

## Case Study: 2

# Enhancing climate resilience of Gorakhpur city by buffering floods in Gorakhpur city through climate resilient peri-urban agriculture

( Dec 1<sup>st</sup> 2011 to May 31<sup>st</sup> 2015 ) ( On going project )

### Lead Institution:

Gorakhpur Environmental Action Group

### Partner Institutions:

City Steering Committee



Climate adaptive techniques and time and space management are great incentives for peri-urban agriculture

Conservation of open spaces within city as well in fringe areas is major challenge before Development Authorities and Urban Local Bodies. Unplanned and unregulated growth of human settlements encroach available open areas and make cities vulnerable to climate change impacts. Large scale conversion of agriculture land for non-agriculture uses exacerbates climate change risks of cities by increasing water logging and run-off. Peri-urban agriculture in Gorakhpur provides functional model of enhanced flood buffering of city and sustainable livelihoods of communities by managing open fringe areas around city. Model has the mandate and support of large number of peri-urban communities who believe floods are lesser evil than long months of water logging of living places.

### Project Components:

Project idea borrows partially from principles of ecological agriculture and blends those with development needs of community and parameters of sustainable habitat promotion. Project has four pillars of intervention design.

- Develop models of climate resilient integrated agriculture-horticulture-aquaculture-livestock systems in small and marginal land holdings
- Enhance income and food security of poor and vulnerable population
- Sustainability of peri-urban agricultural lands through implementing regulatory and incentive mechanisms
- Establish and strengthen community institutions for replication of sustainable management of ecological agriculture

### Project Implementing Approach:

Rapid urbanization, population increase and climate change impacts have shoved unprecedented pressure on peri-urban areas. City is losing vital ecosystem services and flood buffering capacities by way of conversion of agriculture land for non-agriculture uses. Project works at interface of urban and peri-urban to develop a community of agriculture practitioners to conservation of farm land and voice for strict implementation of city master plan.

- a) Develop functional models of ecological agriculture and replicate in peri-urban villages
- b) Identify hydrological and hydraulic relationship of urban and peri-urban areas through flood modeling of city and assess cost and benefit of current and futuristic development of city in context of climate change
- c) Capacitate Development and Municipal Authorities by soft advocacy on urban issues and possible solutions

### Key Achievements:

- 1) Community of 950 strong (31.6% of total households) agriculture practitioners federated to promote climate resilient agriculture
- 2) 244 (25.6%) farmers using one or multiple combinations of bio-manure and other sustainable techniques
- 3) Institutional access and capacities of over 1200 farmers developed through Farmer Field Schools
- 4) 24.04% increase in net sown area of linked farmers and 30% increase in cropping intensity achieved
- 5) Increased outreach and extension of programs through government departments and private institutions.

### Lessons Learnt:

- 1) Efficient extension, low input and integrated farming can make agriculture viable and conserve farmland in fringe areas of city.
- 2) Hydrology and hydraulic modeling can substantially minimize recurrent expenditures of Municipal Corporations by cost and benefit estimations of development activities.
- 3) Urban planning must take into account socio-cultural preferences and orientations of people.

### Organisation Details:

**ACCCRN** was launched in 2008 and is funded by The Rockefeller Foundation as part of their 9-year initiative aimed at building Climate Change Resilience. Climate change resilience is the capacity of an individual, community, or institution to dynamically and effectively respond to shifting climate impact circumstances while continuing to function at an acceptable level. Simply, it is the ability to survive, recover from, and even thrive in changing climatic conditions. ACCCRN works at the nexus of climate change, vulnerable and poor communities, and urbanization.

**Gorakhpur Environmental Action Group** is non-profit organization established in 1975. It seeks to build public consciousness on environment, ecological agriculture and livelihoods. Organization has served communities affected by disasters, social inequality and injustices

