

# 2020 Country Exchange Senegal

Ten National Implementing Entities enhance project design capacity through virtual interaction with Senegalese project stakeholders



**ADAPTATION FUND**

Helping developing countries build resilience and adapt to climate change

## Contents

<b>Adaptation Fund projects continuously enhance local capacity building through country exchanges .....</b>	<b>3</b>
Senegal hosts the second exchange virtually .....	3
<b>CSE Exchange and Project Background .....</b>	<b>4</b>
Context and impact on the coastal regions .....	2
Accreditation leads to project implementation.....	2
Recent gains made to adapt to climate change.....	3
CSE integrates with climate change structure .....	3
<b>Sharing Experiences, Solutions, Lessons Learned from the CSE Projects .....</b>	<b>4</b>
CSE approach to advance climate adaptability.....	4
Disaster Risk Reduction.....	4
Communication, capitalization, and scientific exchange are essential .....	5
<b>Seven key challenges addressed by the CSE .....</b>	<b>6</b>
Challenge: Manage environmental and social risks, including environmental impact assessment, and gender considerations .....	6
Challenge: Implement efficient systems for procurement.....	7
Challenge: Implement project monitoring, oversight, measuring impacts, and financial and non-financial reporting.....	7
Challenge: Enhance knowledge management, documenting best practices and initiatives beyond the project.....	8
Challenge: Ensure institutional and support requirements for success.....	8
Challenge: Create communication activities with main stakeholders .....	9
Challenge: Ensure project is sustainable .....	9
<b>Participating NIEs Use Country Exchange to Add Value to Their Own Projects .....</b>	<b>9</b>
<b>Conclusion .....</b>	<b>13</b>
<b>Annexes.....</b>	<b>14</b>

## 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) 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).

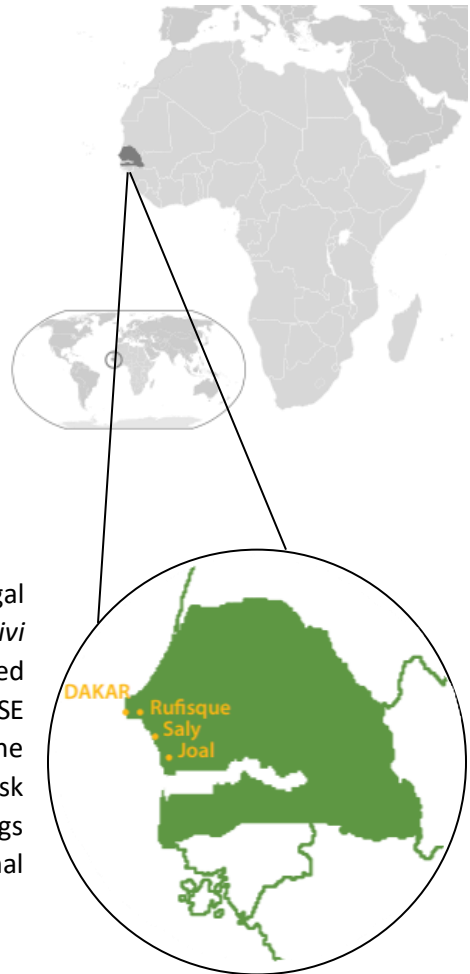
Country exchanges through the Adaptation Fund’s readiness program, in particular, center on field exchange visits between national implementing entities (NIEs) that wish to learn from projects in the same sector or that use a similar model to build their capacity in project design, development, and implementation.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

The Adaptation Fund facilitated its first country exchange from May 6 to 10, 2019, in the Libertador General Bernardo O’Higgins region of central Chile. During the exchange, The Chilean Agency for International Cooperation and Development (the host) shared valuable lessons learned related to water and agriculture. Eleven NIEs from the exchange were able to directly apply these lessons learned to their own projects following the exchange<sup>1</sup>.

### Senegal hosts the second exchange virtually

The second exchange occurred November-December 2020 in Senegal hosted by The Adaptation Fund’s accredited NIE, the *Centre de Suivi Ecologique (Ecological Monitoring Center or CSE)*<sup>2</sup>. Ten NIEs participated representing nearly every continent<sup>3</sup>. During this country exchange, the CSE shared valuable lessons learned and findings with other NIEs based on the country exchange theme of coastal zone management and disaster risk reduction. These lessons and findings included project process learnings ranging from the challenges of community participation to institutional support for newly proposed climate change policies.

The Senegal exchange also offered insight into the project implementation successes and challenges faced by the CSE. One such success included how the CSE established itself as a leader



<sup>1</sup> See *Lessons learned and applied from the [Chile country exchange](#), 2019*

<sup>2</sup> *The exchange was conducted virtually due to the ongoing health and travel restrictions resulting from the COVID-19 virus.*

<sup>3</sup> *Belize, Bhutan, Chile, Cook Islands, Indonesia, Jamaica, Kenya, Micronesia, Niger, Peru*

in the traditional and non-traditional management of climate change adaptation. The NIEs also learned how the CSE works hand-in-hand with the Senegalese Government mobilizing resources to combat coastal erosion and tackle the impact of natural disasters.

