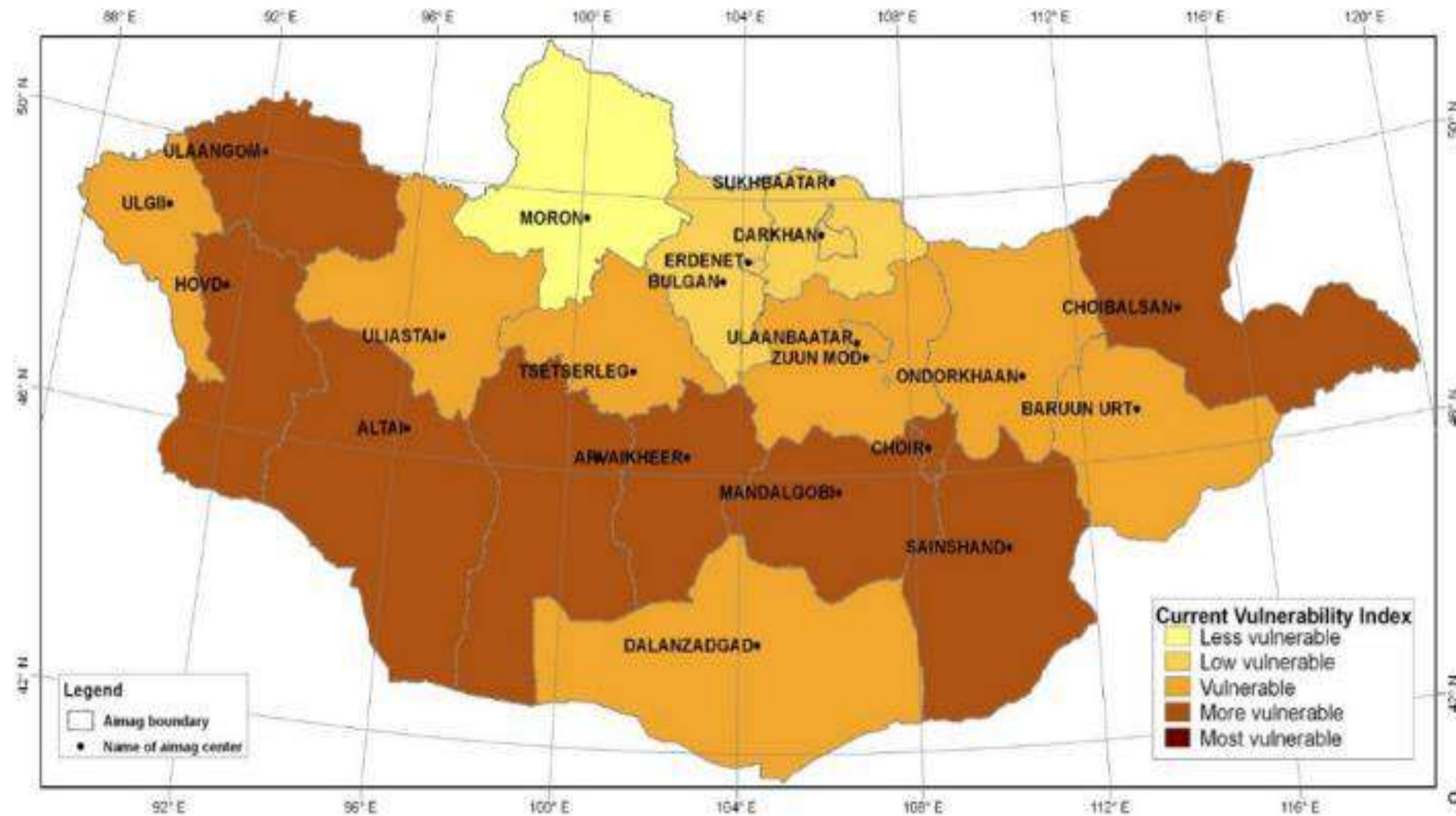
Ms. Shagdarsuren Tserensulam

Director General of Climate Change, Policy Planning Department

Ministry of Environment and Tourism

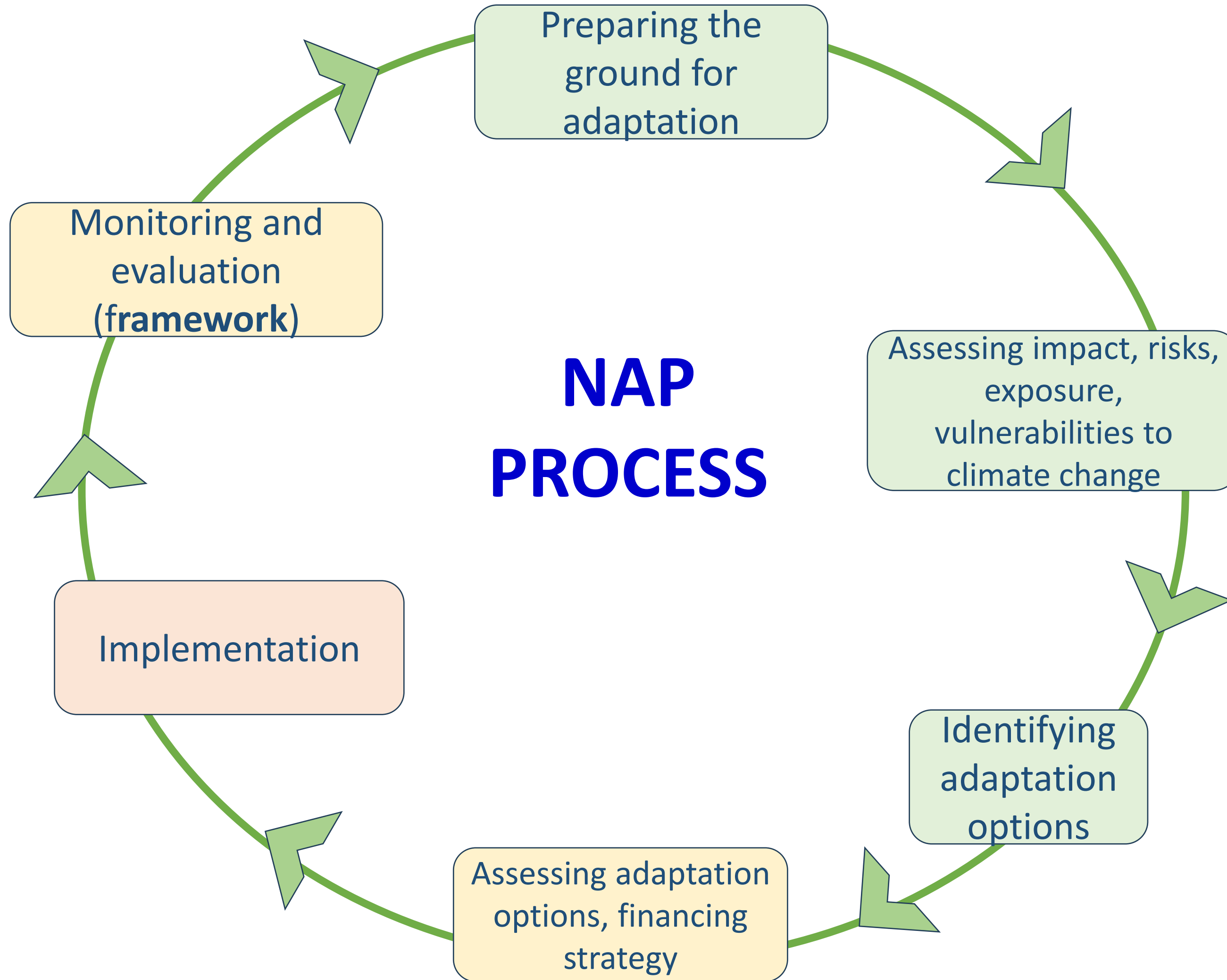
Mongolia

National Adaptation Plan of Mongolia



Mid term (7 years) plan

NAP PROCESS

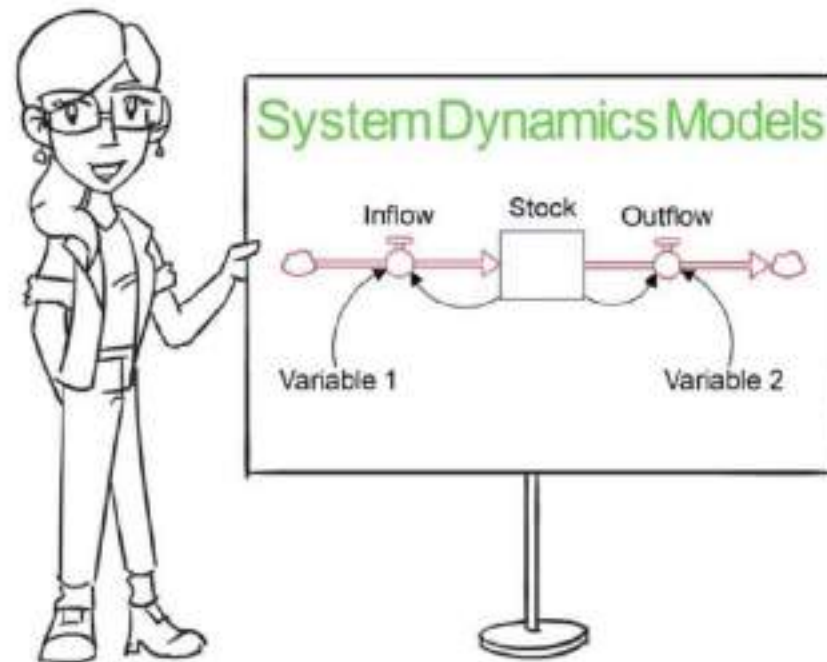


System dynamic model to analyze the state of ecological, and socio-economic conditions in relation to climate change



