2021 Country Exchange India

Eleven National Implementing Entities enhance project design capacity through virtual interaction with Indian project stakeholders

ADAPTATION FUND

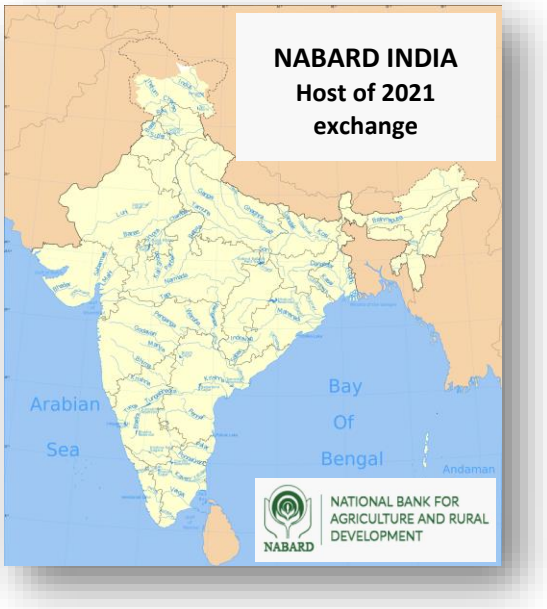
Helping developing countries build resilience and adapt to climate change

Contents

Adaptation Fund projects continuously enhance local capacity building through country exchanges

The Adaptation Fund finances concrete climate adaptation projects and programs that help vulnerable communities in developing countries adapt to climate change. Initiatives are based on country needs, views, and priorities. At its 30th meeting, the Adaptation Fund Board approved the medium-term strategy (MTS)[1] of the Fund for the period 2018 – 2022. The MTS is implemented under three strategic foci: Action; Innovation; and Learning and Sharing. The Action pillar includes three expected result (ER) areas, one of which, ER 2, is that institutional capacity is strengthened. This result area is linked to outputs from identified activities that include the enhancement of local capacity through communities of practice, webinars, country exchanges, workshops, and field visits by the Adaptation Fund Board Secretariat (the Secretariat).

Country exchanges through the Adaptation Fund's readiness program center on field exchange visits[2] between national implementing entities (NIEs) that wish to learn from projects in the same sector or that use a similar model to build their capacity in project design, development, and implementation. The exchanges are also prime opportunities to extract lessons learned and findings from the project implemented by the host country NIE.



India hosts the third exchange virtually

In August 2021, the third exchange occurred in India during three virtual sessions hosted by The Adaptation Fund's accredited NIE, The India National Bank for Agriculture and Rural Development (NABARD). The exchange was hosted from the NABARD Mumbai premises over a two-week period. Eleven NIEs participated representing a diverse array of projects[3].

The general manager for NABARD noted the timely exchange due to the recently released Intergovernmental Panel on Climate Change (IPCC) report, which notes unequivocally that humans are warming the planet[4]. Even with a reduction in CO_2 emissions, the manager noted that the planet is destined to warm by 1.5 degrees Celsius according to the report. He emphasized how urgent it is to act now so that we can adapt to the warming planet.

During this country exchange, NABARD shared valuable lessons learned and findings with other NIEs based on the country exchange themes of food security and climate resilience. These lessons and findings ranged from implementing beneficial, low tech coastal management solutions to the importance of synchronizing climate

[1] *2018-2022 Medium-Term Strategy.*
[2] *Conducted virtually since the beginning of COVID-19 pandemic.*
[3] *Bangladesh, Benin, Costa Rica, Dominican Republic, Federated States of Micronesia, Indonesia, Niger, Panama, Peru, Tanzania, and Zimbabwe.*
[4] *AR6 Climate Change 2021: The Physical Science Basis*

resilient approaches to national policies. All lessons and findings were underscored by the importance of community participation to achieve climate adaptation.

The India exchange also offered insight into the project implementation successes and challenges faced by NABARD. One such success included how NABARD projects in the Himalayas addressed income loss through the introduction of climate-smart farming and improved water-harvesting efficiency.

The NIEs were able to engage with several NABARD stakeholders during the exchange, including the economic advisor for the India Ministry of Environment, Forestry, and Climate Change; the Director of the MS Swaminathan Research Foundation for coastal systems research; the BAIF research development organization; and several direct beneficiaries and community organizers of the various NABARD projects. An Adaptation Fund Board member equally noted that bringing together such a diverse array of stakeholders, NIEs, and beneficiaries facilitates south-to-south cooperation and directly applies the MTS action pillar.

Dr. G.R. Chintala, Chairman of NABARD, delivers the keynote address to exchange participants using an innovative virtual platform.

Thus, in the spirit of the exchange, this report highlights key project successes and lessons learned from the NABARD projects. It also offers additional challenges and lessons learned from the NIEs who participated in the country exchange. Finally, a summary of how the NIEs exchanged information about their respective projects is included.

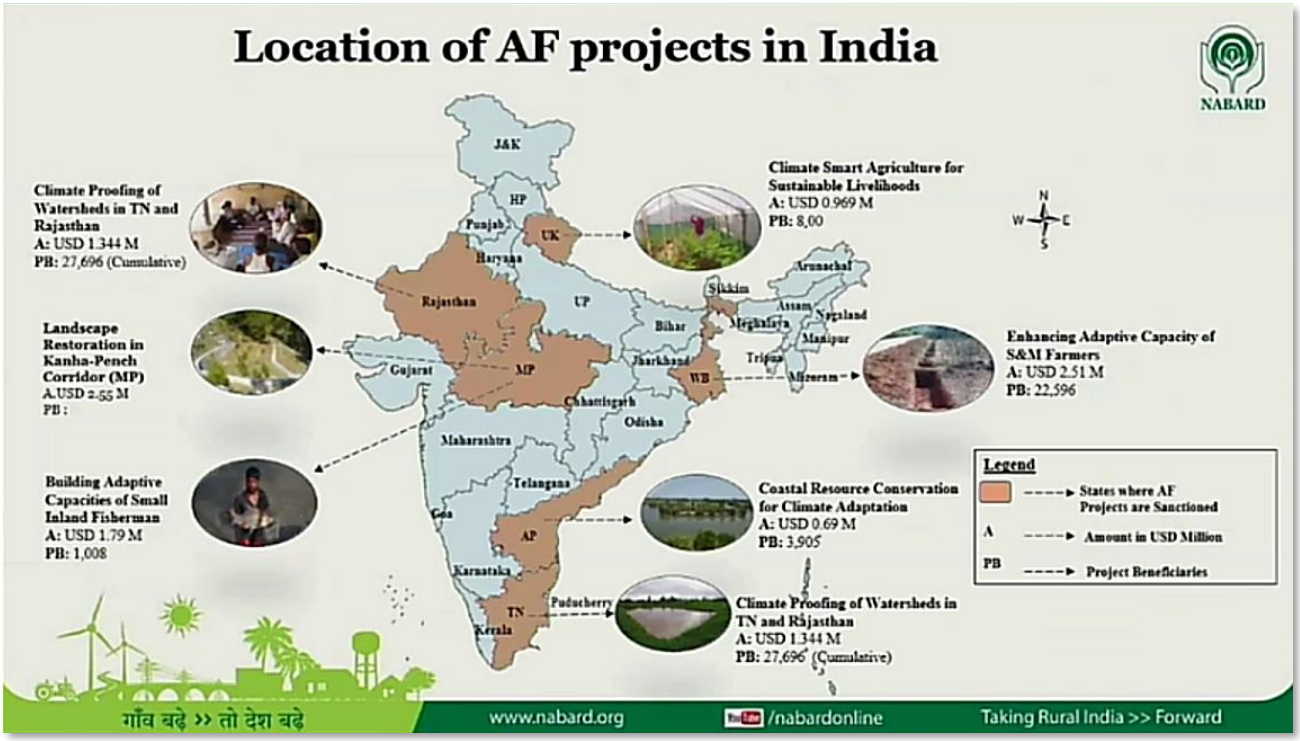
NABARD Exchange and Project Background

The Adaptation Fund facilitated the third country exchange via NABARD's virtual platform allowing for wide participation across the globe. NABARD's approach to combatting climate change is unique, as they have established eight, small-scale Adaptation Fund projects on the ground using US$9.86 million in funding (six concrete projects and two projects under a readiness grant). These projects are established in diverse geographic regions across multiple adaptation sectors[5] reaching 1.9 million beneficiaries.