Stakeholders engaged with by the participating NIEs included the Senegal Director of Environment and Classified Establishments, Senegal Director of the Agriculture and Rural Extension Agency, the CSE Director General, and members of the coastal communities impacted by climate change.

This report highlights key project successes and lessons learned from the CSE project. 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.

## CSE Exchange and Project Background

**The Adaptation Fund facilitated the second country exchange which occurred at the end of 2020, over three virtual sessions.** The exchange centered on the CSE project entitled, “Adaptation to Coastal Erosion in Vulnerable Areas.” The objective of the Adaptation Fund funded project under implementation by CSE is to protect people, houses, economic, and cultural infrastructure in the region against coastal erosion. The coastal regions are Rufisque, Saly, and Joal, which are located along the central coast of Senegal, south of the capital city Dakar. The Adaptation Fund project complements an existing World Bank Group International Development Association project entitled, “Saint Louis Emergency Recovery and Resilience Project,” which is located along the northern coast.

The Adaptation Fund project has five strategic objectives:

1. Implement the actions to protect the coastal areas of Rufisque, Saly, and Joal against erosion, with the aim to protect houses and the economic infrastructures threatened by the erosion including fish processing areas, fishing docks, tourism, or cultural infrastructures, and restore lost or threatened activities;
2. Implement the actions to fight the salinization of agricultural lands used to grow rice in Joal, with the construction of anti-salt dikes;

3. Assist local communities of the coastal area of Joal, especially women, in handling solid wastes and fish processing areas of the districts located along the littoral;
4. Communicate adaptation best practices and sensitize and train local people on climate change adaptation techniques in coastal areas. This includes good practices to avoid an aggravation of the various situations encountered and;
5. Develop and implement the appropriate regulations for the management of coastal areas.



***The CSE hosted the exchange virtually from their offices in Dakar under strict COVID-19 guidelines.***

The Adaptation Fund project is under the larger umbrella of the regional “Monitoring Coastal Risks and Durable Solutions in Benin, Senegal, and Togo” project. This larger project is based on a contribution from the French Global Environment Fund toward the West Africa Coastal Areas Management Program (WACA), a World Bank-funded program. This three-



country project has key components encouraging scientific exchanges between the countries, along with establishing key implementation methods and pilot initiatives. The scientific focus helps inform the Adaptation Fund project and offers a well-informed scientific base with which to combat coastal erosion.

### Context and impact on the coastal regions

**The coastal communities in Senegal are some of the countless communities around the world impacted by sea-level rise and other negative effects of accelerated climate change.** Several of the Senegalese beaches in popular tourist areas, such as Saly, are subject to extreme erosion, which has caused tourism to plummet. The lack of tourism means household and local business incomes relying on tourism have equally plummeted. Erosion and salt-water flooding have destroyed rice fields, damaged docks and buildings, and caused silt buildups that hamper small boat craft transit between rivers and the sea.



**House impacted by beach erosion along the Senegalese coastline**

About 56 percent of the coastline of Senegal is subject to an average erosion of 1.8 meters per year. Erosion is the most damaging factor along the coast

of Senegal due to losses of high value urban land. This loss is estimated at US\$0.5 billion per year<sup>4</sup>. The cost of erosion is expected to increase considerably in the future, as the phenomenon is likely to affect larger urban areas. Additionally, traditional rice-growing activities carried out in valleys and estuarial areas will be affected by a larger intrusion of saline waters, making the drainage of those areas even more difficult.

### Accreditation leads to project implementation

**Fortunately, the tide has turned.** In 2010, the CSE was accredited as an NIE of the Adaptation Fund and was then eligible to directly access climate adaptation financing<sup>5</sup>. In 2010, the Adaptation Fund Board approved its US\$8.6 million proposal for an integrated multi-year project in the three seaside towns, and work began in 2011.

Across all three project sites, the aim has been to develop regulations that encompass adaptation, revise the environmental code, adopt laws on the littoral, and help local inhabitants better understand adaptation techniques to climate change in coastal areas and the importance of respecting regulations for the management of littoral zones.

The CSE leads the project, which is comprised of five main components and regions:

1. Rufisque: updating detailed technical feasibility studies for the design of coastal protection facilities, achievement of the infrastructure of protection, cleaning up of the canals and connection with the sea.
2. Saly: achievement of the infrastructure of protection facilities in vulnerable areas where hotels,

<sup>4</sup> *The Cost of Coastal Zone Degradation in West Africa: Benin, Cote D'Ivoire, Senegal and Togo, West Africa Coastal Areas Management Program and World Bank Group, March 2019.*

<sup>5</sup> *Direct Access generally entails a country accessing financing directly, without having funds flow through an international intermediary. The AF modality became operational in 2010.*

people, poor villages and fishing docks are located, support for the fitting-out of the fishing dock and the fish processing area.

3. Joal: validation of feasibility studies and achievement of anti-salt barriers, strengthening of the protection and development of the littoral: beach, fish smoke kilns, strengthening of waste collection and management system, including plastic bags, with the setting up of a technical landfill center and strengthening of environmental assessment awareness and training.
4. Development and strengthening of regulations on coastal protection and the adaptation to climate change. This includes the Environmental Code, law on the littoral and other regulations and;
5. Information and sensitization on the project including training of the various target groups on the new regulations and adaptation, development of communication tools, and distributions and exchanges.