The most vulnerable and exposed sectors to Climate Change

1. Biological diversity, ecosystem
2. Water resources, regime and supply
3. Forestry and Timber sector
4. Animal husbandry, pastureland
5. Crop production
6. Climate change and Weather driven natural hazards
7. Public health
8. Social welfare, social protection



NAP Mongolia

Table of Content

PART I

INTRODUCTION

**2 CLIMATE CHANGE IN MONGOLIA AND ITS IMPACT,
THREATS AND RISKS ON THE ECOSYSTEMS**

**3 SOCIO-ECONOMIC SITUATION OF MONGOLIA AND
CLIMATE CHANGE IMPACTS AND RISKS**

**4 NEEDS AND OPPORTUNITIES OF DEVELOPMENT
PREVENTING RISKS BY ADAPTING TO CLIMATE CHANGE**

5 IMPLEMENTATION CRITERIA AND BASELINE

ADAPTATION SECTORS, OBJECTIVES, ACTIONS

№	SECTORS	Planned, number		
		Objectives	Objectives	Actions
1	Biological Diversity, Ecosystem	1	4	10
2	Water resources, regime, supply	1	3	15
3	Forestry and Timber sector	1	3	6
4	Climate change and weather driven natural hazards	1	3	10
5	Agriculture (Pasture, Animal husbandry, crop production)	2	8	32
6	Public Health	1	5	58
7	Social welfare, social protection	1	3	14
	TOTAL	8	29	145

AGRICULTURE: ANIMAL HUSBANDRY,

Objective	Targets	Actions (number)
Sustainable development of a risk-bearing and productive livestock sector with introduction of advanced technology compatible with pasture carrying capacity and water resources and adaptable to changing climate.	1. Sustainable pasture management with adequate use of resources while keeping number of livestock in accordance with the pasture carrying capacity	7
	2. Improve herd quality and economic turnover and reduce grazing load.	7
	3. Advance incentives and support mechanisms for livestock farmers based on their sustainability assessment	3
	4. Improve forage quality and supply to meet the requirements to adapt to climate change	2

AGRICULTURE: CROP PRODUCTION

Objective	Targets	Actions (number)
To protect soil fertility and sustainably develop a high productivity crop production based on advanced technologies adapted to changing climate	1. Introduce technology to reduce and eliminate the mechanical tillage of soil to mitigate the loss of soil moisture and soil mechanical structure.	2
	2. Protect the moisture evaporation and soil fertility of the fields planted with grain, fodder and technical plants from wind and water erosion/ damage.	6
	3. Introduce advanced technology in the irrigation of potato, vegetable, fruit and berry crops	2
	4. Introduce and localize the modern smart technologies in crop production	3

IMPACTS OF CLIMATE CHANGE, DESERTIFICATION AND LAND DEGRADATION ON SUSTAINABILITY OF FOOD SYSTEM

Multistakeholder Dialogue, 24-26 August, Mongolia



- Creation of economic incentives for activities on restoration of degraded lands;
- Strengthen inter-sectoral coordination in the field of use and protection of agricultural land and pastures;
- Introduction of modern technologies suitable for Mongolian conditions to combat desertification and control sand migration;
- Expansion of regional cooperation with China and Northeast Asian countries;
- introduce adequate management of livestock size suited to the pasture capacity, introduce pasture and water use fee by livestock; make necessary amendments to the law on Livestock Tax based on the type of livestock; etc