The projects include the following regions: the northwestern Himalayas, the central Madhya Pradesh region, the eastern region, Rajasthan in the West, west Bengal, and the eastern and southern coasts. Project implementors are addressing sectors tailored to local adaptation needs such as food security, water conservation, coastal management, sustainable livelihoods, forest management, and livestock and fisheries management.

[5] *Note spotlight adaptation story highlighting diverse models*

NABARD chose to pilot diverse models and establish the needed networks and experiences to share knowledge and make a wider change across India. Thirty-five percent of the projects cover climate resilient agriculture and 26 percent cover ecosystem conservation and livelihoods. Water management, fisheries, and coastal resources make up the other project impact areas. Please note the graphic for detailed funding and regional designations:



During the exchange, NABARD highlighted specific results from two regions: Uttarakhand in the northwestern Himalayan region and Andhra Pradesh along the southeastern coastal region.

Uttarakhand is composed of hill communities, which have been impacted by the effects of climate change. For example, there is food scarcity due to the unpredictable weather and lack of snow combined with glacial melting. Fewer livelihood options exist for farming or labor compared to a decade ago.

Project beneficiary in Uttarakhand explains the previous difficulties experienced when retrieving water.

NABARD, in coordination with the State Plan on Climate Change, financed the Climate Smart Agriculture for Sustainable Livelihoods Project, which included the introduction of solar pumps for water harvesting in ten villages along with natural spring rejuvenation. They also introduced what are known as polyhouses (low-cost, bamboo-made, small

greenhouses), which introduced three cycles of crop horticulture promotion annually (compared to one cycle). As a result, more than 800 families have developed a higher resistance to radical weather changes and water scarcity.

In Andhra Pradesh, the Krishna Delta region is heavily impacted by cyclones, which cause coastal erosion and salination of agricultural land. The Coastal Resources Conservation for Climate Adaptation Project was introduced to help local communities establish fish farms and restore mangrove plantations. As a result, residents of the three villages now have sustainable businesses selling farm-raised fish. Additionally, more than 700 hectares of land has been made viable for crop production.

NABARD equally involves local stakeholders and trains them on adaptive capacities. They use the captured coping mechanisms and adaptive strategies to replicate the projects in other regions.

Regarding funding, NABARD uses the Adaptation Fund "direct access" modality, which helps empower the NIE to use development funds in a more efficient and timely manner. The direct access mechanism has been used since 2007, which means NIEs access financing directly, without having funds flow through an international intermediary. Direct Access will be further highlighted later in this report.

Context and impact on India

NABARD provides leadership to rural financial institutions through credit, special projects, and socio-economic programs. This leadership extends to the impacts of climate change on food production. NABARD is striving to help fill the gap in food security and focus on ways to transform the way food is produced. These efforts include developing watersheds to increased access to food production and encouraging entrepreneurship among rural youth. Regardless, bio-physical and social vulnerabilities continue to impact those on the lower end of the economic scale.

NABARD stresses the importance of strong climate-oriented leadership as extreme rainfall, monsoons, and rising sea levels are all impacting India. The Country remains the seventh most vulnerable to climate change impacts[6]. In addition, India endures agroecological vulnerabilities due to relying on predominately rainfed agriculture, which applies to over 65 percent of the country's crop area. Of India's 140 million small holdings, 86 percent are run by small-scale farmers who rely on rain-fed agriculture. This means farmers are more vulnerable to droughts and dry spells. Such vulnerability compounds the food security situation and crop yields could decline by as much as 25 percent over the next decade. Furthermore, 500 million small land holdings are in climate impacted areas. Therefore, a decline in crop yields would not correspond well to the predicted rise in population estimated to be at 1.64 billion by 2050[7].

The food security threat includes the vast population that lives along India's extensive coastline (totaling 7516.6km in length), which is vulnerable to cyclones, coastal flooding, and sea surges. In addition, the cyclones and sea level rise accelerate coastal erosion.

In the mountain regions of Northern India, food security is also threatened by glacier melting and lack of access to potable water. Decreased snowfall and snowmelt mean access to fresh water has been considerably lessened.

[6] *Global Climate Risk Index of 2021*
[7] *UN World Population Prospects*

NABARD is using its extensive development portfolio to combat the effects of climate change and enhance food security for these most vulnerable populations. In addition to eight Adaptation Funded projects, NABARD has thirty projects under the National Action Plan on Climate Change (NAPCC) totaling US$130.38 million and two projects under the Green Climate Fund totaling US$134.35 million.

Communication and community-based planning were recurring themes during the exchange. Many of the NABARD community groups are women led.

NABARD stressed the need for continued funding as entire eco-systems are at risk due to the impact of climate change on soil and water conditions. NABARD projects address this and thus far, more than 2.5 million hectares of land have been treated for improved crop production through civil society and community-led projects. NABARD emphasizes that one-sixth of humanity resides in India therefore, the focus must be on natural resource management. Such management includes carbon-smart practices, livestock management, weather-smart alert systems, and micro-irrigation schemes.

NABARD achieves its current success by focusing on six key pillars:

1. Increase awareness among vulnerable communities.
2. Sensitize stakeholders in provincial government, especially farmers.
3. Manage knowledge.
4. Disseminate knowledge.
5. Mainstream climate-smart agriculture finance through banks.
6. Use technology whenever possible to mitigate and adapt to climate change risks.

The pillars correspond to NABARD's commitment to the Sustainable Development Goals and efforts to reduce greenhouse emissions as outlined in the 2015 Paris Agreement[8].

NABARD synchronizes with National Plan

Fortunately, India's initiatives toward climate change are well reflected in its national policy, the National Action Plan on Climate Change (NAPCC). The NAPCC was launched in 2009 to fulfill India's vision of sustainable development while yielding co-benefits for addressing climate change. The Plan lays the pathways for a directional shift in India's response to climate change with eight core missions ranging from promoting a health and sustainable way of living to achieving 40 percent installed capacity from non-fossil fuel by 2030.

The Government of India also directed all state governments to prepare their own action plans on climate change, which correspond with the national plan. Over 20 states are already implementing their plans and regularly deliberating with sector experts to correspond with local climate initiatives.

[8] *Legally binding international treaty on climate change adopted by 196 Parties at the Conference on Parties, 12 December 2015.*

Direct access modality facilitates project implementation

In 2012, NABARD became an Adaptation Fund National Implementing Entity, then shortly afterward a Direct Access Entity. The Direct Access approach aims to ensure that projects and programs are more nationally relevant and better connected to the development plans and climate change strategies of each country. NABARD takes full advantage of Direct Access to finance its eight projects totaling US$9.86 million and synchronize them with the NAPCC.

NABARD's efficient financing mechanisms highlight the benefit of the Direct Access modality. Global financing for effective climate change adaptation (and mitigation) has been recognized as inadequate to meet the enormity of the challenges facing the global community. Readiness and capacity building support are situated within this landscape and suffer also from the paucity of funds. Fortunately, the financing mechanisms of the United Nations Framework Convention on Climate Change (UNFCCC), including the Adaptation Fund; Green Climate Fund; and Global Environment Facility, have developed readiness and capacity building programs that are providing diverse, complementary support totaling US$40 million annually. This funding enables climate change adaptation and mitigation readiness, with the Adaptation Fund providing about US$1 million annually specifically for adaptation.