### **Recent gains made to adapt to climate change**

**Since the project's inception, impressive gains have been made.** Some examples include more than 100 female fish sellers who have been aided by the rehabilitation of the fish drying infrastructure, the preservation of 3,000 tourism and fishing jobs, and the construction of a 3.3km anti-salt dike (the dike prevents salt water from infiltrating soil near the coast). The progress made acts as a positive beacon for the region.



***Dike constructed near Joal.***

Prior to the exchange and cessation of international travel, the CSE organized a visit of an Adaptation Board member to two project sites in March 2020 - Saly and Rufisque. The Board member noted clear signs of local involvement after project completions and felt the impact was positive and very visible. The Board member equally noted the involvement of men and women in the project implementation.

### **CSE integrates with climate change structure**

**During the exchange, the CSE Director General emphasized that their organization achieves impressive gains by being integrated into Senegal's climate change response structure at the sub-national and national level.** He further noted how they are a leader in reducing the impact of climate change and reducing disaster risks. The CSE continuously drives development in the coastal regions by eyeing the long-term development needs and reinventing partnership models. CSE believes that such advancement requires support from all partners and acknowledges the Adaptation Fund's support in their efforts.

The Adaptation Fund equally noted that the CSE leads in community engagement and has done so for many years. This type of community engagement is especially visible following project completions, such as the construction of a large dike along the coasts of Saly and Rufisque. The Adaptation Fund also notes how men and women work side-by-side during the projects. Such observations following the most

recent field visit in March 2020, have resulted in projects being scaled up.

Read further for highlights of information shared during the exchange and NIE partner feedback.

### Sharing Experiences, Solutions, Lessons Learned from the CSE Projects

**The CSE wanted to continue the success from the first NIE Exchange in Chili, by focusing on three key elements for the Senegal exchange: action, innovation, and learning.** These three concepts were highlighted via presentations of lessons learned from various CSE and Government partners. All Senegalese stakeholders present noted the importance of such exchanges, and how they lead to improving current project outcomes. This improvement is achieved when partners share their project solutions, successes, and challenges; In turn, they gain valuable input from the NIEs. This report reflects the NIE and CSE exchanges occurring virtually over a three-week period.

#### CSE approach to advance climate adaptability

**Advancement of sea erosion is the most visible sign of climate change in Senegal, as well as in much of coastal West Africa.** More than 3 million people live along the Senegalese coastline. Therefore, one key focus of the Adaptation Fund project has always been preventing erosion along the coastal regions. Before any type of work began however, CSE had to sensitize the communities and propose an approach. The CSE conducts a very community-first philosophy, which has proven to ensure the projects remain durable. In fact, the theme reiterated throughout the exchange is that to ensure the viability of a project, one must always start by including the beneficiaries first in the process.

Once the community offers their input to an approach, it is then validated by the CSE and institutional arrangements made. For example, in

the touristic zone of Saly, heavy coastal erosion had negatively impacted the local fishing and tourism economy. The Adaptation Fund project funds, in coordination with another World Bank Group project, funded the installation of sand-retention barriers to replenish sand by offering a barrier to the open sea. Two barriers were constructed together by the local authorities and community.

The new barriers withheld the waves and the sand reappeared soon after. This helped improve the economic diversity of the region by offering fishermen solid beaches from which to launch, and saving valuable infrastructure along the beach, including a cemetery that was destined to be consumed by the ocean.

#### Disaster Risk Reduction

**The Senegal exchange also addressed disaster risk reduction, as many of its project approaches involve the mitigation of natural disasters due to beach erosion and salination of agricultural land.**

The CSE needed an approach to these issues that caused minimal impact to nature. They worked with neighbors in Togo and Benin to find a durable solution.

Under the CSE “Monitoring of Coastal Risks and Unobtrusive Solutions in Benin, Senegal, and Togo” project, each country shares its technical assistance to reinforce their capacity to manage the disaster risk reduction aspects of the projects. For example, along the Mono River in Benin, one major objective is to consolidate national and regional marine observation mechanisms, and ensure the general public is aware of the risks in such areas. In the same area, there is also a pilot structure, which prevents flooding and increases the resilience of local communities.



In Togo, the project addresses beach erosion along a seven kilometer stretch of coastline. A key aspect of the project ensures the local population remains aware of ways to combat erosion. A socio-economic study of the coastal risks is also being carried out, as the beach will need to be completely re-profiled. Included in the study is a sustainable withdrawal plan to ensure community continuance of the erosion prevention efforts.

Along the Senegalese coast, marine studies are ongoing to determine which natural sand barriers are disappearing. Similar to all CSE approaches, stakeholders develop social implementation procedures to ensure populations accept interventions.



**Local community workers install sand retention barrier near Saly.**

In Sangomar, which is located along the southern Senegalese coast, the natural sand barriers became

split and were too wide apart for a sea wall. This area is a fragile delta region and needed a holistic approach to combat beach erosion and the salination of fresh water and soil used for agriculture. Thanks to community input, a combination of break-water dikes and mangrove- reforestation barriers proved the most sustainable solution and is currently underway.