Food and Agriculture Organization
of the United Nations



Mr. Sanjeev Karn

**Joint Secretary, Food Safety and Food Technology Division
Ministry of Agriculture and Livestock Development**

Nepal

Nepal



Korea Global Adaptation Week

Regional NAP Expo for Asia and the Pacific

INCHEON, REPUBLIC OF KOREA

28 Aug – 01 Sep, 2023

National Adaptation Plan (NAP) for Resilient Agri-Food System: Nepal Overview

Sanjeev Kumar Karn, Joint Secretary

Ministry of Agriculture and Livestock Development

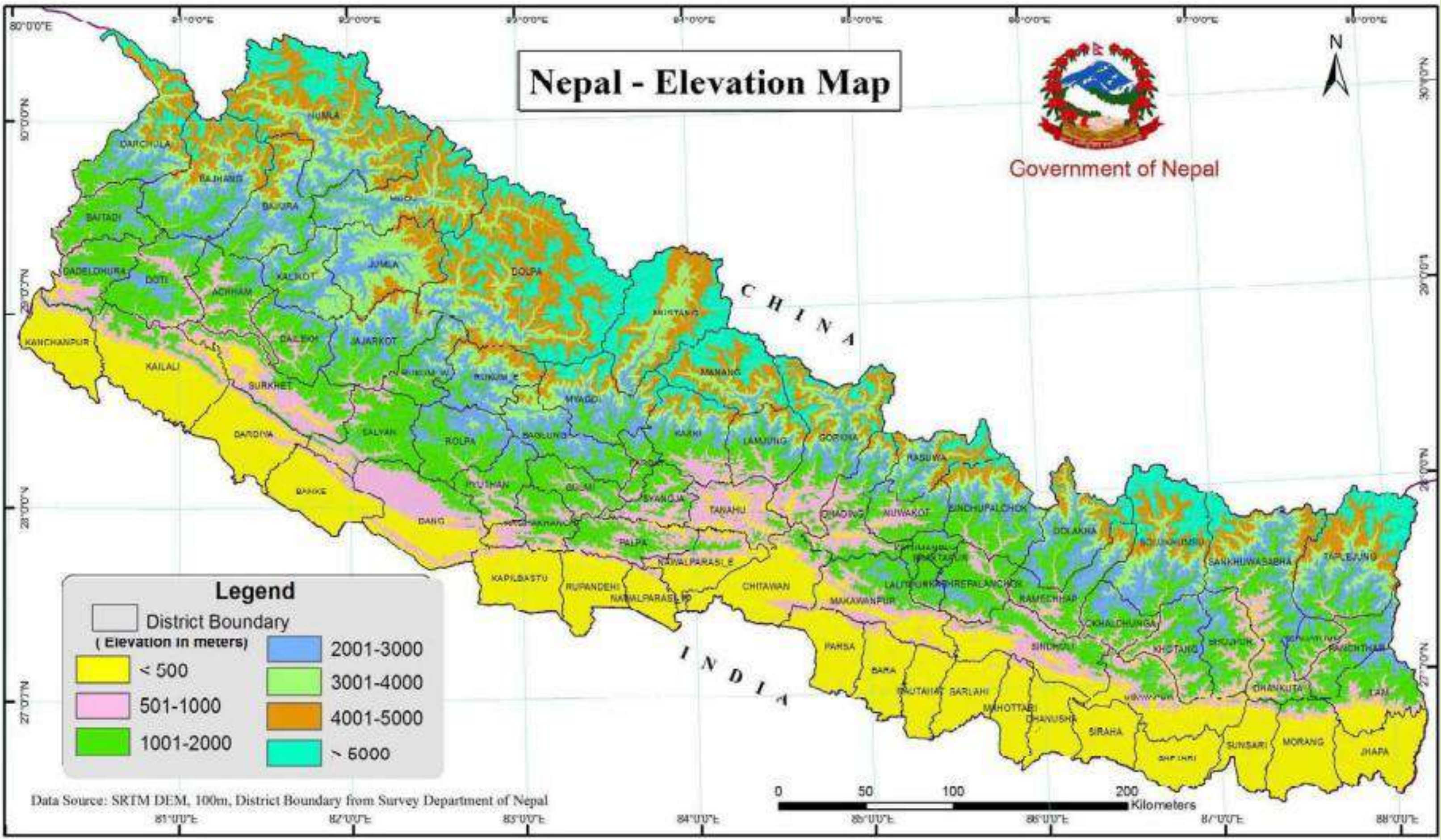
Government of Nepal

Date: 2023/08/28

Nepal - Elevation Map



Government of Nepal

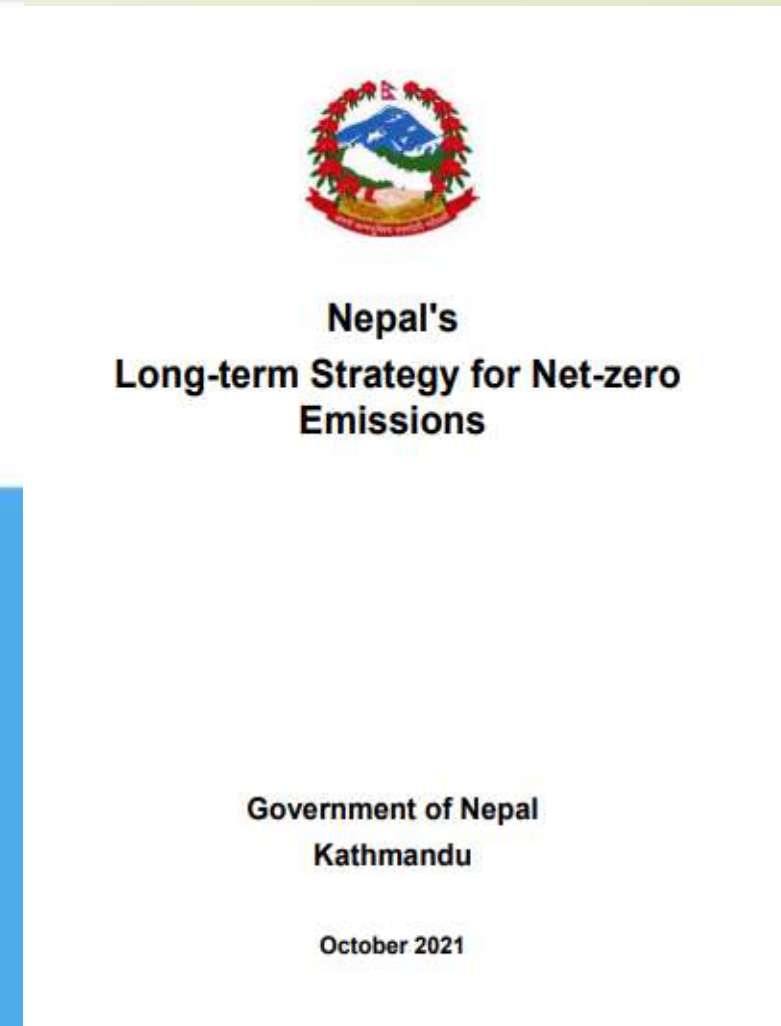
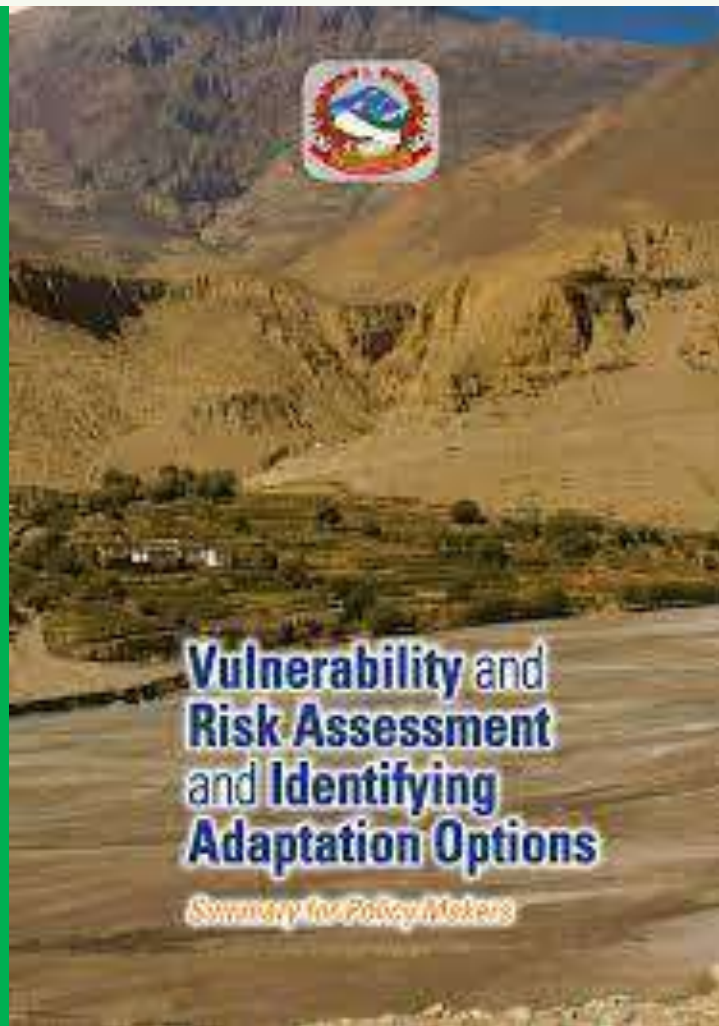
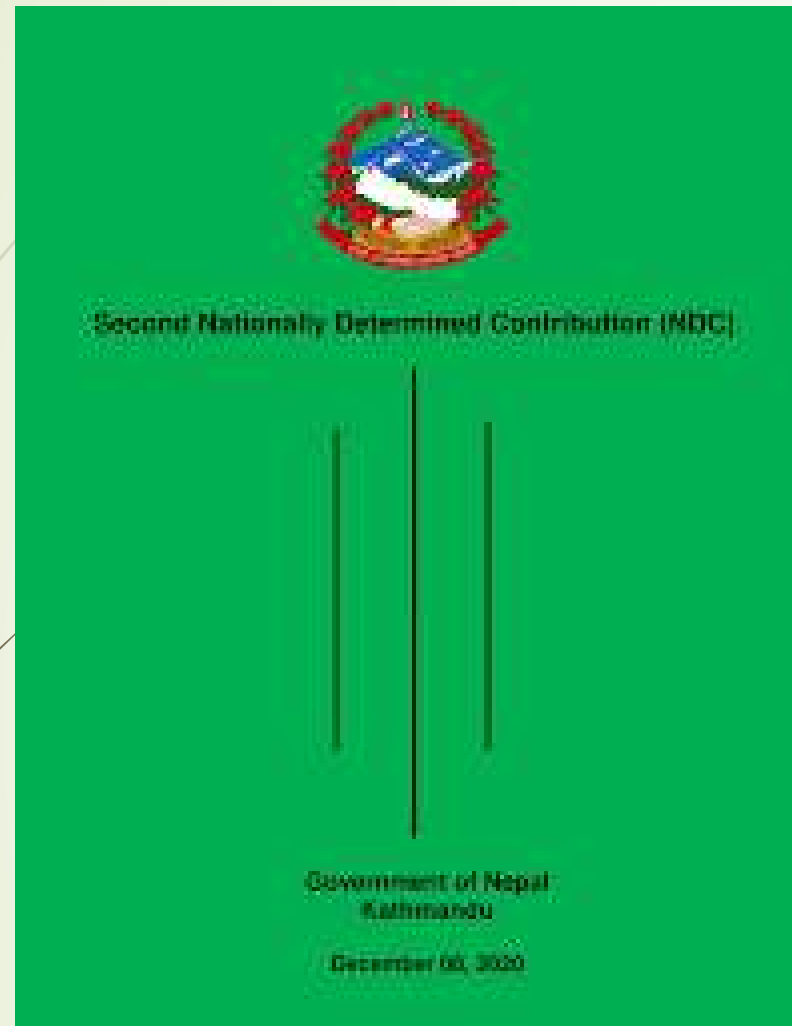
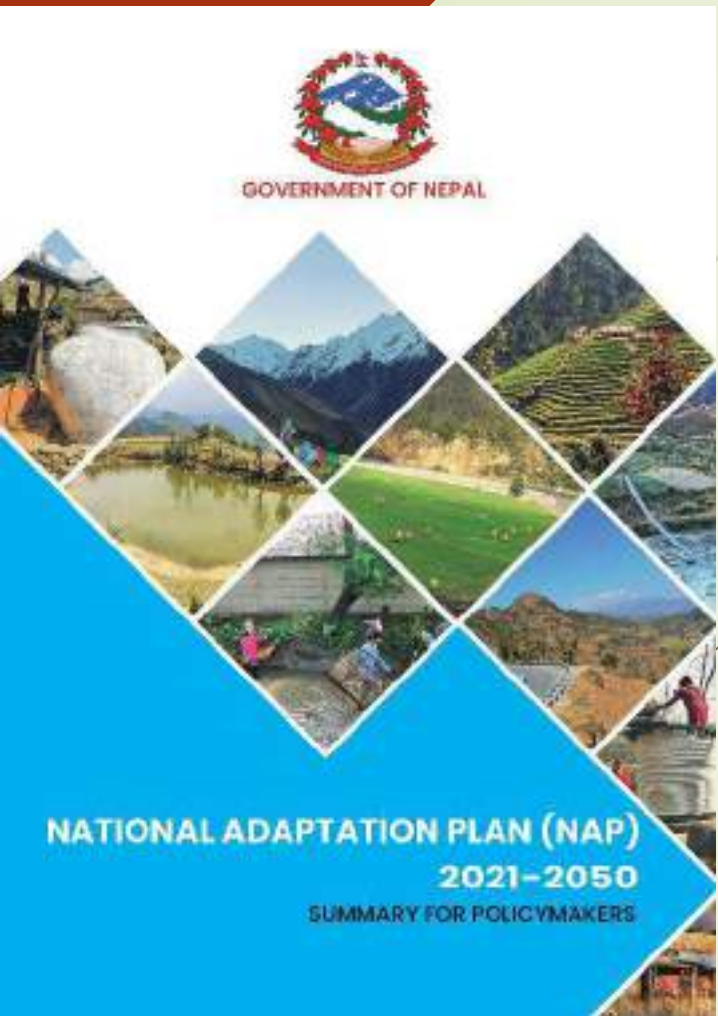




Building Nepal Climate Resilience

- Nepal has been engaged and committed to systematic, evidence-driven adaptation planning since 2010.
- A significant milestone was the formulation of the National Adaptation Programme of Action (NAPA) in 2010.
- The Local Adaptation Plans for Action (LAPAs) serve as essential blueprints, directing the execution of adaptation initiatives at the grassroots level.
- Guided by Cancun Adaptation Framework: Nepal embarked on its National Adaptation Plan (NAP) journey in 2015, under the guidance of the Cancun Adaptation Framework.

