An Overview of India's Agriculture Adaptation Practices

Climate change and agriculture in South Asia

- South Asia vulnerable to climate change
- Higher temperature, variable precipitation, increased salinity, recession of glaciers, extreme weather events
- Agriculture and its contribution to India's GDP (16.6% in 2009, 13.7% in 2013)
- 72% of the 1.1 billion people who live in rural India, it is still a way of life
- Rain-fed agriculture and hence affected by climate change

Strategies to address the impacts of climate change

New crops and crop diversification

- Development of crop varieties with higher yield potential and resistance to multiple stress
- Replacement of plant types with varieties intended for higher drought or heat resistance

Resource conserving technologies (RCT)

- System of Rice intensification
- Zero Tillage Technology

Use of traditional knowledge

Short term weather forecasting using ICT

- Early warning systems

Some case studies

CGIAR CCFAS

- Andhra Pradesh
- Use of SMS and other print and electronic media to provide farmers with information related to weather, crops, monsoon forecasts, extreme event forecasts, solution to farmers' queries

Integrated farming for climate adaptation

- Eastern Uttar Pradesh – increase in floods and temperatures crossing 45 degrees
- Moving away from mono-cropping to adoption of integrated and diversified farming systems
- Gorakhpur Environmental Action Group – 28 varieties of food crops, animal husbandry, fisheries, poultry
- Reduction in dependencies on external markets

Current collaboration efforts

India-Bangladesh institutional collaboration

- Stress Tolerant Rice for Africa and South Asia (STRASA)
- IARI , ICAR, BARI, BARC – research and training programmes
- ICRISAT AND BARI – pulses programme

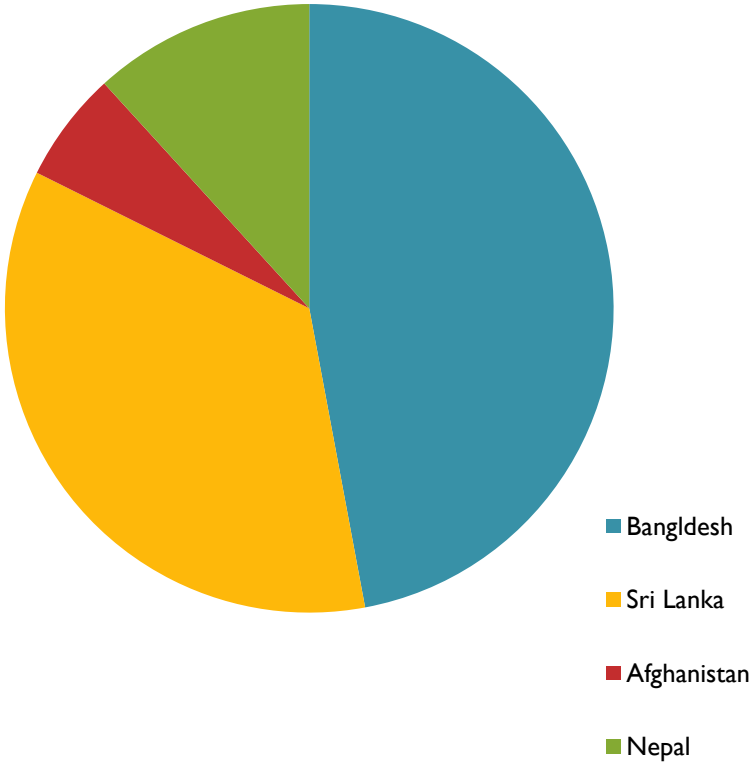
India – Nepal collaborative efforts

- Consultancies and training programmes
- EWS
- ICAR and NARC – exchange of scientists
- CIMMYT and NARC – climate resilient maize

India – Sri Lanka institutional collaboration

- Plantation related research
- Training and capacity building

Types of various collaborative efforts



Mainly consultancies as way of collaborations. Bangladesh takes up the major share

Training is limited to students and research students only

Research collaboration between institutes specifically for climate change is very rare. Most existing programmes integrated climate change in their original programmes

Collaboration

Collaboration of non-state actors

- Research cooperation and knowledge sharing
- Testing of results/new seed in agro-ecological zones
- Technologies for developing resilience
- Training and capacity building

Potential areas for India as recipient of technology

- Floating vegetable gardens
- Salinity resistant crops

Impediments to collaboration

Institutional Barriers

- Lack of leadership role in SAARC
- Weak bilateral cooperation

Role of non-state actors

Disconnect between policy think tanks and grassroots

Recommendations

Strengthening SAARC

- Program specific to agro-climatic zones
- Platform of scientists and policymakers to share knowledge and research

Strengthening bilateral cooperation

- Implementation of regional initiatives
- Consortium of scientists/agriculture research institute on specific ecosystem based issue
- Develop a robust regional climate based cropping model for South Asia

Recommendations

Developing civil society platforms and research networks

- Lots of duplication of efforts
- Collaboration of existing networks on climate change, development and agriculture

Facilitating replicability of projects

- Compilation of successful projects and identification of potential for replication
- India's sharing of success stories
- Creation of replication facilities

Thank you