Flooding was equally an issue in the protected marine area of Saint-Louis, north of Dakar. The Immersion of a land barrier caused coastal flooding. To combat the flooding, the CSE organized the community to reforest the area and protect the fragile environment. The community also constructed a barrier to prevent the sand from moving and exposing the area to the open sea.

The experiences of this larger, multi-country project better inform the Adaptation Fund-funded three-town project and enhance the consistency of coastal erosion and disaster risk reduction approaches.

### **Communication, capitalization, and scientific exchange are essential**

**In line with the Adaptation Fund approach, the CSE stresses the importance of stakeholder follow-up.**

Population resilience depends on the stakeholder interest in the project. The CSE combines community input with local and national institutional input to strengthen awareness and knowledge. Where these projects are implemented, the population seems to understand the importance of the efforts, which makes it more likely that they will be maintained.

*Observation is key through partnership with WACA*

The West Africa Coastal Areas Management Program (WACA), managed by the World Bank, offers a framework which informs stakeholders of the expected coastal protection investments. WACA also has a network of observatories which provide follow-up to the investment impact and help to plan interventions. All CSE project formulation is designed to complement the investments.



### Alerts received through additional partners

As part of its network of partnerships, the CSE is kept informed of potential threats to its project sites. One such alert system is the Plan d'Urgence Maritime (Maritime Alert Plan or PUM). In case of any chemical or oil spill into the sea, local authorities are immediately alerted, and the necessary precautions taken. If a mass response is needed, authorities manage the situation using the PUM, which includes action needed to respond to spills and preserve health and security.

### Environmental directives

Environmental directives toward the managing of coastal infrastructure projects are a fairly new approach in Senegal. One overarching goal is to take the complex nature of the projects and adapt them to the local environment as much as possible. This is achieved through technical committees under the direction of the Direction de l'Environnement et des Etablissement Classes (Environment and Class Establishment Division of DEEC). Exchanging scientific data through these partnerships helps ensure the longevity of the projects and correct approaches.

## Seven key challenges addressed by the CSE

**The CSE addressed seven key challenges they faced during the three-town project.** The following section offers more insight into the CSE's approach to meet each challenge.

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

Throughout the exchange, the CSE highlighted numerous examples of the social aspect of managing environmental risks. Specific to gender, the social capacity in each region was reinforced via local actors led, in large part, by women. In Saly for example, women were active in the transformation

needed to involve the community. This included the design of the erosion prevention approach.



**MS Dione, president of The Transformative Women of Saly Coulang, notes how coastal erosion consumes daily life and caused much suffering.**

Local organizations equally took part in organizing the community to help with project design and implementation. This included organizing additional resources and developing ways to ensure the local economy suffered minimal impact, such as not interrupting the local fishing schedule.

CSE always starts their initiatives by including project beneficiaries early in the process, including when deciding on maintenance of the new infrastructure. For example, in Saly, the community was kept informed of each stage during construction of the coastal barriers and participated in its actual construction.

Regarding the political aspect, the most important task to undertake is a baseline study for environmental impact. Any potential illegalities must be identified and corrected. This allows for measures to protect the most vulnerable communities and establish indicators sensible to the population. One of the biggest challenges when conducting such a study however, is receiving adequate funding relative to the large scope.

As noted previously, participation of the public is an essential element in the planning of the environmental projects. Getting the environmental social aspect correct is key. The CSE approaches this

through a public sensitization approach using a four-step process:

1. Acceptance of public.
2. Analysis at the judicial and environmental level.
3. Adherence to Government strategy for the environment (to help determine political aspect).
4. Regulatory conformity.

As an example, solar-powered observation stations are planned to be installed and must meet these four criteria. Additionally, not all stakeholders will respect the criteria therefore, the project administration must learn to manage expectations.

### Challenge: Implement efficient systems for procurement

**One challenge faced is implementation control regarding direct payments to project staff.** In order to manage direct payments, certain modalities must be followed which comply with the nationally established labor procedures.

Fortunately, the CSE's access to Adaptation Fund funds remains straight forward through the direct access mechanism. Since the year of its launch in 2007, the Adaptation Fund pioneered a new approach for accessing funds via 'Direct Access', which developed into a fully operational modality by 2010. Direct Access generally entails a country accessing financing directly, without having funds flow through an international intermediary.

The CSE was one of the first recipients of Direct Access funding. The 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.

The majority of climate financing has historically flowed to multilateral and, less frequently, bilateral institutions acting as international intermediaries to climate action. While international intermediaries have been managers of choice early on for climate finance, important global deliberations conducted in

parallel pointed to the need for increased ownership and alignment in the realm of global financial assistance. The Paris Declaration on Aid Effectiveness (2005), and later the Busan Partnership Agreement (2011), equally acknowledged this need. The CSE takes full advantage of Direct Access to quickly procure needed equipment and pay workers.

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

**When it comes to the varying aspects of project monitoring, the Environmental Impact Division of Senegal noted that this is achieved through a series of classifications.** For example, projects implemented in the coastal areas and classified as high risk are assigned appropriate technical staff in charge of conducting an erosion impact "deep study". The classifications are subject to environmental assessments of varying levels.