Guiding Policies



National Climate Change Policy
2076 (2019)

Gender and Social Inclusion Strategy and
Action Plan in Climate Change 2019

Sustainable Development
Goal



Nepal's National Adaptation Plan (NAP)

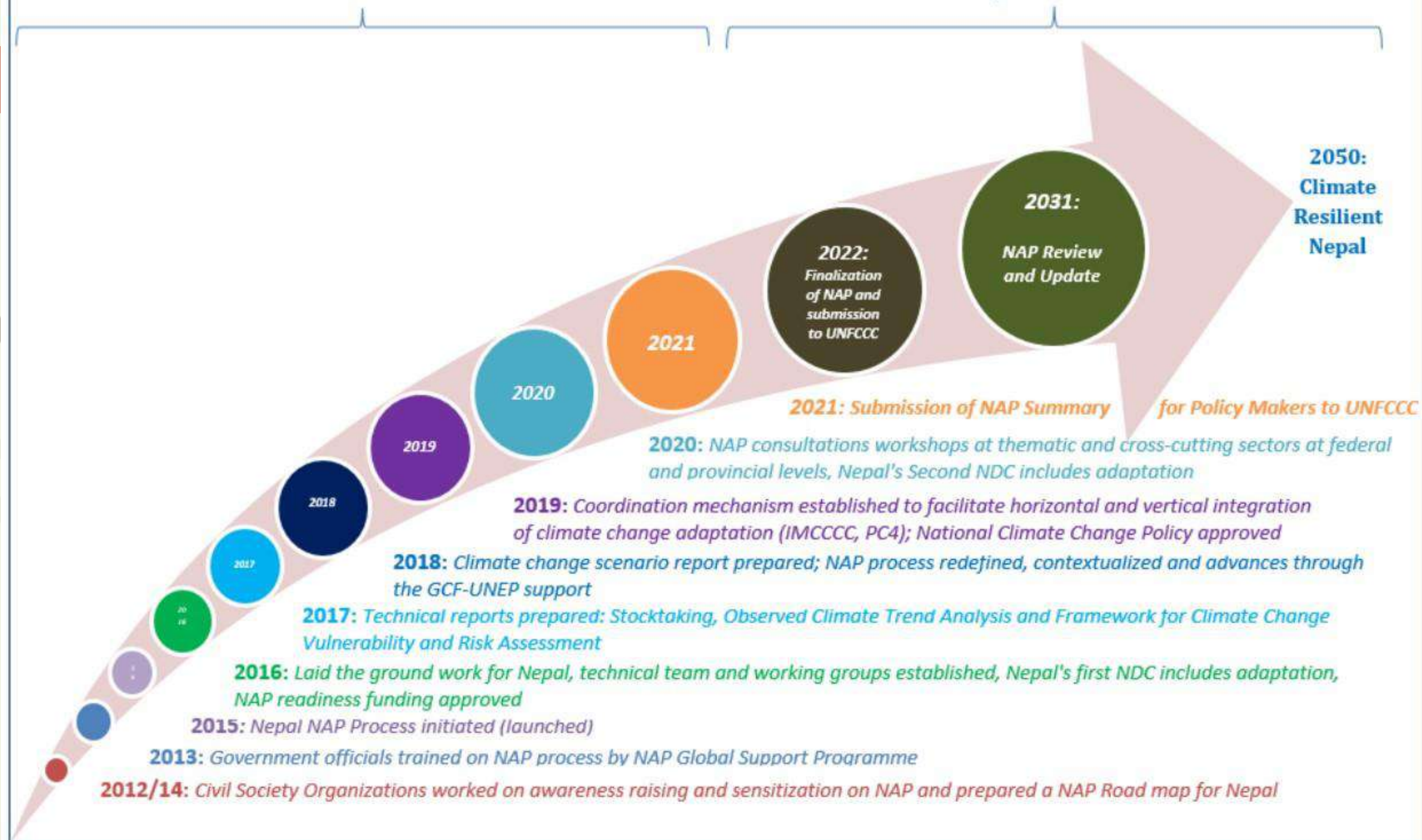


National Adaptation Plan (NAP)

- NAP Summary for Policy Makers have been approved by the government of Nepal Council of Ministers on 28 October 2021.
- The document sets out priority programmes in the nine thematic sectors as outlined in the National Climate Change Policy (2019).
- The programmes include adaptation actions that are best able to address climate vulnerabilities and risks in the short (2025), medium (2030), and long-term (2050).
- Total 64 priority programmes identified with total budget USD 47.4 billion for implementation until 2050.

NAP Preparation Phase

NAP Implementation Phase



NAP Formulation Principles

- Responsiveness
- Policy Coherence
- Integration
- Gender responsive and socially inclusive
- Multi-stakeholder engagement, coordination, and cooperation
- Ecosystem Integrity
- Leave-no-one-behind

Unique features of Nepal NAP Process



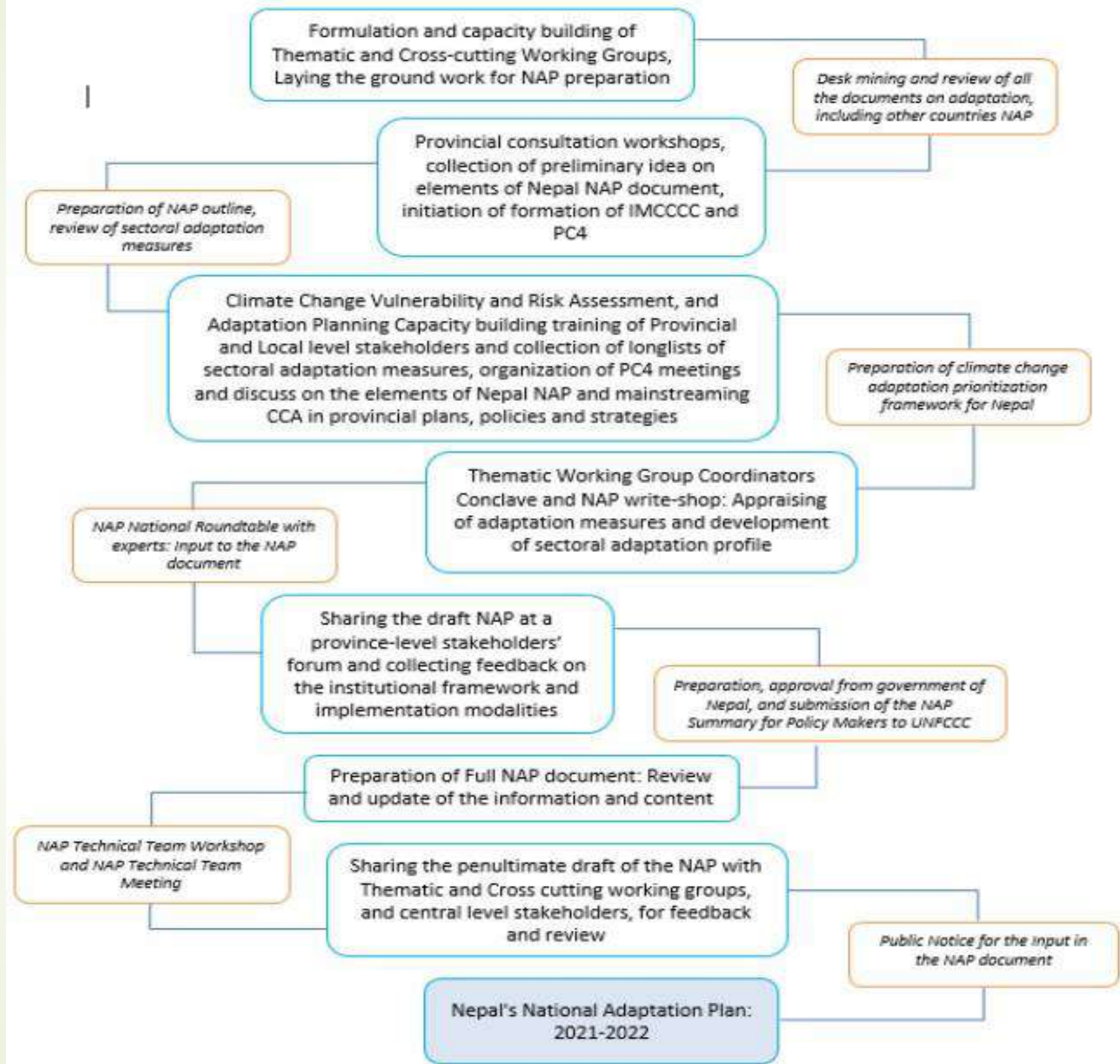


NAP Objectives

The two primary objectives of the NAP process agreed by UNFCCC:

- To **reduce vulnerability** to the impacts of climate change, by building adaptive capacity and resilience;
- To **facilitate the integration of climate change adaptation**, in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate.

Nepal NAP development process



Priority Sectors

Sectors	Priority Programs	Budget, USD
Agriculture and Food Security	9	11.2 B
Forest, Biodiversity and Watershed Conservation	11	8.70 B
Water Resources and Energy	8	5.35 B
Rural and Urban Settlements	3	2.85 B
Industry, Transport and Physical Infrastructure	5	3.05 B
Tourism, Natural and Cultural Heritage	8	1.13 B
Health, Drinking water and Sanitation	7	4.75 B
Disaster Risk Reduction and Management	6	8.50 B
Gender Equality and Social Inclusion, Livelihood and Governance	4	0.70 B
Enabling Action	3	0.16 B