Sharing Experiences, Solutions, Lessons Learned from the NABARD Projects

NABARD wanted to continue the successes from the previous country exchanges by focusing on experiences related to food security and climate resilience. These experiences were highlighted via presentations of lessons learned from various NABARD and Government stakeholders. NABARD also ensured beneficiaries offered direct input related to the projects through live feeds from the two regions of Uttarakhand and Andhra Pradesh.

Overall, NABARD emphasized several collective lessons learned from all its Adaptation Funded projects:

1. Implement a bottom-up approach starting with community participation and stakeholder consultations at each level.
2. Align with all State and National Policies.
3. Initiate effective monitoring using existing State and National mechanisms. There is no reason to reinvent what already exists.
4. Focus on climate resilient interventions such as biogas, solar pumps, water budgeting to name a few. This also applies to climate-smart agriculture such as micro-irrigation schemes and polyhouses.

Dr. A.V. Bhavani Shankar and Dr. Rajashree Joshi interact virtually with project beneficiaries in the Himalaya region of India.

NABARD also specified experiences, solutions, and lessons learned from two of its Adaptation Funded projects, which are highlighted in the next section of this report.

NABARD Experiences from two States

NABARD emphasizes that involving local communities from the beginning is essential. Before any project begins, NABARD sensitizes the communities and proposes an approach – ranging from financing to technical assistance.

In Uttarakhand and Andhra Pradesh, such interaction with the community have ensured the projects remain sustainable and durable. NABARD also emphasized during the exchange that they wanted their projects to be "beacons" for other regions, which are facing similar climate-related challenges.

NABARD approaches its role as an NIE using a five-step process:

1. Proposal development and scrutiny,
2. Project management,
3. Disbursement of grants,
4. Capacity building of various stakeholders,
5. Collaboration with international institutions.

In turn, the local executing entity is expected to prepare the project concept note, organize a project inception workshop with all stakeholders, prepare the work plan, and implement the project including all monitoring and reporting.

Food security and climate resilience

In Uttarakhand, the increased vulnerability of agri-horticultural areas meant former apple orchards had to be shifted to higher altitudes. In addition, water availability became crucial due to extreme weather events including flash flooding. These vulnerabilities meant an absence of livelihoods which, in turn, lead to a migration of productive labor. For those who remained, the challenges of seeking water and maintaining a viable livelihood created harsh living conditions.

The NABARD-led climate smart actions and strategies project was sanctioned in 2015 for a period of four years to address the food security and livelihood issues. The goal of the project has been to improve adaptive capacity of rural small and marginal farmers in the Champavat District of Uttarakhand. US$.969 million was allocated for the project and the executing entity has utilized .635 million thus far.

NABARD helped to introduce a combination of climate-smart farming technologies, such as the polyhouses, and suggest ways to diversify income through different natural resource management strategies. They were able to achieve this through strong community mobilization. However, there were some significant challenges.

At first, the community hesitated in adopting the new technology and the mountainous terrain proved difficult for project implementation. Fortunately, ten village climate committees were eventually formed who, in turn, helped form various interest groups. These groups included discussions relating to dairy, orchards, water, pastures, and polyhouses. Implementation soon followed.

As a result, local vegetable cultivation has been protected through high value crop diversification. Additionally, the new technologies introduced helped rejuvenate 15 natural springs benefitting more than 700 hectares of farmland. Finally, the capacity building efforts led to better collective planning, which has helped the local community to better sustain its efforts and increase their food security.

In Andhra Pradesh, repeated cyclone strikes and the increased intensity of storm surges due to sea- level rise led to major flooding along Krishna Delta region. Sea water intrusions into ground water also negatively impacted wells and farmland. A large number of the community suffered due to severe crop loss and soil degradation, resulting in wide-spread migration to other areas.

The NABARD-led coastal resources management project was established in 2014 for a period of six years. The goal of this project has been to enhance to adaptive capacities of the local community and stakeholders by restoring and managing coastal resources such as mangrove forests and fish farms. $US .689 million was sanctioned and $US .623 has thus far been utilized.

Local community implementors plant mangrove seedlings in Andhra Pradesh.

NABARD coordinated an assessment of natural and social system vulnerabilities due to sea-level rise, plus built the capacity of stakeholders through extensive training sessions. NABARD aimed to integrate ecological security through the development of replicable models. Three villages were mobilized, and 1500 people were trained in mangrove restoration and fish farming culture.

However, there were certain challenges the project faced. It took some time before the Forest Department would approve the mangrove plantation and the choice to farm crabs resulted in a disease that forced the producers to switch to shrimp and fish. Also, excavating the ponds took a significant amount of time, and the slow growth of the mangroves made assessing the long-term impact more difficult.

Regardless, 200 hectares of mangroves were replanted for coastal protection. 50 hectares were developed for shrimp farms and 10 special cages were constructed for sea bass fish farming. These efforts helped to improve the food security and climate resilience of the region and the low technology solutions meant the project remained more sustainable. For example, the mangrove plantations are mostly maintenance-free, and the fish farms rely on natural tidal schedules to keep the water fresh.

Collective planning and low technology solutions are essential

Additional lessons learned involving collective planning and low technology solutions from the projects were the following:

1. Well planned capacity-building at the community level will lead to better collective planning.
2. Low technology solutions are easier to maintain, such as relying on tides to aerate fishponds rather than pumps.
3. Sector-integrated approaches are essential.
4. It is important to include regional and state level plans as part of project design.
5. Projects should address livelihood sustainability using co-financing.
6. Public/private partnerships are key.

7. Lack of national and regional, viable agricultural data hinders planning.
8. Mitigation measures must be built into the project design.
9. The introduction of high-value crops will speed-up income generation.
10. Flexibility in approaches is key (this allowed the switch from crab farming to cage farming for fish).

These lessons learned also include the importance of mutual planning with the Forestry Department and the need for impact analysis in order to help avoid unsustainable approaches. NABARD delegates funds only to scalable solutions and always works in tandem with the Ministries of Forestry and Climate.

To help improve the approach for the fish farming, NABARD used experience gained from its projects in east Bengal. This experience helped improve the fishpond design. In general, locally contextualized solutions are key.

Moving forward, NABARD emphasized the need to scale up its innovative projects. It also noted that the current mix of funds is inadequate, and more support is needed from various national and international agencies. Estimates for needed funding related to climate resilient initiatives are in excess of US$206 billion, as noted by the NABARD chairman. Additionally, NABARD needs to further mainstream climate financing and sustainable development projects and allow for climate financing concessionality. Finally, NABARD will continue to leverage lessons learned for the better implementation of projects.

Seven key challenges addressed by NABARD

NABARD addressed seven key challenges faced while implementing their projects. The following section offers more insight into their approach to meet each challenge and results gained from sharing this knowledge with the attending NIEs.

Challenge: Manage environmental and social risks, including environmental impact assessment, and gender considerations

Throughout the exchange, NABARD highlighted numerous examples of the social aspect of managing environmental risks. Specific to gender, NABARD emphasized that one third of management board members (for community-led projects) are women. In addition, NABARD follows environment, social, and gender compliances for all its projects during formulation and implementation. Do achieve this, they must train the implementing entities on ensuring gender compliance.