### ***M. Guindo notes the importance of sharing technical information and establishing environmental standards.***

Impacts are measured through assessments within a framework and thanks to these assessments, activities can be carried out more accurately. To do this, the social elements must be considered along with the technical validation of an activity. Part of the validation process includes public hearings for example.

Environmental parties oversee any type of feasibility study and propose management plans which include

community social levels. Once validation is achieved, the project implementation administration is formed, and activities begin.

The CSE has legal staff which are part of the environmental impact studies. The legal staff ensure certain conditions are followed. Specific to coastal areas, the CSE studies the limitation of any environmental impact study and how it may be supported politically. Therefore, project programs and policies are planned and implemented in distinct stages. These stages include an analysis which helps define the importance of the project and ensure regulatory conformity. The elaboration of any plan or group of measures (including compensation) are implemented according to environmental clauses during the moment of work. They equally must merge efforts with other organizations and match competences according to an overarching global plan.



***M. Diagne, head of the Doun Baba Dieye Village, notes the local economy is flourishing and everyone is working. His village is within a CSE project site.***

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

**The CSE excels at documenting best practices and sharing project information to all stakeholders.**

They have an entire division dedicated to preserving knowledge and producing knowledge products at every level of the community. Much of their technical staff equally inform government divisions when relative issues are encountered.

**Challenge: Ensure institutional and support requirements for success**

**The CSE works efficiently with the Senegalese government by adhering to the Plan de Gestion Environnementale et Sociale (Environmental and Social Management Plan or PGES).** The CSE implementation plans always adhere to the PGES and include national authority and agency input. The CSE implementation plan ensures project managers are in place and is equally a requirement for accreditation by the Adaptation Fund. In fact, the CSE has a unit in charge of working directly with the community. The unit also handles evaluations, funding and administration.

Part of the plan is ensuring the high quality of marine water and avoiding pollution risks. A complimentary plan is used for this called the Plan d'Urgence Maritime (Emergency Maritime Plan or PUM). The plan focuses on maintaining the cleanliness of maritime waters since preventing erosion alone is often not enough. The waters must be clean enough so as not to endanger the often-fragile coastal environments.

The Maritime Plan also includes issues related to oil and gas exploration. One challenge in managing the installation of oil and gas exploration infrastructure occurs in such places as the Sangomar Delta – a fragile ecosystem with lucrative oil reserves. Working at the political level is key in order to reach compromises related to new infrastructure that may impact coastal erosion.

A change in the Government is also a challenge. When there is a change in the cabinet, this forces the CSE to work with new officials and may impede certain types of progress. The CSE strives to maintain transparency, therefore, building successful relationships with officials is key to maintaining transparency to the Government and public.

## Challenge: Create communication activities with main stakeholders

**The CSE works closely with the Society for Development and Promotion of Senegalese Coastal Tourism Zones or SAPCO, as they are expert at integrating solutions in areas with lower capacity.**

Their approach is very data driven and involves many environmental studies.

SAPCO acquires large amounts of information and then creates studies that inform local tourism operations. This data is shared with its partners as well. For example, in Pointe Sarene, they recommended planning and development initiatives based on an anticipated 130m coastal recession. Such recommendations included the increased protection of sand dunes and reinforcement of coastal vegetation, which helped in the prevention of erosion. SAPCO continues to develop its technical competence within the environmental division to further strengthen its studies.

Establishing strong partnerships with organizations like SAPCO, offers a wider spectrum of coastal erosion information, and better informs development initiatives.

The Senegalese Department of Environment also uses the SAPCO studies to better address the increased sea sediment issues and how to better manage waste in certain areas. Without the studies, the Department would not be able to define where to start and how to move forward. Fortunately, they realized that the establishment of seawalls was one of the best ways to prevent the build-up of sedimentation and have since promoted similar infrastructure initiatives along the coast.

## Challenge: Ensure project is sustainable

**Technology is also a challenge in that the CSE wants durability and quality of implementation but must equally maintain a large technical infrastructure.**

Fortunately, local universities and enterprises help by supplying technical expertise and equipment. To help ensure durability, each segment of the project

includes a maintenance plan in coordination with local authorities.

As noted under the communications challenge, many technical studies and reports are shared with the CSE from Senegalese environmental organizations and the CSE uses that data to better inform its approaches. The more technical and social data applied to the project approach, the more likely the project will succeed.

The CSE approach to these seven challenges were the key focus of the NIE exchange and the NIEs benefitted substantially from the information. Additionally, the CSE produced and displayed an informative video showcasing many aspects of the Adaptation Funded project. Many of the images within this report are from that video.

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

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

### Kenya

Kenya's project entitled, "Integrated Program to Build Resilience to Climate Change and Adaptive Capacity of Vulnerable Communities in Kenya," seeks to enhance the resilience and adaptive capacity to climate change for selected communities. Two of the project's components deal with coastal and marine management: 1. Increase resilience to climate change of shoreline and mangrove ecosystem in Kenya coastal zones and 2. Reduce disaster risks and increase preparedness among vulnerable communities.