National Adaptation Plan (NAP): Agriculture and Food Security Sector

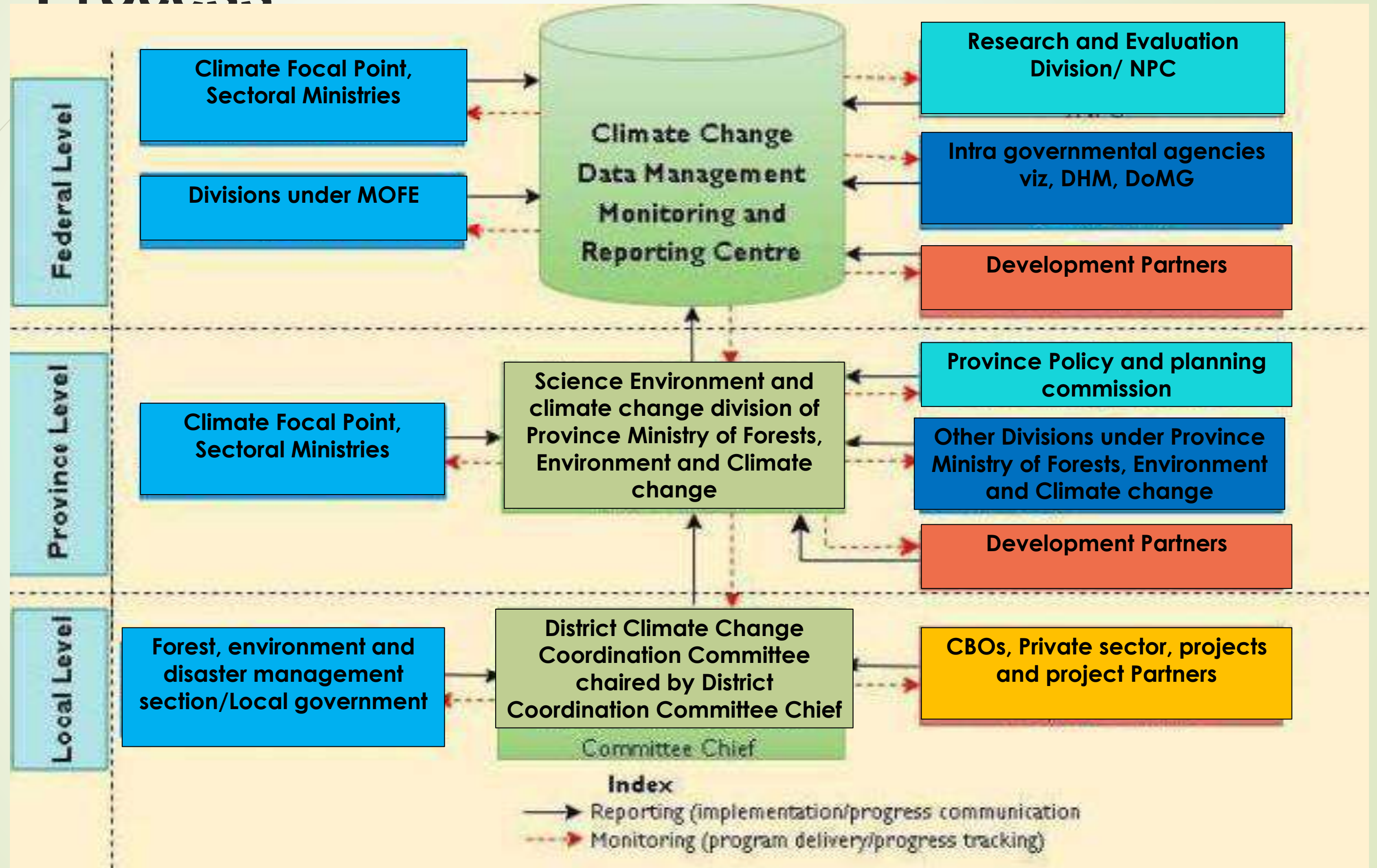
- **Forward-focused Adaptation Plan:** The plan outlines strategic goals till 2050, key programs till 2030, and immediate actions until 2025.
- **Agriculture's Ambitious Blueprint:** Within the Agriculture and Food Security sector, there are nine prioritized adaptation programs amounting to USD 11.2 billion by 2050.
- **Elevating Agriculture Resilience:** These programs aim to bolster agro ecosystems, elevate productivity, conserve genetic resources, enhance capacities, embrace clean energy, and introduce farmer-friendly climate risk-sharing models.

NAP Priorities for Resilient Agri-Food System and Sustainable Livelihood

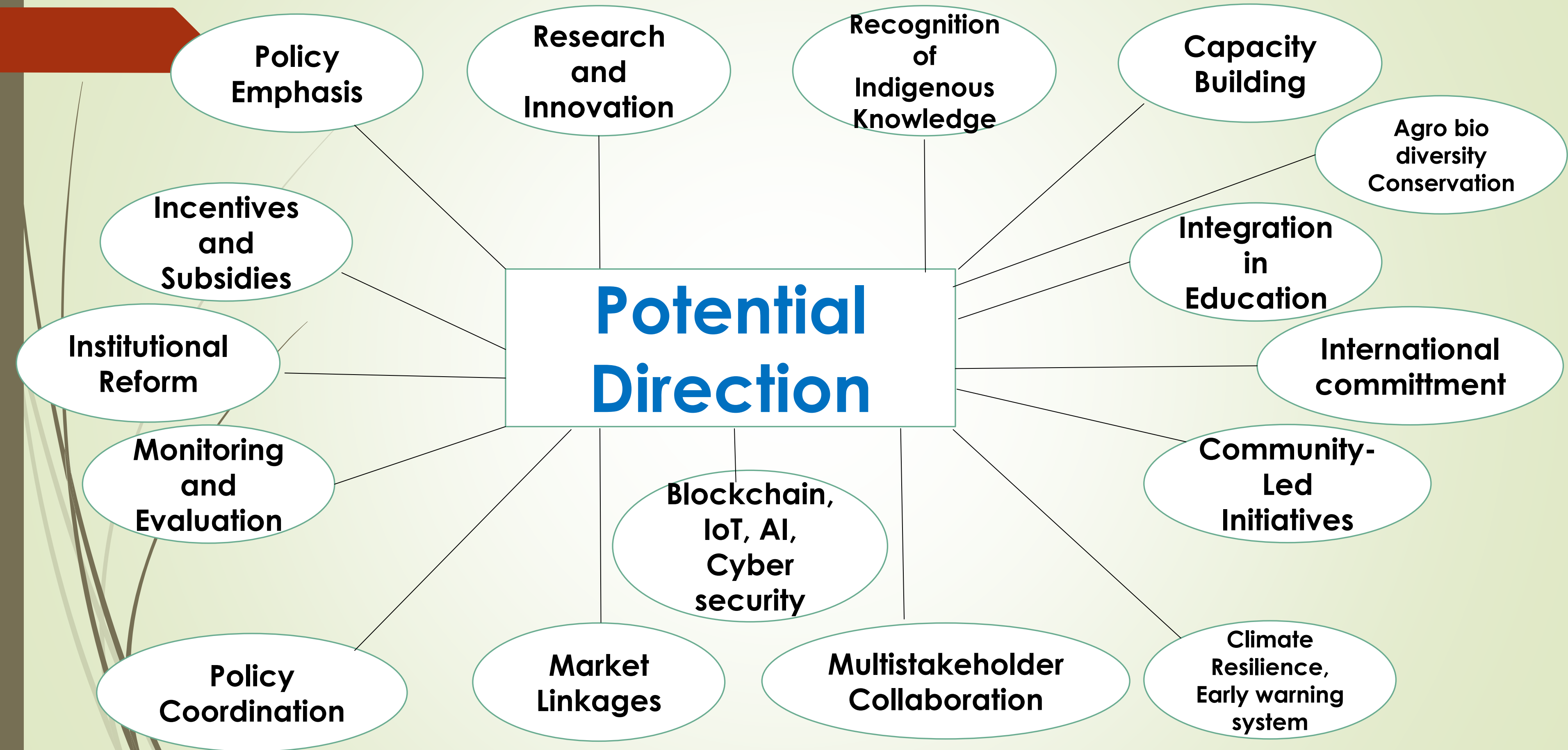


Monitoring Framework for Nepal's NAP

Process



Potential direction of Strengthening Climate Resilient Agrifood System



Nepal



**THANK YOU FOR KIND
ATTENTION!**



Food and Agriculture Organization
of the United Nations



Ms. Marissa Cook

Director of Agriculture

Department for Environmental Management & Agriculture

Nauru



Food and Agriculture Organization
of the United Nations



Mr. Am Phirum

Deputy Director, Department of Agricultural Land Resources

Management

Ministry of Agriculture Forestry and Fisheries

Cambodia

The 8th Asia-Pacific Climate Change Adaptation (APAN) Forum

AGRI-FOOD SYSTEM RESILIENCE IN NAPS

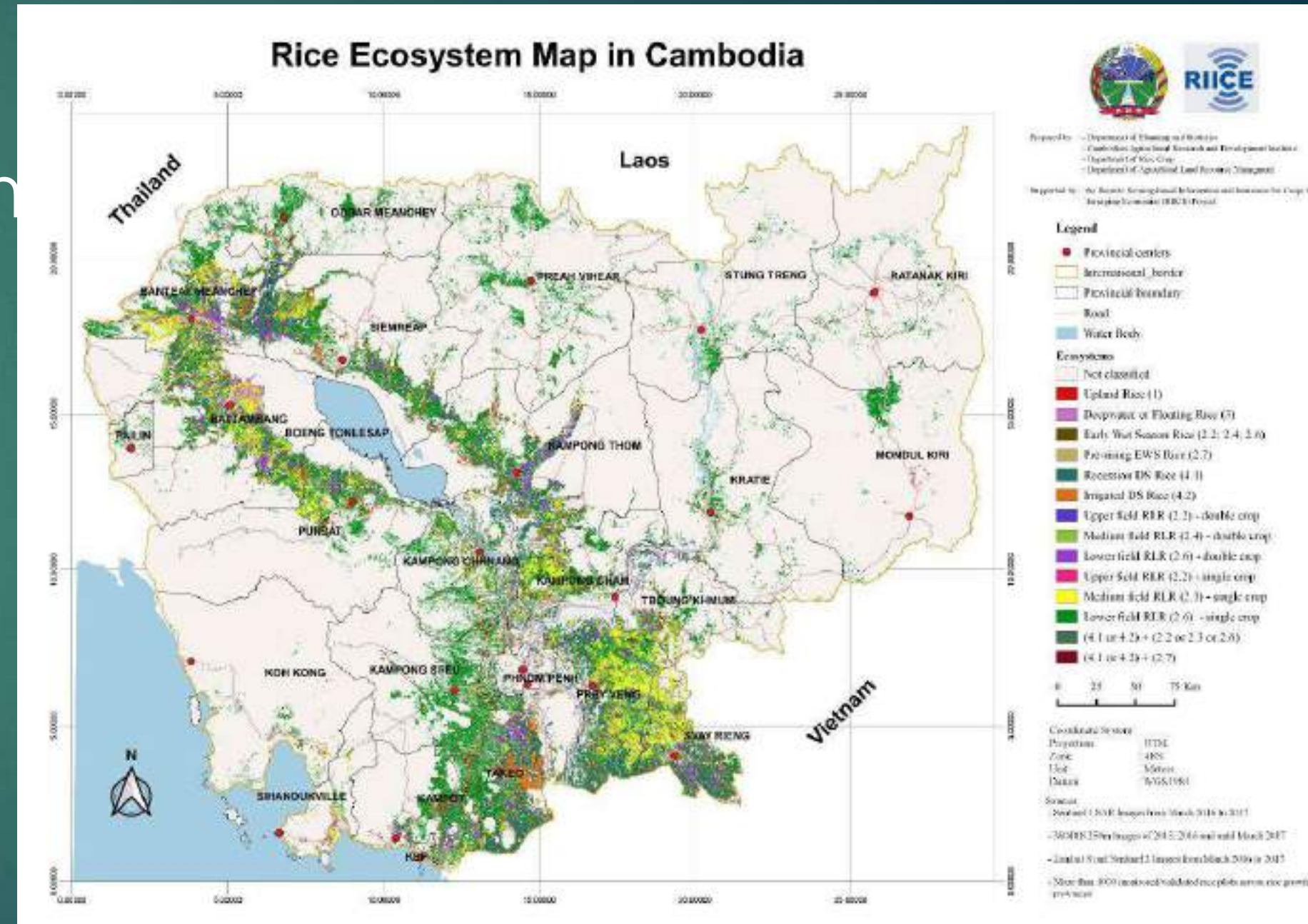
Songdo Convensia Convention Center, Incheon City,
28 August – 1 September 2023

