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Geospatial information for a smarter life and environmental resilience



International
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of Geodesy, Cartography
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Challenges and strategies for adapting climate change in rural development

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Rural development and its importance



- The definition of rural development has evolved through time;
- Rural development does NOT mean only agricultural development. **It's much more than that.**
- Rural development is a **strategy** and it **follows a continuous process** to improve economic and social life of rural people;
- **Growth in agriculture and rural sector of developing countries has a much greater impact in reducing poverty and hunger than do urban and industrial growth.**

Rural development is inevitable for attaining Sustainable Development Goals (SDGs)



In many developing countries over half of the population live in rural areas.

SDGs demands priority to rural areas.

Rural Development Challenges

There are two distinctive characteristics of rural areas make rural uniquely vulnerable to the impacts of climate change:

- First, greater dependence on agriculture and natural resources makes them highly sensitive to climate variability, extreme climate events, and climate change.
- Second, existing vulnerabilities caused by poverty, lower levels of education, isolation, and neglect by policymakers can all aggravate climate change impacts in many ways.

Dasgupta, et al. (2014). Rural areas. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press: United Kingdom and New York, NY, USA, pp. 613-657.

Rural sector is mostly affected by climate change



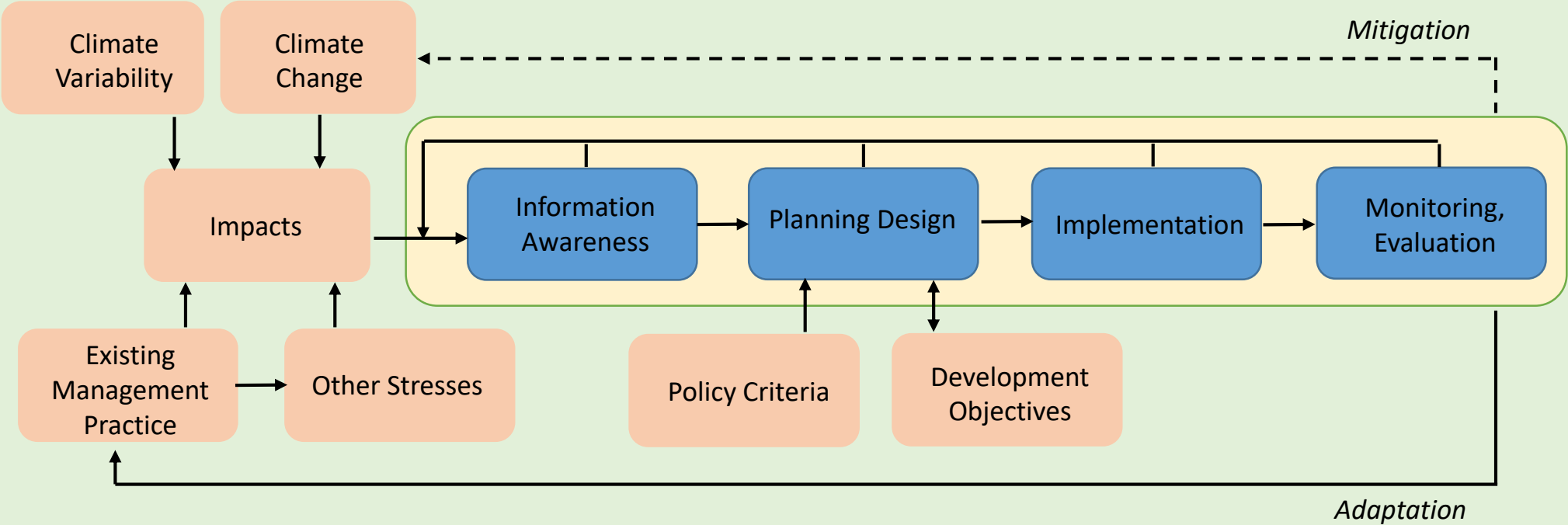
- Water resources
- Soils
- Pest and diseases
- Agricultural productivity
- Ecosystem and biodiversity
- Rural business