The project is implemented by the National Environment Management Authority (NEMA), which is an Adaptation Fund NIE. Similar to the CSE Senegal project, the Kenya project implementers seek to rehabilitate and protect the mangrove ecosystem and stabilize the shoreline in the most vulnerable coastal areas. In the Nyando River Basin (located in the Kenyan Kisumu County) project implementors also address the construction of canals and dikes to control flooding. Based on their experiences with the project, NEMA shared the following lessons learned:

1. Programs should remain flexible due to the ever-changing aspect of climate change;
2. Rising lake levels are also a threat and should be equally addressed as sea level rise;
3. Similar to the CSE approach, continuous monitoring is key along with regular progress reporting;
4. Capacity building should be carried out only when concrete and sustainable outcomes are established and;
5. And similar to the CSE, stakeholder involvement is essential to success in achieving program objectives.

Even though the lessons learned are straight forward, challenges remain. They include under-budgeting for infrastructure construction, long procurement processes, and unreasonable community expectations. NEMA noted the CSE's multi-layered techniques for including community participation and hopes to apply similar approaches in Kenya.

### **Indonesia**

Indonesia's project entitled, "Community Adaptation for Forest-food Based Management in Saddang Watershed Ecosystem," only began in October 2020 therefore, the lessons learned from the Senegal exchange are proving valuable for planning. This project has a different focus compared the coastal erosions projects.

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.

The level of area at risk due to climate change associated with the disaster level in the Saddang Watershed area shows that 93 percent of villages in the watershed are vulnerable to climate change. Increased rainfall caused various disasters in the watershed area as many as 342 times starting 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 of land carrying capacity and critical land in the area of the Saddang Watershed.

KAPABEL is still integrating its approach within the target communities, so their lessons learned are fairly limited at this time. However, they are in a

good position to plan for any anticipated challenges based on the exchange with the CSE.

### Cook Islands

The Cook Islands are vulnerable to a wide variety of natural disasters, such as cyclones, and numerous climate change impacts including extensive beach erosion. Implemented by the NIE Pa Enea Action for Resilient Livelihoods or PACT, the “Strengthening the Resilience of our Islands and our Communities to Climate Change” project aims to strengthen the ability of Pa Enea (the outer Islands) and all Cook Island communities, to make informed decisions and manage anticipated climate change driven pressures in a proactive, integrated, and strategic manner.



To accomplish this goal, the program aims to help strengthen national institutions, enhance coordination of efforts at the national level, and ensure more effective delivery of national initiatives at the island and community level. Another focus is on ensuring that staff in the relevant national agencies and organizations can support island and community development initiatives that build resilience to climate change.

In a more agriculturally focused approach, the Pa Enea residents are being trained to undertake small-scale agriculture in the form of household agriculture plots. These will allow for crop diversification, including new climate-resilient crops, and are also expected to improve the overall health and livelihoods of the communities.

Similar to the CSE approach, these activities were designed by the community and the Island Council.

The involvement of the community from the initiation stage provided local buy-in and ownership of the project. Implementation at the community level ensures that the residents work together as a group to advance climate resilience and income generation opportunities for the benefit of all, similar to how the coastal communities under the CSE project are key to all aspects of the project design.

Some key challenges that remain are the operational isolation of the Islands, lack of quick access to needed materials, and poor telecommunication service. Additionally, PACT recommends robust training for other NIES plus capacity building along with encouraging the use of native foods and organic farming. PACT also recommends tapping traditional knowledge for more sustainable solutions and noted that they must plan on bulk buying of local products and strengthening their existing private sector structures.

### Belize

Belize’s project is entitled, “Enhancing the Resilience of Belize’s Coastal Communities to Climate Change Impacts.” Similar to Senegal, Belize has a significant percentage of their population living along coastal zones. The bulk of the Belizean economy takes place in these zones and includes tourism, fishing, and agricultural production.



***House being consumed by the approaching sea due to erosion in Belize.***

The project is implemented by the Adaptation Fund NIE Protected Areas Conservation Trust (PACT). This NIE is highly engaged with improving coastal land for resilient habitation and sectoral activities. This includes beach stabilization and strengthening national capacity.

PACT's challenges relate well to the CSE and they face challenges to address the public's needs based on coastal erosion. So much of the country is impacted by coastal erosion, and it is challenging to choose only certain zones with which to work. Additionally, PACT faces a shortage of technical experts in the country and a lack of resources to attain support. Finally, the impact of COVID-19 has severely limited their ability to consult with key stakeholders.

### **Niger**

In land-locked Niger, their project focuses more on the food security situation in the Dosso Region of the country. Implemented by the NIE Banque Agricole de Niger (Agricultural Bank of Niger or BAGRI), This project aims to provide a sustainable solution to the issue of low agricultural production and food insecurity. The project is a pilot project, which aims to strengthen the resilience of populations and to prevent reactionary adaptation that eventually becomes detrimental to the farmers. It targets the problem of expenses related to water collection together with the management of water resources. During the exchange, BAGRI noted that participants of the program were aged 15 to 35 years and were 50 percent female.

The country's agricultural production is faced with the adverse impacts of climate change due to insufficient water availability. The weather variability and climate change have a direct impact on food security, especially in rural areas combined with difficulties in pumping and accessing the water.