Am Phirum

Department of Agricultural Land
Resources Management, MAFF.
Cambodia

Agriculture Sector

- ▶ Agriculture is the foundation of the Cambodian economy.
- ▶ Agriculture representing 22.2% of GDP in 2022, is highly dependent on rainfall and on the annual flooding/recession of the Tonle Sap Great Lake.
- ▶ Agriculture provides food for daily living, raw materials for agro-industry, and export
- ▶ In 2022:
 - ▶ Rice cultivation area: 3,4 mil.ha
 - ▶ Rice production: 11.62 mil.ton
 - ▶ The average rice yield: 3.52 t/ha

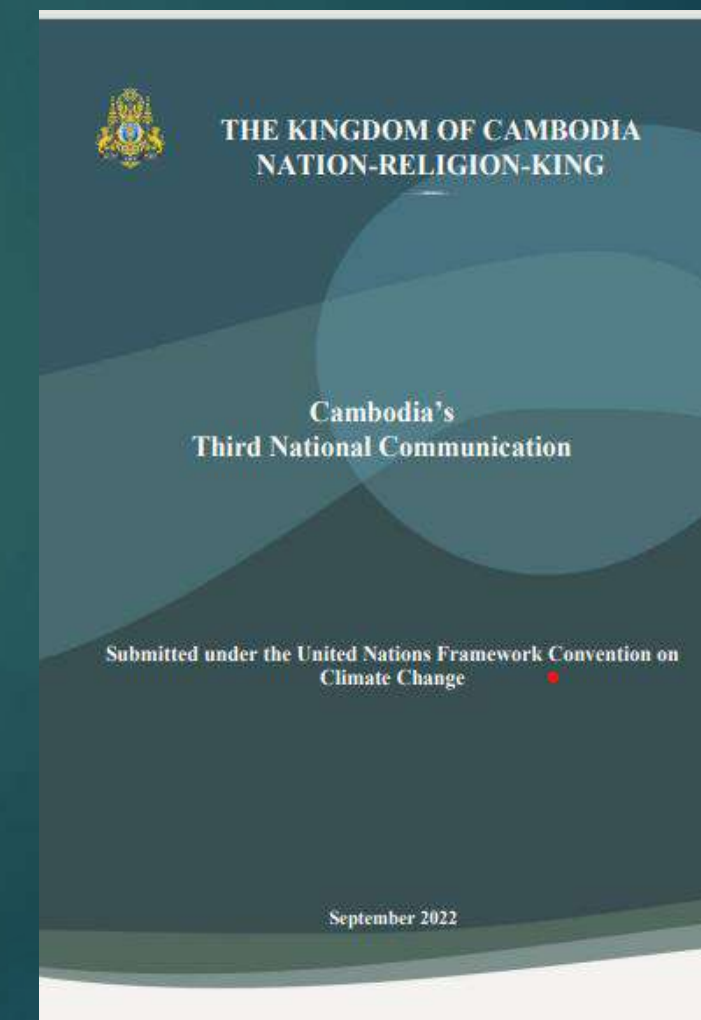
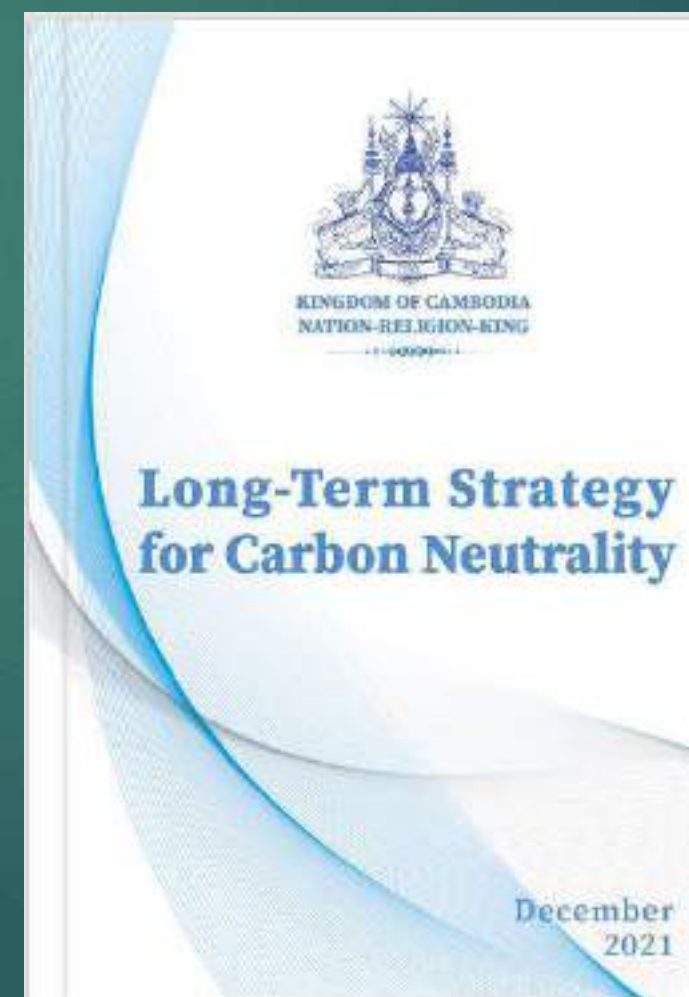
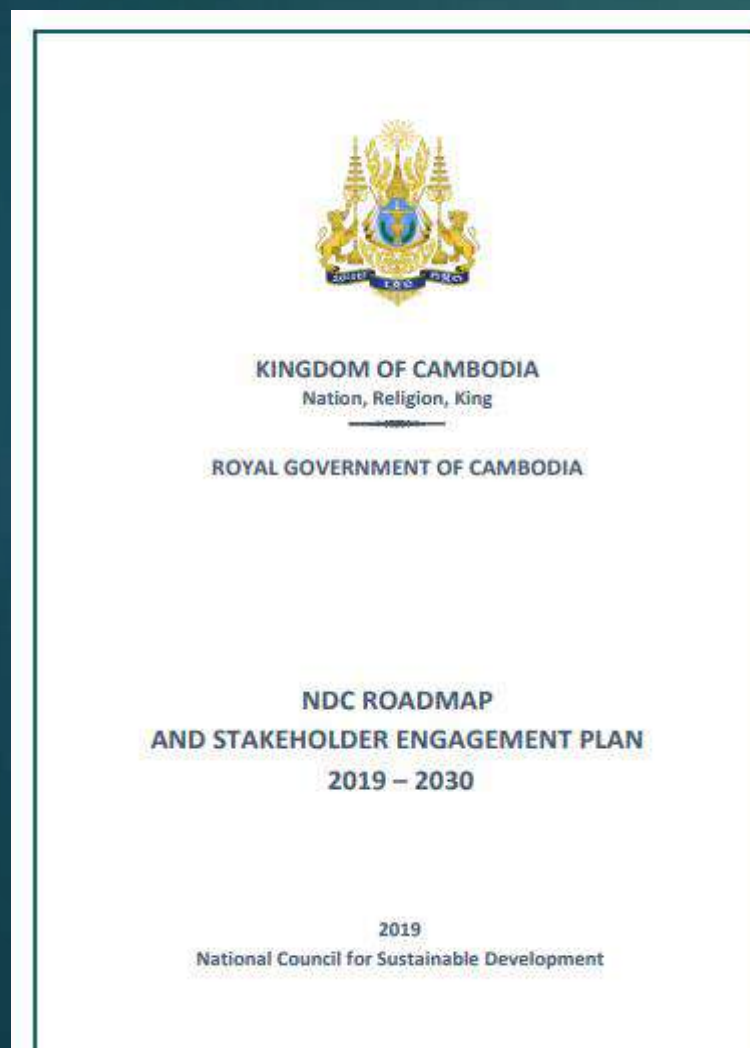
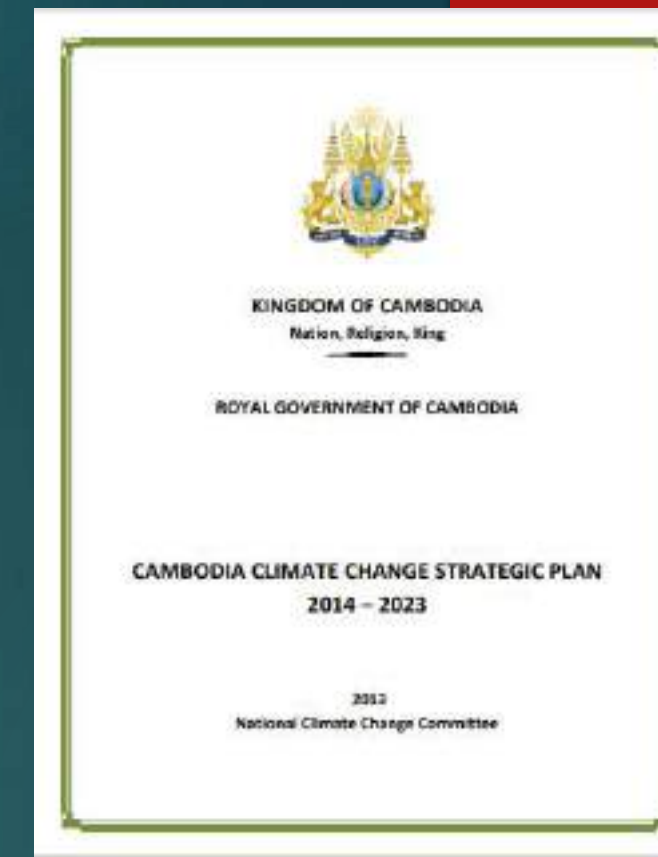
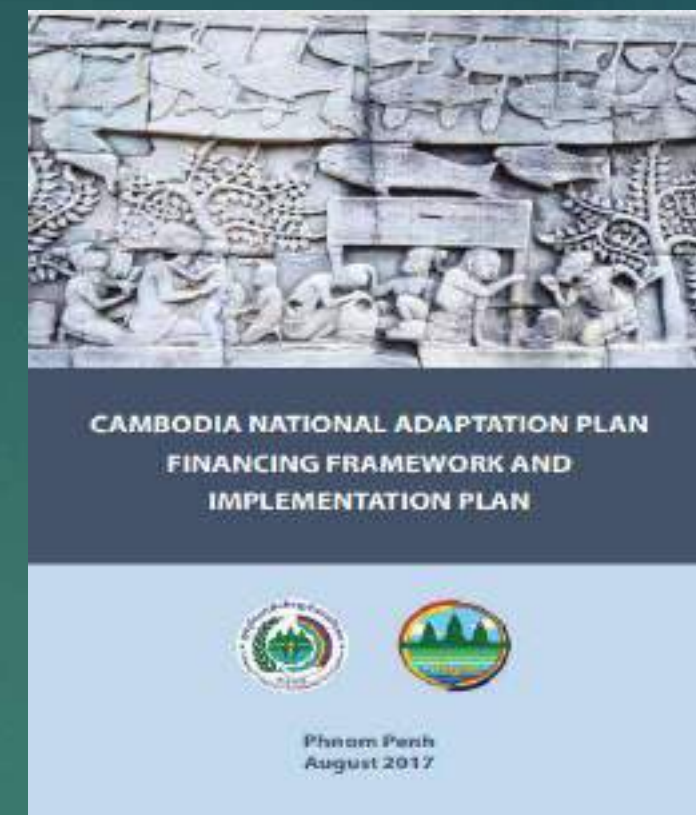
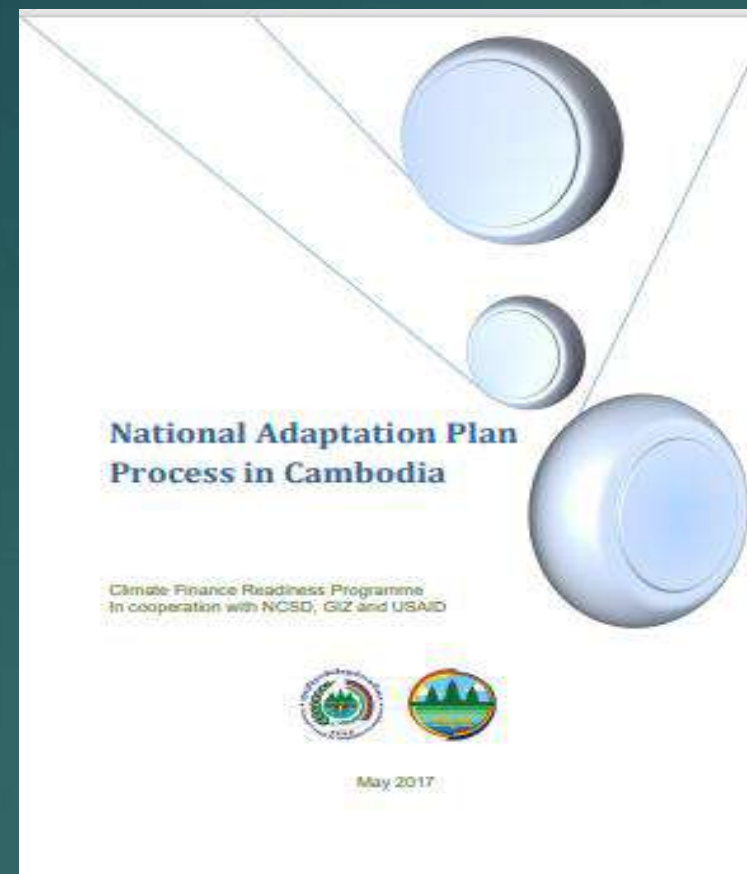
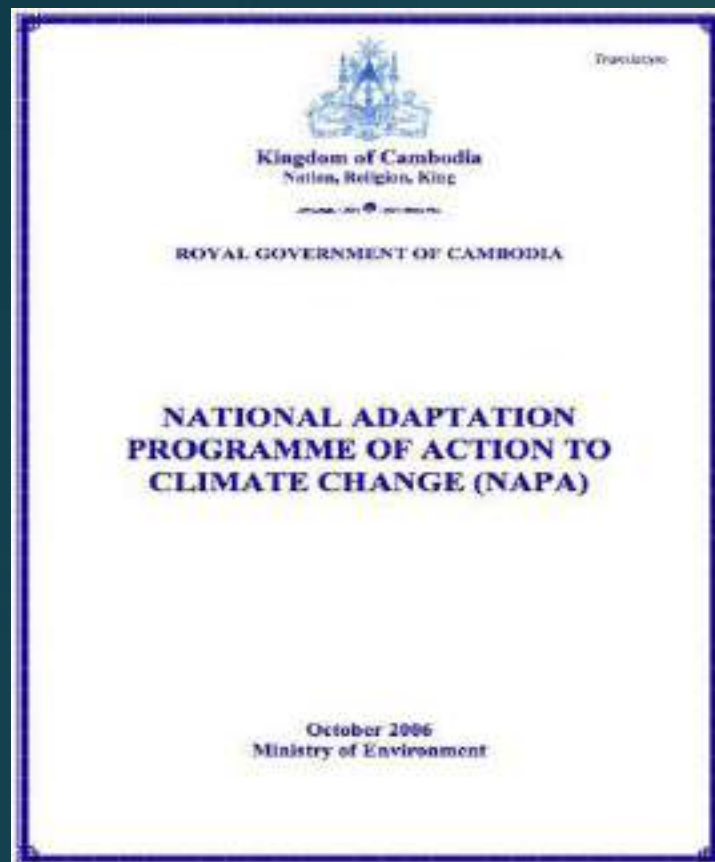


Climate change vulnerability

- ▶ Cambodia is highly vulnerable to the effects of climate change, in particular from floods, droughts, windstorms, and seawater intrusion;
- ▶ Early, conservative estimates for Cambodia: impact of 1.5% of GDP per year by 2030, 3.5% of GDP per year by 2050 if nothing is done;
- ▶ Efforts in addressing climate change in Cambodia cannot be separated from economic development and poverty alleviation goals;