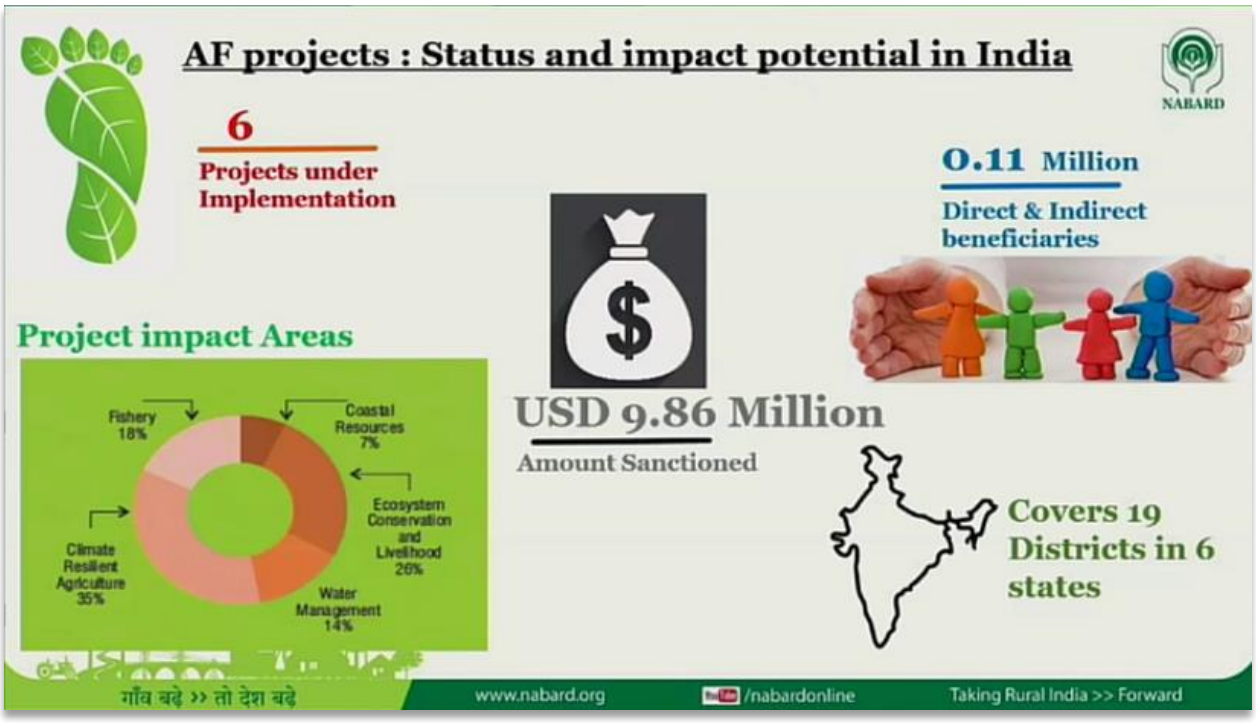
Many of the interventions are women-led, and this was demonstrated during the NABARD-produced video of the Uttarakhand and Andhra Pradesh projects. The NIEs heard first-hand from women who were directly implementing the water harvesting and polyhouse phases of the project via the video and through live streams.

Specific to the Himalaya region, NABARD's key partner BAIF outlined their gender sensitive strategies and efforts to recognize local knowledge and capacities. Therefore, the Uttarakhand project stakeholders ensure women implementers have their skills and capacity developed and that women-centric community-based organizations are established. In fact, climate smart adaptations for the region are designed to address the gender issues of exclusion, feminization of agriculture, vulnerability to climate change, increased drudgery, and lack of household decision making.

Community-led development starts with household survey and interacting with local leaders.

NABARD takes a local view when it comes to managing environmental and social risks. To assess the vulnerabilities of natural and social systems, NABARD seeks to capture local coping mechanisms and adaptive strategies as part of their impact assessments. They then train and build the capacity of the stakeholders on adaptive capacities with the aim of strengthening livelihoods.

An example of this approach can be seen with the Krishna Delta mangrove bio shed project, with which NABARD integrates the ecological and livelihood security of coastal ecosystems. They achieve this partly by conducting a detailed village household survey noting land holdings, genders, and existing aqua farms. NABARD



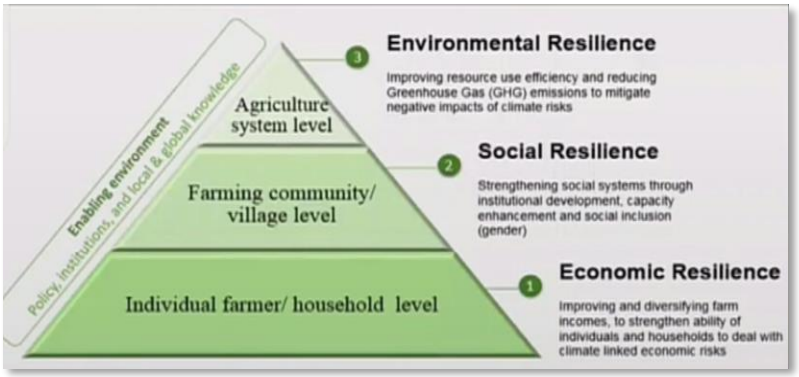
implementing entities also seek to develop and demonstrate replicable models of sustainable seawater-based aqua farming, which helps with the effects of sea level rise.

In Uttarakhand, the ecological impact from the project was significantly positive and resulted in the regeneration of 136 hectares of native tree species, revival of local biodiverse crops, plantation of 120,000 new trees, and the eco-restoration of community pastoral land.

NABARD stresses its bottom-up approach through two key components:

1. Community mobilization and orientation meetings, during which the community is organized, and village-level institutions formed.
2. Training and capacity building, during which community members are trained in the relevant field such as mangrove nursery development. Forest department members also receive training as needed.

Within a farming community, this bottom-up approach is well represented by the following graphic:



Challenge: Implement efficient systems for procurement

As NABARD is a development finance institution, they have a unique advantage when it comes to procurement. In order to transfer technology to the farmers, credit is needed along with the timely movement of funds. The Direct Access modality integrates well with NABARDs existing procurement systems, and also links with national and state procurement systems.

NABARD has its own department of premises security and procurement, which receives direct oversight from the central vigilance department. The vigilance department promotes the integrity and transparency of the Bank's functionality, including areas of procurement.

NABARD also leads in producing credit products for agriculture and rural development and has been doing so for 30 years. Part of pioneering this approach starts with promoting agroecological principles. Such principles are important to, in turn, promote a circular economy.

Challenge: Implement project monitoring, oversight, measuring impacts, and financial and non-financial reporting

NABARD uses an extensive system for the monitoring and reporting of its project data. The system starts at the national level, then filters to the regional and finally the state. NABARD's monitoring policy matches the current Government structure.

At the project level, monitoring and evaluation systems help ensure monthly reports reach regional officers and quarterly reports are available at the regional level. The implementing entity is trained extensively on how to conduct monitoring and evaluation visits. Additionally, the reporting is carried out through a phone-based app, which helps reduce errors. The app also ensures real time monitoring and reduces the amount of field visits needed from regional officials.

NABARD also leads comparative analyses from the project level to ensure accuracy of reporting. These analyses are conducted jointly with Government officials to ensure transparency. Government officials also accompany project implementers on field visits.

Technology is also infused with the monitoring and evaluation system. For example, there are remote sensors which monitor water levels for the related projects, and this data is shared directly with Government measurement mechanisms.

The biggest challenge thus far has been the restrictions on travel due to COVID-19. However, the receipt of real-time data through the app has helped alleviate some of the loss of interaction from the regional and national stakeholders.

Challenge: Enhance knowledge management, documenting best practices and initiatives beyond the project

NABARD excels in knowledge management and documenting best practices through its extensive partner network. In 2018, NABARD launched the Centre for Climate Change with the aim of accelerating concerted climate action by various stakeholders. The Institution extends professional support to stakeholders and offers best practices for designing climate sustainable projects. The Institution also promotes collaboration for research and academia, extending its reach to other continents such as Africa.

NABARD also created a capacity building center to create awareness among policy makers as part of its collaboration with the German development agency GRZ.

Finally, NABARD's Deputy Managing Director emphasized their commitment to managing and disseminating knowledge using any available technology. To help achieve this, NABARD's extensive website contains hundreds of project documents and best practice documents available to the public[9].