The main objective of the project is to strengthen the resilience of agriculture and to support food security

in Niger, through the promotion of modern irrigation techniques. The project focuses directly on about 200 pilot-farmers groups using small-scale irrigation.

The specific objectives are the following:

1. Strengthen the capacity of stakeholders (especially the youth) on resilient irrigation systems and disseminate lessons learned during the project execution;
2. Support the development of efficient technologies for sustainable management of water resources, conserve soil of irrigated areas, and reduce energy costs associated with pumping of irrigation water and;
3. Support the diversification of livelihoods to improve the incomes of youth farmers.

In addition, BAGRI established an innovative financial mechanism, which allowed easier access to agricultural financing. The mechanism has three sources: the young farmer, bank credit, and a grant from the Niger state supported by donors.

BAGRI shared its successes with the project thus far. The strong organization of the Dosso regional council helped to ensure the financing was directed to the correct households. Additionally, strong monitoring and evaluation tools were put in place, which helped assure accountability.

Areas they plan to improve include somewhat feebly organized rural populations, a lack of qualified technicians to advise the young farmers, and limited knowledge of the agricultural sector by the newer farmers.

Bagri advises the other NIEs to ensure the largest inclusion possible of community beneficiaries plus strong cost sharing devices to improve project targeting. Regardless of their challenges, they believe the project can be scaled up capitalizing on the experiences of this first stage.

## Conclusion

**The Adaptation Fund is well underway in achieving its result area of strengthening NIE institutional capacity.** This can be seen from the first country exchange in Chile and how NIEs are experiencing success applying their lessons learned.

Country exchanges are meant to be a living process; participants from the Senegal exchange have already begun implementing lessons learned and continue to communicate 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 Senegal exchange will also lead to increased capacity for project design, development, and implementation; such an increase will better equip Senegal to prevent coastal erosion and reduce disaster risks.



## Annexes

## Annex 1

Virtual Country Exchange list			
Country	NIE	Name	Email
Senegal	Centre de Suivi Ecologique (CSE)	Aissata Sall	<a href="mailto:aissata.sall@cse.sn">aissata.sall@cse.sn</a>
		Aissatou Diagne	<a href="mailto:aissatou.diagne@cse.sn">aissatou.diagne@cse.sn</a>
		Ndéye Coumba	<a href="mailto:coumba.diop@cse.sn">coumba.diop@cse.sn</a>
Kenya	National Environment Management Authority (NEMA)	Sarah Kamau	<a href="mailto:sarahmuthoni95@gmail.com">sarahmuthoni95@gmail.com</a>
		Wangare Kirumba	<a href="mailto:wangarekirumba4@gmail.com">wangarekirumba4@gmail.com</a>
		John Wafula	<a href="mailto:jswafula@gmail.com">jswafula@gmail.com</a>
		Anne Gateru	<a href="mailto:gmumbianne@gmail.com">gmumbianne@gmail.com</a>
		Harron Wanjohi	<a href="mailto:harronwanjohi@gmail.com">harronwanjohi@gmail.com</a>
Chile	Agencia chilena de Cooperación Internacional para el Desarrollo (AGCID)	Juan Pablo Lira	<a href="mailto:jlira@agci.gob.cl">jlira@agci.gob.cl</a>
		Erika Astudillo	<a href="mailto:eastudillo@agci.gob.cl">eastudillo@agci.gob.cl</a>
Cook Island	Ministry of Finance and Economic Management (MFEM)	Emily Pierre	<a href="mailto:emily.pierre@cookislands.gov.ck">emily.pierre@cookislands.gov.ck</a>
		Mani Mate	<a href="mailto:mani.mate@cookislands.gov.ck">mani.mate@cookislands.gov.ck</a>
Jamaica	Planning Institute of Jamaica (PIOJ)	Kirk Philips	<a href="mailto:kphilips@pioj.gov.jm">kphilips@pioj.gov.jm</a>
Micronesia	Micronesia Conservation Trust (MCT)	Willy Kostka	<a href="mailto:director@ourmicronesia.org">director@ourmicronesia.org</a>
		Lisa Ranahan Andon	<a href="mailto:deputy@ourmicronesia.org">deputy@ourmicronesia.org</a>
		Tamara Greenstone	<a href="mailto:conservation@ourmicronesia.org">conservation@ourmicronesia.org</a>
		Shirley Ann Pelep	<a href="mailto:adaptation@ourmicronesia.org">adaptation@ourmicronesia.org</a>