- ▶ Cambodia is proud of the progress made in climate change policy (in particular, explicit efforts have been made in mainstreaming climate change into national and sub-national planning and budgeting).

Cambodia's responses to climate change

- ▶ NAPA 2006 submitted
- ▶ National adaptation plan process in Cambodia (2017)
- ▶ Cambodia NAP financing framework and Implementation plan (2017)
- ▶ Cambodia's NDC Update to the UNFCCC 2020
- ▶ Cambodia Climate Change Strategic Plan 2014-2023
- ▶ NDC road map and stakeholder engagement plan 2019-2030
- ▶ Long Term Strategy for Carbon Neutrality(2021)
- ▶ Third National Communication (2022)

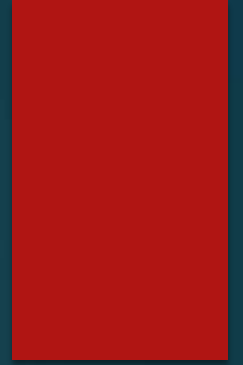


Sustainable Development Goals and Sectoral Policy

Cambodian Sustainable Development Goals (CSDGs) 2016-2030 The goals related to:

- ▶ food security, nutrition, and sustainable agricultural development that increases productivity and production, helps maintain ecosystems and capacity for adaptation to climate change, and progressively improves soil quality (Goal 2); and
- ▶ sustainable use of terrestrial ecosystems including forestry management, combatting land degradation, and halting biodiversity loss (Goal 15).