Challenge: Ensure institutional and support requirements for success

The Economic Advisor for the Ministry of Environment, Forestry, and Climate Change addressed the NIEs on national endorsements and priorities. The advisor reminded participants that a member of the Indian delegation helped broker the 2015 Paris Agreement and shortly after, India strengthened its policy framework for climate action. As part of this framework, NABARD plays a key role as a multi-lateral finance institution.

Specific to climate change, the NAPCC has been updated with the latest Paris Agreement developments. Since 2015, the Plan includes a stronger focus on health, coastal protection, and transport. The Federal policy structure includes sub-national governments and state action plans.

[9] *www.NABARD.org*

The advisor noted the important role NABARD and the Adaptation Fund play in scaling up Indian climate change strategies as key partners. The Plan prioritizes the most vulnerable regions to climate change. India's initiatives towards climate change include eight missions:

1. National solar mission,
2. National mission for enhanced energy efficiency,
3. National mission on sustainable habitat,
4. National water mission,
5. National mission for sustaining the Himalayan ecosystem,
6. National mission for a green India,
7. National Mission for sustainable agriculture,
8. National mission on strategic knowledge for climate change.

These national missions are further elaborated upon by the State Action Plan:

1. Climate profile of state,
2. Assessment of vulnerability to climate change,
3. Greenhouse gas emissions and energy needs,
4. Climate change strategy,
5. Climate change action plans.

NABARD is therefore an integral part of these plans and its climate funding stems from the three key sources noted previously: The Adaptation Fund, the Green Climate Fund, and the National Adaptation Fund for Climate Change.

Challenge: Create communication activities with main stakeholders

Throughout the Exchange, an underlying theme was NABARD's emphasis on maintaining strong communications and relations with its main stakeholders. It was for this reason that NABARD was able to host the exchange and secure the direct input of its partners to the NIEs. Many of the presentations of the Exchange were from NABARD partners, stakeholders, and beneficiaries.

NABARD set up a corporate communications department in 2011 to implement a strategy of efficiently disseminating information on rural development. NABARD follows its communication strategies and brand development by consistently engaging with the media, documenting projects through film, managing an active online presence, and producing numerous publications.

Thus far, NABARD has documented its credit and non-credit interventions through several films, two of which were shows during the Exchange. NABARD also publishes an in-house journal and corporate brochure; the latter is available to all stakeholders and highlights key metrics. NABARD's social media presence is equally extensive. The majority its communication activities include input from major stakeholders.

Challenge: Ensure project is sustainable

Sustainability is a central tenet of NABARD's projects. To ensure sustainability, NABARD emphasizes several key recommendations:

- Ensure project is community driven.
- Use low-tech solutions when possible.
- Link project goals to national and state plans.
- Train stakeholders in project management.

Adaptation Funded projects that remain sustainable include the fishpond initiative in Andhra Pradesh. To achieve this, the ponds were developed to be low maintenance and filtered naturally by tides. The same system applies to the mangrove plantations and even necessities such as seeds are low cost. Additionally, all NABARD-led projects integrate into existing Government programs to avoid establishing too many separate initiatives.

In Uttarakhand, the implementation is community-led and many of the polyhouses and water committees are women-owned and led. Ownership by the community is the key to sustainability.

Private sector services are also employed for areas outside normal expertise, such as weather forecasting services, certain financial forecasting, and the latest techniques for improved farming efficiency.

Participating NIEs Use Country Exchange to Add Value to Their Own Projects

Nine NIEs were invited to share their project approaches during the exchange. As with the Chile and Senegal exchanges, the sharing of information often leads to the adoption of best practices and implementation of lessons learned. The Adaptation Fund ensures climate change-related technical challenges faced by other countries can be used to better inform similar projects.

This section examines updates from various NIE projects as well as lessons learned thus far.

Bangladesh

The Palli Karma-Sahayak Foundation (PKSF) of Bangladesh is one the Adaptation Funds newest accredited NIEs (August 18, 2021) under the Direct Access modality. PKSF was accredited through the "fast-track" process between the Adaptation Fund and Green Climate Fund.

Dr. Nomita Halder, managing director of PKSF, presents her foundation's work to NIEs.

PKSF focuses on poverty reduction through employment generation - mostly self-employment. It works with 278 partner organizations throughout Bangladesh and has 50 major projects. While there is no current direct access project implemented by PKSF directly, the Adaptation Fund sees the PKSF as a compliment to the existing arrangement with the United Nations Development Program (UNDP), which currently implements an Adaptation Fund US$10 million sea-rise-impacted coastal and river community project. PKSF specializes in reaching the most vulnerable communities with adaptation solutions.

PKSF noted that Bangladesh is the country most vulnerable to the impacts of climate change. Such impacts include extensive coastal flooding along the eastern coastal regions and negative changes in the already fragile ecosystem. The newly approved PKSF project is focused on financial management mechanisms aimed at self-employment generation in rural areas. Key focus areas include micro-enterprise, establishment of fisheries, social advocacy, and research and development.

PKSF noted the helpfulness of hearing from the other NIEs and plans to apply their lessons learned accordingly. PKSF's accreditation will enable them to reach the more vulnerable communities with needed adaptation solutions, and they look forward to proposing new projects.

Benin

The Adaptation Fund NIE, the National Fund for Environment and Climate (FNEC) of Benin, is a public institution with financial autonomy under the remit of the Ministry of Living Environment and Sustainable Development. FNEC is a funding mechanism for programs and projects within the scope of protecting and managing the environment, combating the harmful effects of climate change, and promoting sustainable development in Benin.
FNEC is in the planning stages of their newly approved agroecological project, which focuses on the rehabilitation of the Cotonou Channel. The rehabilitation of the Channel will contribute to the adaptation of the climate change-impacted Nokoue area – a sensitive ecosystem just west of the capital.

The Channel has existed for 135 years and effectively regulated flooding in Cotonou. However, sea level rise and the changing climate has caused an increase in flooding due to Channel's inability to adapt to the increased water flow. FNEC will work to rehabilitate the channel and adjoining dam to reduce flooding, which includes developing adaptive capacities for local communities and ensuring Lake Nokoue (a type of lagoon west of the capital) remains healthy.

FNEC recently had their Adaptation Fund concept note approved and are now in the environment and social impact assessment stage. Challenges FNEC anticipates include dealing with a difficult geographic area, lack of local data, and dealing with non-permanent homesteads. In fact, the lack of environmental data has been a common theme during the NABARD exchange. COVID-19 has also impacted the planning and reduced the capacity of FNEC to work closely with the communities.

FNEC's next steps are to conduct hydrological, bathymetric, and topographic studies of the lagoon to assess the Channel impact. FNEC will also conduct a detailed trend analysis based on available historical data to ensure good risk assessment modelling. Finally, FNEC will use endogenous practices to guide their vulnerability analyses, which ensures community-centric development.

Costa Rica

The Fundecooperación is the Adaptation Fund NIE for Costa Rica and they implement the Adapta2+ Program. The objective of this Program is to reduce the vulnerability and improve the resilience of local populations by focusing on critical sectors – all of which in an effort to reduce the negative impacts of climate change. The main sectors highlighted by Fundecooperación during the exchange were agriculture and water.

Fundecooperación's main role is to manage funds in support of innovative projects related to sustainable development. They act as a bridge connecting international cooperates, local institutions, communities, and small-medium size enterprises. They have 40 entities implementing at the country level involving many stakeholders ranging from Government to academia. This poses its own unique set of challenges when ensuring the projects remain community driven.

Challenges highlighted by Fundecooperación include the complex coordination between stakeholders and attempts to empower communities virtually during COVID-19. Fundecooperación noted the difficulties of guaranteeing the

participation of producers, local leaders, and community organizations in each critical area. One way Fundecooperación dealt with this was to play a transversal role and mediate between stakeholders.