Climate change affects food security



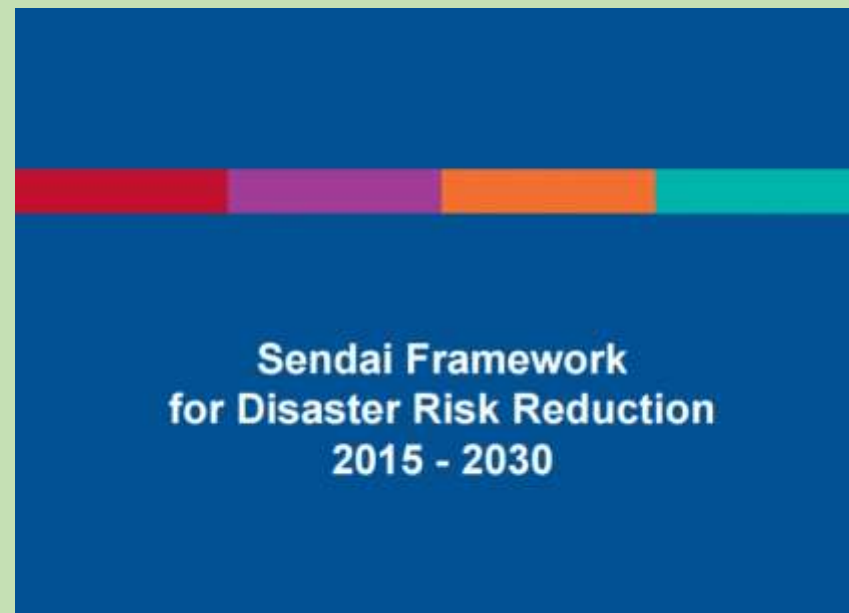
Source: FAO (2017). Leaving no one behind. Addressing climate change for a world free of poverty and hunger.

Adaptation to climate change: a continuous process



Redrawn from UNFCCC (2006). Technologies for adaption to climate change. UNFCCC: Bonn

Adaptation to climate change in global agenda



SDG 13: Climate Action

Methodology:

Overview of Hanns Seidel Foundation

- The Hanns-Seidel-Foundation (HSS) is one of the six non-profit political organizations in the Federal Republic of Germany. It runs around 100 projects in more than 60 countries worldwide.
- Core concern of the international cooperation is fighting poverty and to enhance sustainable development.
- The HSS has been represented in People's Republic of China since 1987. To celebrate 30th anniversary, HSS arranged a conference on 'Land Use Management and Adaptation to Climate Change', April 25-27, 2018 in Qingzhou, China.

Methodology:

Data collection through workshop

- This paper summarizes the key findings of a workshop took place on April 26, 2018 during the conference in Qingzhou.
- Around 60 participants worked in a homogeneous professional group
 - Academics and researchers,
 - Government employees at central level,
 - Development organisations (NGOs),
 - Government employees at local level, and
 - Land consolidation practitioners



Participants are working in a group



Methodology:

Data collection through workshop

The groups answered the following questions

1. What are the climate change challenges rural areas face? How do they affect rural development?
2. What remedies can be taken to overcome the challenges?
3. What should be the role of government and local administration?
4. What should be the role of rural people in climate change adaptation?



Findings of a group



A group presenting their findings

Major Findings:

Climate change challenges and its impact on rural development

- Frequent drought, severe floods, storm and heavy rainfall, thereby affecting agricultural production and food security;
- Development of saline-alkali soil, which limits agricultural production;
- Changes in biodiversity followed by the changes in forest growth and productivity;
- Migration or internal displacement.

Major Findings:

Remedies to overcome the challenges

- Early warning systems;
- Reduction of greenhouse gas emissions from agriculture;
- Adjustment of cultivation period and crop variety;
- Sufficient investment and research in climate-responsive land management;
- Use of climate adaptation technology (e.g. risk assessment technology) and innovative green tools (e.g. green facades, green roofs)

Major Findings:

The role of government and local administration

- Political will is first and foremost important for climate change adaptation;
- To arrange climate finance from the public budget and from other development finance institutions;
- To ensure effective monitoring and evaluation methodologies and processes to the initiatives to address climate change;
- To provide training and advisory services to empower the rural people to face the climate change challenges and increase their adaptivity.

Major Findings:

Role of local people in climate adaptation

- To facilitate to capture local know-how;
- To involve local people, particularly those who are vulnerable to the effects of climate change, in the adaptation process, from planning to implementation phase.

Conclusions

There is no 'one size fits all' solution in response to climate change challenges. As adaptation and mitigation inevitably take place in the local context, without a better understanding of local know-how, there is a risk that climate change adaptation issues are over-looked when rural development programmes are undertaken. Therefore, particular attention should be given to the ability to develop and implement the measures that can build on local knowledge and resources. Taking into account the urgent need for actions to address the effects of climate change, vulnerability and adaptation planning should be implemented across different sectors of rural development, and at different scales with a participatory approach.

Thank You