Agricultural Strategic Development Plan 2019-2023



Outlines the strategic objective to:

- ▶ promote agricultural modernization, competitiveness, quality, safety, nutrition, as well as the effective and sustainable management of land, forestry, and fishery resources.
- ▶ Climate resilience and sustainability are among the core principles addressing the adaptation to, and the mitigation of impacts from, climate change and issues related to agricultural land resources.

Agriculture Development Policy 2022-2030

- ▶ Goal: Promote the growth of competitive agriculture products that provides high quality, safe and nutritious with high consideration for sustainable land, water, forest and fisheries management.
- ▶ Objectives:
 1. Modernization and commercialization of agricultural value chains
 2. Increase public and private investment in agriculture
 3. Promote sustainable growth and increase resilience to climate change
 4. Institutional reform and cross-sectoral issues

Ongoing Development Process

- ▶ Climate Change Priority Action Plan (CCPAP 2023–2030).

By 2030, Cambodia's agriculture will be climate-resilient as it moves towards sustainable agri-food systems using climate-smart technologies and innovations, ensuring sustainable management of natural resources, and leading to prosperity and well-being for its people.

- ▶ Agricultural Strategic Development Plan 2024-2028 for new Government mandate
- ▶ Institutional reform in the Ministry of Agriculture Forestry and Fisheries



Thank you very much for your
kindly attention



Food and Agriculture Organization
of the United Nations



Ms. Jessica Troni

Senior Programme Officer

UN Environment Programme

Pakistan
case study





Context:

- More than 63% of Pakistan's people reside in rural areas and are largely dependent on agriculture.
- Pakistan is predominantly an arid to semi-arid country with 68 million ha of land in areas where annual rainfall is less than 300mm. The major perennial source of water in Pakistan is the rainfall in the upland watersheds and glaciers. Sub-surface waters also play an important role.
- 80%+ irrigated by River Indus. Depends on snow and glacier melt for 50-80% of its flow.

CC: a multi-hazard problem

- Warming: Projected temperature increases in Pakistan are significantly higher than the global average. *
- Heatwaves: Temperatures of $>38^{\circ}\text{C}$ annually. 126 heat waves between 1997–2015 (c. 7 per year) and detect an increasing trend.
- Drought frequency: an annual probability of 25%–65% of severe drought across Pakistan, with higher probability under higher emissions pathways. Large areas of Pakistan have transitioned to ecological zones which are effectively chronically drought affected.
- Rainfall: Mean rainfall in the arid plains of Pakistan and the coastal belt has decreased by 10%–15% since 1960, contributing to the ongoing degradation of the country's wetlands and mangrove ecosystems.
- Flooding: There have been floods in 2011, 2012 and 2014 and 2022 affecting all Provinces. By 2035–2044 an additional five million people could be affected by extreme river flooding annually.
- Glacial melt: Pakistan receives 60% of its water from glacial and snow melt. Temperature change in northern areas of Pakistan is 2X the average global mean. Black carbon deposition an additional factor. *
- Sea level rise: 4,750 km² of the Delta is below 2 m above sea-level. In 20 Century, the average mean sea level rose to 1.1 mm/year for Pakistan. Karachi could witness sea level rise of up to 15 cm in the next 20 years, affecting millions of people. Coastal storms an additional factor.



Impacts on agriculture

Climate change threat include drought, heatwaves, unpredictable rains, flooding, soil salinisation and pests

Increases poverty, food insecurity and malnutrition, hitting agriculture the hardest

80%+ farmers are smallholders with little to no diversification, unpredictable crop yield and poor conditions

2022 floods resulted in c. USD2.3 billion of food crops destroyed – a near total loss.

Impacts on crops

- Crop yield reductions expected due to increasing temperatures, hotter summers and extreme heat days
- A temperature increase of 0.5-2 is projected to decrease productivity by 8-10% by 2040
- Rice is challenged with increasing days above its heat threshold: 36C.
- Sugarcane: may benefit from higher temperatures and flooding
- Fruit crops: apple orchards have seen crop yield decreases by 75% in the last 3 years.
- Cotton: sensitive to higher temperatures. 1C leads to a 24% reduction in cotton plant yield in the vegetative state. Temp over 32C is a problem. Flooding is detrimental.



Adaptation in the agricultural sector

- Can reduce agricultural vulnerability through risk management, crop insurance.
- Water wastage remains a challenge: 60% of irrigation water lost during conveyance or application. Leads to water logging and salinization.

Supporting policies and investments

- NDC, National Climate Change Policy, NAP: all promote climate smart inputs and management in agriculture
- Strong emphasis on nature-based solutions and ecosystem-based adaptation
- Existing nature based approaches:
 - Ten billion Trees Tsunami programme
 - Recharge Pakistan (GCF-IUCN)
 - Climate Resilient Agriculture and Water Management' project (GCF-FAO)
 - Delta Blue Carbon Project

Living Indus: Managing climate change through ecological restoration

- Support will be provided to smallholder farmers to adopt cropping systems that retain or increase soil moisture, require less water, are more heat resistant.
- Biosaline agriculture: barley, cotton, sorghum, durum wheat, soyabean, groundnuts, rice sugarcane and maize. IRR of 14.3% possible.
- Agri-warehousing

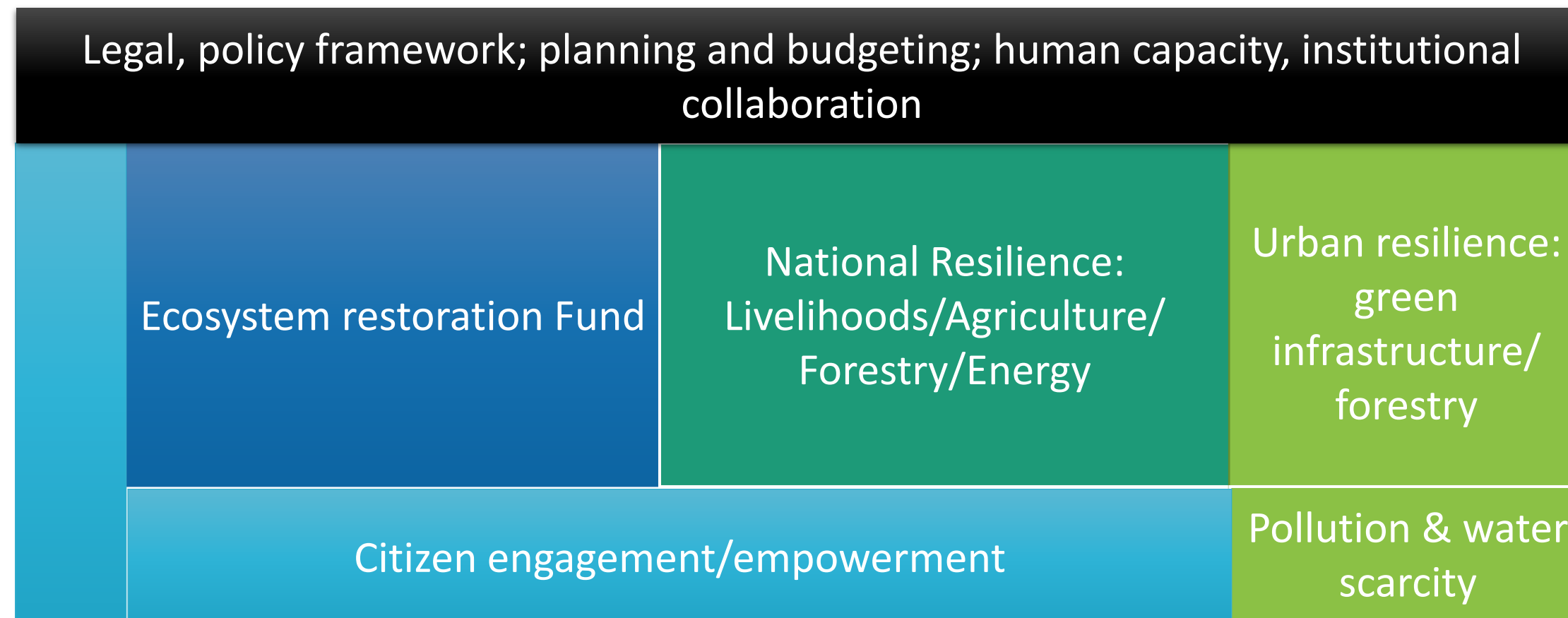
LIVING
INDUS

Investing in Ecological Restoration

Barriers

- Absence of strong legislative, regulatory and policy drivers and enforcement mechanisms coupled with limited capacity to plan and coordinate EbA approaches within and across government;
- Limited capacity of smallholder farmers to adapt and diversify given difficulties in accessing markets and financial services;
- Limited public finance for adaptation and a weak macro-economic outlook.

The proposed approach to implementing the Indus Initiative



Invests in 15 of the 25 Indus Initiative intervention areas. Creates programmatic framework in which others can invest. Strengthen National Accredited Entities.



Food and Agriculture Organization
of the United Nations



Mr. Gabriel Boc

Senior Agriculture and Food Security Specialist

Green Climate Fund



Food and Agriculture Organization
of the United Nations



Audience Q & A

Any questions?

Julia Weatherhogg, UNFCCC Secretariat



Wrap- up and closing

Tuesday 29/08

10:30 – 12:00

UN4NAPs Food Security session

Wednesday 30/08

11:00 – 12:30

Planning for Adaptation and
Resilience: Scaling up Climate
Ambition for Resilience of Land Use
and Agriculture Systems

**Throughout
APAN**

Food Systems Resilience Stream

Thank you

Contact: jane.k.toepper@fao.org



Food and Agriculture Organization
of the United Nations



NAP expo



Food and Agriculture Organization
of the United Nations

Group Photo!