Fundecooperación also faced challenges related to local leadership in certain sectors. Therefore, they find it important to consider the local environmental, social, and economic factors combined with the generation of interest at the national level. Every proposal must generate an economic and social benefit in order to ensure improvement.

Related to NABARD's emphasis on flexibility, Fundecooperación equally noted the importance of remaining flexible during COVID-19 to achieve impacts. The use of e-platforms and e-learning materials has helped to achieve such flexibility. Due to the complexity of communicating virtually, Fundecooperación finally noted the importance of local empowerment and ownership. They use such these concepts to achieve the objectives with limited, in-person interaction and only virtual monitoring at the local level.

Dominican Republic

The Instituto Dominicano de Desarrollo Integral, Inc (IDDI) is a Dominican-based non-profit organization focused on socioeconomic transformation of communities. IDDI concentrates is activities in rural and urban areas in the Dominican Republic as well as Haiti. Their Adaptation Funded-project aims to enhance climate resilience in the San Cristóbal province through an integrated water resources and rural development program.

Especially in the northeastern region, the Dominican Republic is vulnerable to floods and mudslides following severe storms. The northwestern region is more vulnerable to drought. IDDI works with 24,300 beneficiaries to improve resilience capacity to climate risks. This is done through the construction of potable water and sanitation systems along with reforestation and conservation of 2722 hectares of land.

During the exchange, IDDI emphasized the need to move beyond training of stakeholders and more toward empowering them. To do this, the capacity of local project implementors must be strengthened along with awareness building amongst the local population. An example of how IDDI helps their stakeholders be empowered can be seen with The National Institute of Drinking Water and Sewerage. The Institute advises on an aqueduct project for potable water. IDDI participates with the Institute's technical staff who, in turn, support the training and supervision of the water project operation. IDDI emphasized that women play a fundamental role in leadership through their Aqueduct project.

Additional challenges highlighted included the difficulty in disseminating information documents to the local population and promoting alternative livelihoods to local communities. Many communities are unable to farm as during previous generations due to the effects of climate change. Finally, IDDI noted the similarity with the Indonesia project and incorporating efforts into the national plan. IDDI stresses the important of ensuring all sectors are included in the assessments and project design.

Indonesia

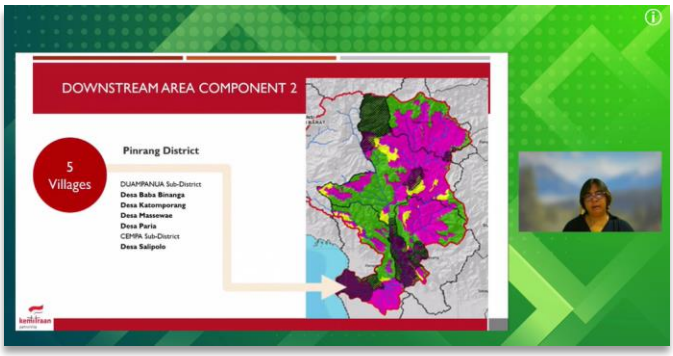
Indonesia's project entitled, "Community Adaptation for Forest-food Based Management in Saddang Watershed Ecosystem," began in October 2020 and the initial concept was presented at the Senegal Exchange. A risk study carried out in the area shows that 93 percent of villages in the watershed are vulnerable to climate change. Increased rainfall has equally caused various disasters in the watershed area - 342 times from 2009-2014 in the form of landslides and floods.

These disasters resulted in about a 66 percent decrease in rice crop food productivity within the surrounding communities. The productivity of agricultural and plantation products also lessened due to the decrease in arable land capacity in the area of the Watershed.

Implemented by the NIE Environmental and Climate Change Adaptation Consortium (Konsorsium Adaptasi Perubahan Iklim dan Lingkungan or KAPABEL), the main objective of this program is to increase resilience to food security of the community of Saddang Watershed ecosystem. This project is an effort to adapt to climate change, which focuses on the following:

1. Strengthened Social Forestry in encouraging forest food in the upstream of Saddang Watershed, which has implications for the improvement of the environment and the increase of people's income;
2. Improved coastal governance and carrying capacity in support of climate change adaptation downstream of the Saddang Watershed;
3. Strengthened crosscutting policies in ensuring the sustainability of climate change adaptation and;
4. Capacity building and stakeholder support on climate change adaptation through knowledge dissemination and management.

KAPABEL is still integrating its approach within the target communities, so their lessons learned are fairly limited at this time. However, they were still able to share valuable insight into their project implementation successes and challenges. Similar to NABARD's community-based approach, KAPABEL involves local community leaders in the decision-making process at the early stages of project development, which has proven to be fruitful in ensuring sustainability.



Laode Syarif, executive director of KEMITRAAN, discussed the geographic areas targeted by their forestry projects.

Even though KAPABEL involved the community during the planning stages, head of village changes in certain areas meant the project objectives had to be reintroduced and socialized. This caused delays in project implementation. Additionally, their initial informal agreements with the local agricultural agency officials caused a delay in the regional government recognition of the project. KAPABEL recommends formally recognizing all partnerships with stakeholders in writing to ensure consistency in project roles. One final challenge noted was the need to change the type of seedling for a particular nursey. This caused a re-calculation of the nursey house measurements and was a relevant example of the need to insert flexibility into project components, similar to NABARD's approach. Finally, the need to secure farming permits and licenses proved to be a lengthy process and KAPABEL recommends researching these procedures early to avoid delays.

Panama

The Fundación Natura represented the input from Panama, and their program is focused on integrated water management. The goal of the program is to increase the capacity of local communities for improved water

management. Their entire approach synchronizes with the National Energy Plan and is a prime example of the importance of ensuring coordination with government at all levels. Thus far, Fundación Natura has supported 36 protected areas and 4000 capacity building activities.

One of the greatest impacts of climate change in Panama, is the change in watershed levels. This change has reduced the level of available water to local communities, creating water scarcity and even conflicts in certain areas.

Fundación Natura emphasized repeatedly that managing multi-sectoral programs requires direct communication. They worked together with the communities and local government to establish an approach linked to existing territorial agreements. Such an approach includes an extensive analysis of the water situation in the project sites and ensures community members were included in the beginning stages.

For example, in areas where conflicts occurred, Fundación Natura articulated the varying interests from diverse public entities to help mediate disagreements and to fully highlight mutual interests. This was done via meetings at the local level and at information sessions led by technical specialists. Fundación Natura ensured all local actors plus NGOs were included in any mediation process.

Regarding project preparation, Fundación Natura highlighted the challenge of managing local expectations. Such expectations were outlined well in advance, so that the public did not over-anticipate the benefits from a given project. Implementing entities were also chosen based on their institutional strengths and ability to communicate at the regional and national levels.

To secure effective partners, Fundación Natura had to ensure their partners were, above all else, motivated to continue the projects. Having motivated partners begins at the community level and often includes local community members. To maintain sustainability, motivation is arguably the most important factor and should often be combined with income generation capability.

Finally, Fundación Natura emphasized the need to innovate at every level of the project. One way Fundación Natura does this is by conducting climate change round tables in five provinces. This ensure all points of view are incorporated, as climate change awareness often has differing levels of understanding. The round table approach has been adopted by other regions as a way of duplicating Fundación Natura project successes. Even with the challenges of COVID-19, virtual communication can still take place when possible.

Peru

The Adaptation Fund NIE for Peru is Profonanpe, which implements a climate change adaptation project focusing on Peru's coastal marine ecosystem and fisheries along littoral zones. Their goal is to support the Peruvian Government to reduce the vulnerability of coastal communities from the impact of climate change. To achieve this, Profonanpe adopts a four-component approach covering resilience, efficient surveillance for fisheries, capacity building, and policy management.

