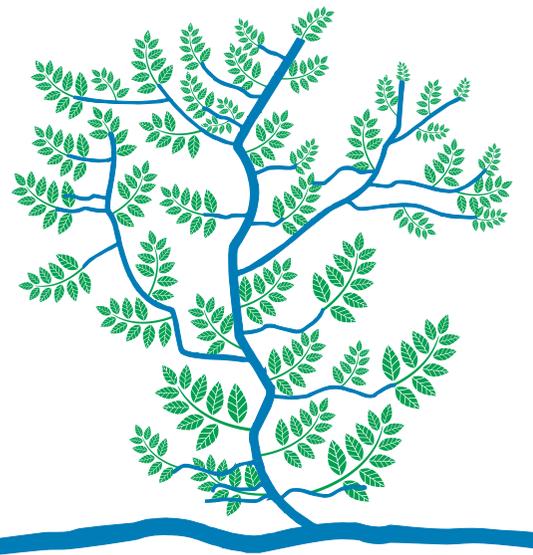


Climate Change Adaptation for Agriculture

Establishing multi-stakeholder platforms - Ramganga and Ganga Mitras to help adapt to threats arising from climate change



WWF – India aims to demonstrate a **framework** for **climate adaptation**, incorporating climate **smart** agriculture and **sustainable** water management **practices** to **reduce vulnerabilities** of people and **improve** base **flows** in the river.

The overall approach of the Climate Change Adaptation pillar under the WWF Rivers for Life Programme focuses on community empowerment, leading to community ownership, management and control of their life choices for the river's restoration and enhancement of livelihood options. The programme is operational in 40 villages across 6 districts of Uttar Pradesh- Bareilly, Bijnor, Fatehpur, Kanpur, Moradabad and Shajahanpur to demonstrate ecosystem based climate

adaptation practices. The interventions focus on re-building the soil health by promoting integrated pest, disease and micro-nutrient management. As a part of these initiatives, use of locally developed organic fertilizers and bio-pesticides called Amrit Pani and Amrit Khad are promoted to reduce chemical applications; to reduce input costs across a crop's life-cycle and increase crop productivity. To enhance the adaptive capacities and to restore ecosystem health, it was envisioned that such climate smart approaches would eventually be integrated into district plans which is currently an ongoing process.



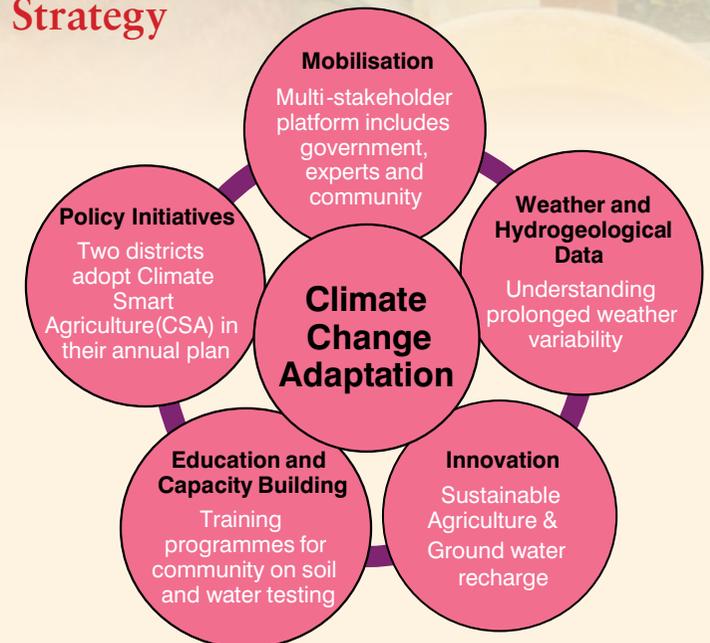
Climate Change Adaptation Model

Joint working groups were formed with senior government officials of various departments and WWF-India. These groups conducted threat mapping exercises in consultation with communities and government officials in six districts (Bareilly, Bijnor, Fatehpur, Kanpur, Moradabad and Shajahanpur) through Participatory Rural Appraisals (PRAs) which highlighted the community's perception of threats to the river and possible solutions in 40 riparian villages spread across the aforementioned districts. The findings of these PRAs were formally collated in the form of a Gram Sabha resolution that paved the way for an inclusive approach towards agriculture and water management leading to benefits for both community and the river.

To build the capacity of these farmers to address these threats, training sessions were facilitated by WWF-India, wherein agricultural experts demonstrated the use of Best Management Practices (BMPs). These BMPs included the use of micro-nutrients to provide a balanced supplement to crops to enhance production, in addition to bio-manure (Amrit Khad), bio-pesticides (Amrit Pani) and Package of Practices (PoPs) for paddy, sugarcane and wheat. These practices are designed to optimize or reduce the use of chemical fertilizers such as Urea and Di Ammonium Phosphate (DAP) without compromising on the productivity of crops. The reduction of chemical compounds in the agricultural runoff would also reduce the pollution load on the river. Beneficiary farmers have reported a decrease in input



Implementation Strategy



cost by 40%, a saving of 385 liters of water per hectare and a subsequent increase in production by 30% during the cropping season of wheat.

Given the critical nature of engaging policymakers at every stage in the process to ensure ownership, sustainability and replication of initiatives, a series of village level sensitization meetings were conducted with the support of the district administration. Multi-stakeholder groups known as Ramganga and Ganga Mitras (Friends of the River) comprising farming communities, government officials and health volunteers were formed in all the targeted villages, they anchor the programme activities.

Results and Final Outcomes

Since June 2014, the programme has reached out to over 10000 farmers who have taken steps to adopt smart agriculture and water practices in reviving the ecological health of the river. In wheat crop, the usage of urea has declined from 60 kg per acre to 20-25 kg and similar is the reduction in the quantity of DAP. In many places, the usage of chemical pesticides has been replaced with bio-pesticides i.e. Amrit Pani. One of the many advantages of collaborating with the Government is that opportunities

existing within the government schemes were identified to leverage funds for the Climate Change Adaptation (CCA) initiatives. For instance, in many villages, wetlands identified as key sources of groundwater recharge, were taken up for rejuvenation as part of the MNREGA (Mahatma Gandhi Rural Employment Guarantee Act). WWF is currently working with the district administrations of Moradabad, Bareilly and Shajahanpur districts to incorporate climate smart practices in their respective district plans.

Sedan, a Ramganga Mitra from Goharpur Sultanpur has played a key role in community mobilization. Having internalized the larger goal of practicing sustainable farming, Sedan has been able to bring community members together to acknowledge their responsibility towards maintaining the ecological health of the river and take action. Sedan does not hesitate to speak up and is often witnessed encouraging other women to share their experiences of adopting the practices so that everyone can discuss the process and compare learning. Sedan's husband is one of the farmers who has adopted PoPs for paddy, sugarcane and wheat while her children have been trained to conduct River Health Assessments highlighting how change can begin at the household level.



WAY FORWARD

The current momentum gathered by the programme is indicative of the potential to embed this adaptation model in annual plans of different government departments like Rural Development, Agriculture etc. The expansion from few hectares to an entire agricultural area over a period of time would then demonstrate a tangible enhancement in the adaptive capacity of people and the ecosystem. So far, this programme has worked with the farmers and government machinery. The next phase of the programme would be to engage with markets and financial institutions.