Niger	Agricultural Bank of Niger (BAGRI)	Maman Lawal Mossi	<a href="mailto:mossi.lawal@bagriniger.ne">mossi.lawal@bagriniger.ne</a>
		Saidou Baraze Abdoul Razak	<a href="mailto:baraze.abdoulrazak@bagriniger.ne">baraze.abdoulrazak@bagriniger.ne</a>
Peru	Peruvian Trust Fund for National Parks and Protected Areas (PROFONANPE)	Anton Willems	<a href="mailto:awillems@profonanpe.org.pe">awillems@profonanpe.org.pe</a>
		Claudia Godfrey Ruiz	<a href="mailto:cgodfrey@profonanpe.org.pe">cgodfrey@profonanpe.org.pe</a>
South Africa	South African National Biodiversity Institute (SANBI)	Mpfunzeni Tshindane	<a href="mailto:m.tshindane@sanbi.org.za">m.tshindane@sanbi.org.za</a>
		Michael Jennings	<a href="mailto:m.jennings@sanbi.org.za">m.jennings@sanbi.org.za</a>
		Mandy Barnett	<a href="mailto:m.barnett@sanbi.org.za">m.barnett@sanbi.org.za</a>
Belize	Protected Areas Conservation Trust (PACT)	Denaie Swasey	<a href="mailto:cc.techofficer@pactbelize.org">cc.techofficer@pactbelize.org</a>
		Joyce Tun	<a href="mailto:progofficer@pactbelize.org">progofficer@pactbelize.org</a>
		Nayari Diaz Perez	<a href="mailto:ed@pactbelize.org">ed@pactbelize.org</a>
Indonesia	KEMITRAAN	Dewi Rizki	<a href="mailto:dewi.rizki@kemitraan.or.id">dewi.rizki@kemitraan.or.id</a>

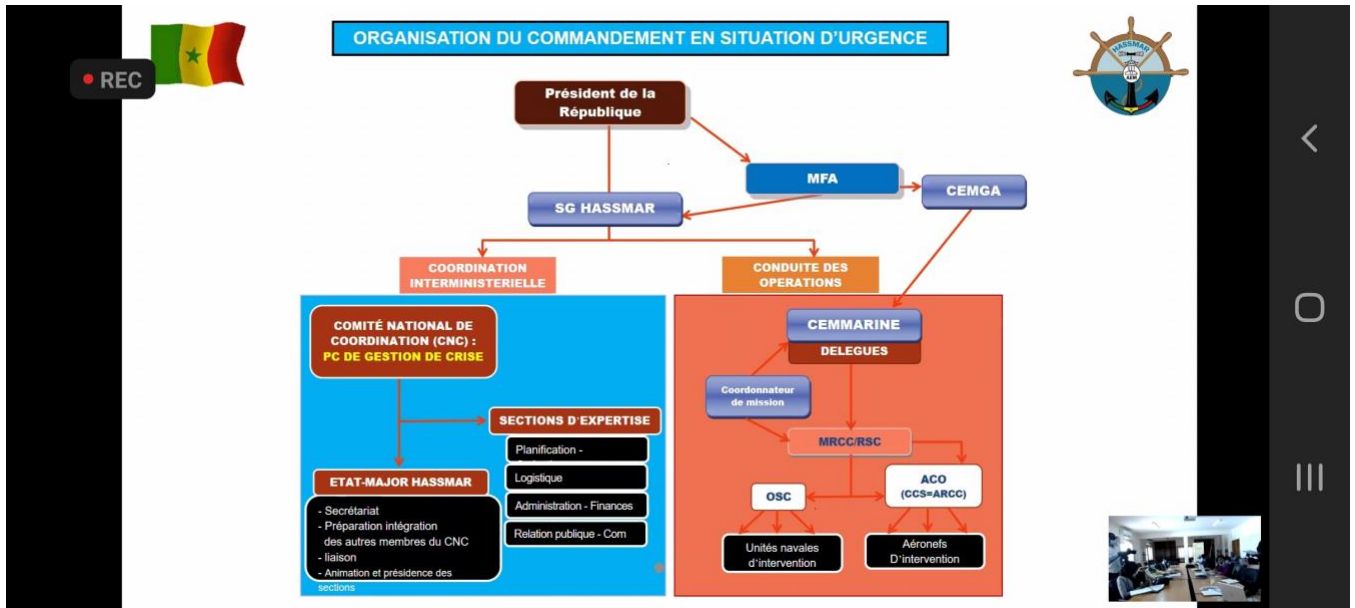
## Annex 2

### List of webinar speakers (Senegal)

Name	Function/Structure	Country
Mr. Baba Dramé	Director of Environment	Senegal
Mr. Abdoulaye Sy	Head of the Environmental Impact Assessment Division (Department of the Environment)	Senegal
<i>Mrs. Oumy Ka</i>	<i>Technical advisor in communication and public relations, HASSMAR</i>	Senegal
Mrs. Khadidia Ndiaye	Planning, Environmental and Urban Management Engineer, SAPCO	Senegal
Mr. Ernest Dione	Programme Coordinator, DEEC	Senegal
Mr. Ibrahima Fall	Programme Coordinator, NGO Green Senegal	Senegal
Mrs. Marième Soda Diall	Environmental Assessment and Risk Management Major Programme Coordinator, CSE	Senegal
Mr. Assize Touré	Director General, CSE	Senegal
Mr. Saliou Ba	Project Beneficiaries Representative	Senegal
Mr. Mattias Broman	Vice Chair, AF	Senegal
Mr. Emmanuel Seck	Programme Coordinator, NGO ENDA Energie	Senegal
Mrs. Aïssatou Diagne	Project officer, CSE	Senegal
Mrs. Aïssata B. Sall	Head of Climate Finance Unit, CSE	Senegal

### Annex 3

### Senegal Emergency Response Structure





Annex 4

Implementing institution organization related to the CSE