Profonanpe emphasized to the other NIEs the importance of creating a strong conceptional framework and, similar to the NIEs, involving stakeholders at the early stages. Similar to NABARD, Profonanpe encountered challenges of limited baseline data. Regardless, they were still able to establish effective performance indicators and a corresponding project budget. Profonanpe emphasized that any budget should be realistic and that principal actors within projects are often linked to other issues outside the project scope. They had to alter their recent budget due to unforeseen circumstances.

To help ensure the participation of principle actors, Profonanpe created inception workshops. These workshops help involve stakeholders in the planning process. Profonanpe also allies itself with partner projects for continuity. They reiterated that adaptation measures should be supported by regulatory and governance arrangements – another common theme noted during this exchange. Any arrangement should have minimal administrative requirements to keep processes simple.

Profonanpe adopts a five-stage process to stay on track:

1. Political – how and what can they do?
2. Strategic – what are the best alternatives?
3. Technical – what is relevant?
4. Social – what are the priorities?
5. Economic – what is feasible?

Therefore, putting this process into action involves virtual platforms, a constant presence in the field, accelerating the calls and contracts of thematic packages (this improves the technical execution), and following established COVID-19 protocols.

Tanzania

The National Environment Management Council (NEMC) has been a long-standing partner of the Adaptation Fund, with four approved projects since 2017. The focus on NEMC input for the NABARD Exchange centered on three new projects currently under consideration. They include lake restoration project, climate resilience project, and saltwater stressed adaptation project (Zanzibar).

NEMC shared much of what they have learned from their previous projects and how they are applying that knowledge to the proposed projects. NEMC places their priority on a knowledgeable, experienced, and dedicated workforce. To achieve such a workforce, they used different experts from varying institutions to ensure collaboration. This collaboration includes local stakeholders during the decision-making process.

NEMC emphasized that it takes time to recognize local procedures, yet this must be done before project implementation. If procedures are not synchronized with the implementation, delays will certainly occur. Additionally, the local government needs to be reassured that the project meets local financial requirements.

NEMC experienced Adaptation Fund approval delays due to a lack of data. Even if an area has a genuine climate risk, lack of information may prevent project justification. Furthermore, tempering local community expectations is also necessary to avoid unreasonable anticipated benefits. The issue with expectations is that many communities addressed by NEMC remain highly in need of support against the impacts of climate change.

Zimbabwe

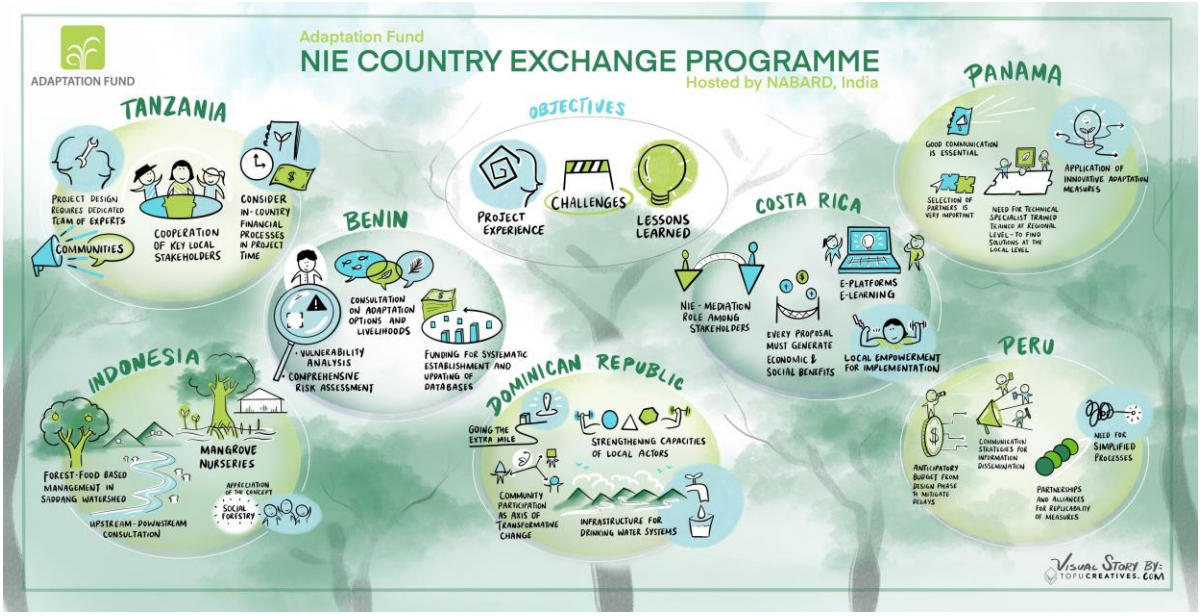
Even though the Adaptation Fund has an approved project in Zimbabwe focused on groundwater utilization via a Ministry NIE, the NIE at the Exchange was a newly accredited organization, The Environmental Management Agency (EMA) of Zimbabwe. The EMA currently has two projects open for consideration: Enhancing Climate Resilience for Smart Agriculture and a grant focused on Climate Resilience Innovation.

Their proposed projects are organized around four objectives:

1. Promote adaptive measures for sustainable and climate smart agriculture,
2. Support ecosystem resilience and forest management for degraded areas,
3. Strengthen institutional government to help with resilience to climate change and mainstream into sub-national level,
4. Implement knowledge management system to share experiences.

The EMA recently had its concept note approved and is using the lessons learned from this Exchange to enhance its project approach. They reiterated to the exchange participants the importance of involving stakeholders at every level and forming the approach. This concept may seem overly simple yet, without it, many projects do not succeed. The EMA also plans to invest its resources in creating more reliable data as they face the same lack of information as the other NIEs.

Tofucreatives helped to sum up the NIE input by creating a specialized doodle, which may be viewed as a quick reference tool complementing the detailed information in this report:



Conclusion

The Adaptation Fund is well underway in achieving its result area of strengthening NIE institutional capacity

Communication is key – this was the major underlying theme that emerged from the NABARD Exchange. Strong communication channels between government, beneficiaries, and all entities in between remain essential for project success.

Country exchanges are meant to be a living process and fortunately, participants from the NABARD Exchange have already begun implementing lessons learned and are in constant communication with each other. Moving forward, the Adaptation Fund will use these lessons learned to inform existing and future partners working on climate adaptation projects. It is the hope of the Fund that knowledge gained from the NABARD Exchange will lead to

increased capacity for project design, development, and implementation; such an increase will better equip NABARD India and the NIEs to tackle challenges related to food security and climate resilience.

Annexes

Annex 1 – List of participating partners and NIEs include names

Annexure I (A)

Climate resilience for sustainable livelihood and food security

Adaptation Fund Board : NIE Country Exchange Programme 2021

Host : National Bank for Agriculture and Rural Development (NABARD) India

Webinar (I) – Role of NABARD as NIE

17 August 2021 17.00 IST / 07:30 EST

Time (IST)	Speaker	Topic
17.00 - 17.05	Dr A V Bhavani Shankar General Manager FSDD, NABARD, HO, Mumbai	Introduction
17.05-17.10	Mr. U D Shirsalkar Chief General Manager FSDD, NABARD, HO, Mumbai	Welcome address
17.10- 17.15	NABARD, HO, Mumbai	Video : NABARD interventions towards sustainable development and food security
17.15 -17.20	Mr. PVS Suryakumar, Deputy Managing Director NABARD, HO, Mumbai	Address by DMD, NABARD
17.20-17.25	Mr.Ahmed Waheed, Board Member, AFB	Background and inaugural address
17.25-17.30	Dr. G.R.Chintala Chairman NABARD, HO, Mumbai	Key note address
17.30 - 17.50	Mr. K G Ranjit Kumar General Manager FSDD, NABARD, HO, Mumbai	Presentation : Overview of AF projects in India; identification, preparation, design, development and implementation status, and lessons learnt at each stage
17.50 -18.00	Ms Rajasree Ray, Economic Advisor, MoEF & CC (Govt. of India)	Presentation : Climate action, National priorities and Endorsements
18.00-18.20	Participants	Discussion, Q&A
18.20-18.25	Mr C S R Murthy Chief General Manager FSDD, NABARD, HO, Mumbai	Summing-up & Vote of thanks

Annexure I (B)

Climate resilience for sustainable livelihood and food security

Adaptation Fund Board : NIE Country Exchange Programme 2021

Host : National Bank for Agriculture and Rural Development (NABARD) India

Webinar (II) – Adaptation Fund projects in India

19 August 2021 16.30 IST / 07:00 EST

Time (IST)	Speaker	Topic
16.30-16.35	Dr A V Bhavani Shankar General Manager FSDD, NABARD, HO, Mumbai	Introduction
16.35-16.40	Mr. U D Shirsalkar Chief General Manager FSDD, NABARD, HO, Mumbai	Welcome and initial remarks
16.40-16.50	Dr. Surendra Babu Deputy General Manager FSDD, NABARD, HO, Mumbai	Presentation: AFB projects in Andhra Pradesh and Uttarakhand, India NABARD's views
16.50-17.00	NABARD, HO, Mumbai	Video : AFB project – Conservation and Management of Coastal Resources as Potential Adaptation Strategy for Sea level Rise in Andhra Pradesh (India) (EE-MSSRF)
17.00-17.10	Dr. R. Ramasubramanian Director – Coastal Systems Research MSSRF	Presentation : AFB project in Andhra Pradesh(India)
17.10-17.20	NABARD, HO, Mumbai	Video : AFB project – Climate Smart Actions and strategies in North Western Himalayan Region for sustainable livelihoods of Agriculture dependent Hill Communities in Uttarakhand (India) (EE- BAIF)
17.20-17.30	Dr. Rajashree Joshi Programme Director BAIF	Presentation : AFB project in Uttarakhand (India)
17.30-18.10	Participants	Discussion, Q&A
18.10-18.20	Mr. K G Ranjith Kumar General Manager FSDD, NABARD, HO, Mumbai	Summing-up and Vote of thanks

Annexure I (C)

Climate resilience for sustainable livelihood and food security

Adaptation Fund Board : NIE Country Exchange Programme 2021

Host : National Bank for Agriculture and Rural Development (NABARD) India

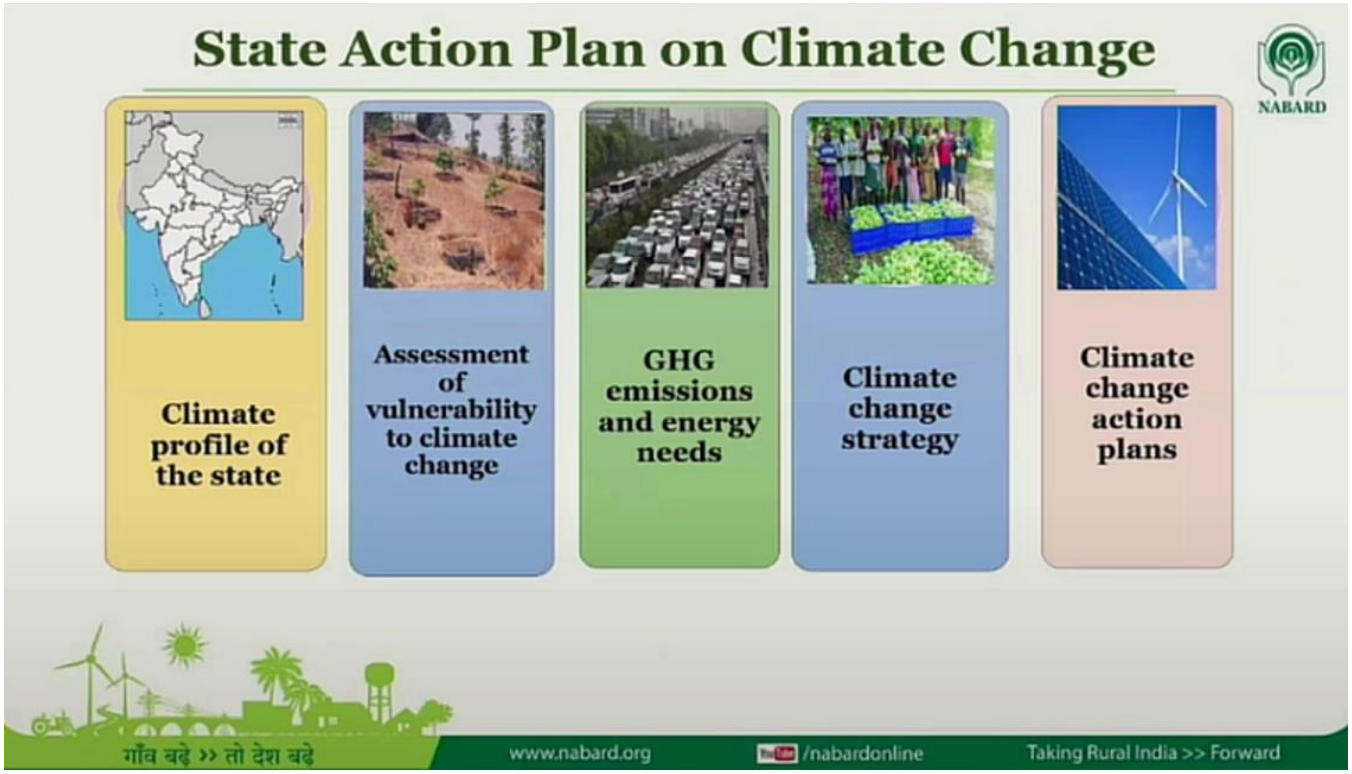
Webinar (III) – Knowledge Fair

24 August 2021 16.00 IST / 06:30 EST

Time (IST)	Speaker	Topic
16.00-16.05	Dr A V Bhavani Shankar General Manager FSDD, NABARD, HO, Mumbai	Introduction
16.05-16.10	U D Shirsalkar Chief General Manager FSDD, NABARD, HO, Mumbai	Welcome and initial remarks
16.10 -16.15	Cristina G Dengel, Knowledge Management Officer, AFB	Objectives and expectations
16.15-16.25	David Luthor Director Ejecutivo, IDDI	Dominican Republic
16.25-16.35	Santiago Joab Jr. Livelihoods Program Manager ,MCT	Federates States of Micronesia
16.35-16.45	Lilian Lukambuzi Director of Environmental Research and Management, NEMC	United Republic of Tanzania
16.45-16.55	Abdoul Razak Saidou Baraze BAGRI	Niger
16.55-17.05	Laode M Syarif,Executive Director KEMITRAAN	Indonesia
17.05-17.15	Dossou Worou Fortunée Head of service of Mobilisation of Resources, FNEC	Benin
17.15-17.25	Carolina Reyes,Coordinator Fundecooperacion para el Desarrollo Sostenible	Costa Rica
17.25-17.35	Lourdes Lares Social Specialist,Profonanpe	Peru
17.35-17.45	Maxwell Maturure Environmental Planning Manager,EMA	Zimbabwe
17.45-17.55	Vilna Cuéllar Gerente de Proyectos Especiales Fundación Natura	Panama
17.55-18.05	Dr. Nomita Halder, NDC Managing Director, Palli Karma Sahayak Foundation	Bangladesh

18.05-18.10	Tofu Creatives Grafic Design Company	Virtual,Live graphic design/ doodling of main concepts related to food security shared by NIES
18.10-18.40	Interactive Discussion	Q&A
18.40-19.00	Cristina G Dengel, Knowledge Management Officer, AFB & C S R Murthy Chief General Manager FSDD, NABARD, HO, Mumbai	Brief Outcome of Country Exchange & Vote of thanks

Annex 2 – India State Action Plan on Climate Change



Annex 3 – India's eight national missions on climate change