AI-CD African Initiative for Combating Desertification Knowledge and Policy Brief

-Compilation of experiences and good practices in the Sahel-



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This publication was supported by: Japan International Cooperation Agency (JICA)



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Introduction

It is no secret that most environmental destruction is caused by human hands. Indeed, desertification, which is defined as the degradation of land in arid, semi-arid or even sub-humid areas, is attributable not only to natural phenomena but also anthropic actions associated with climate variations.

Among other factors, desertification is caused by bush fires, overgrazing, poor cropping practices, deforestation and overexploitation of groundwater. Examples of the resulting include the decline in biodiversity and land productivity. The drylands of Africa cover much of the continent and remain prone to desertification given their extreme fragility. This not only compromises socioeconomic development, but exacerbates people's impoverishment, which, in turn, is a catalyst for the outbreak of conflict.

Combating desertification is a complex task, which is difficult to resolve achieve without a multifaceted approach to restore degraded land to its former glory.

Accordingly, effective land restoration depends on launching relevant initiatives, with local, regional or even global scope. One example, already launched in the sub-Saharan region, is the "African Initiative for Combating Desertification to Strengthen Resilience to Climate Change in the Sahel and the Horn of Africa (AI-CD)".

The AI-CD is an African country framework that was launched by the Governments of Kenya and Senegal, JICA and UNCCD; working alongside development partners to combat desertification at the Sixth Tokyo International Conference on African Development (TICAD VI) in Nairobi in August 2016. The catalyst which sparked its formation was the acknowledgement that Sub-Saharan Africa is facing environmental deterioration and is prone to frequent and severe droughts that can lead to desertification. Also acknowledged is the fact that climate change is likely to exacerbate desertification in this region. Accordingly, the AI-CD aims to ensure that can help make nations and communities



resilient to climate change by promoting measures to combat desertification in the Sahel and the Horn of Africa. Seven (7) countries from the Horn of Africa and eight (8) countries from the Sahel participate in the Al-CD.

Vision

AI-CD aims to spearhead global efforts in combating desertification in Africa for sustainable development.

Mission

We aim to widely disseminate effective anti-desertification measures to make communities resilient to climate change.

The vision and mission of AI-CD will be achieved through three outcomes: networking, knowledge-sharing and improved access to funding.

- a) Networking involves establishing a strong network between participating countries and their development partners to combat desertification in the region as well as raising awareness of desertification within the international community.
- b) Knowledge-sharing spawns an exchange of knowledge and experience on combating desertification to make regional development efforts more effective.
- c) Improving access to finance refers to international development funding to promote measures to combat desertification in the region.

The three outcomes cited can be consolidated by integrating anti-desertification activities through three pillars, namely: policies and strategies, institutional strengthening and local implementation. These pillars are interrelated and interdependent as part of efforts to create synergies when implementing effective anti-desertification measures.

This AI-CD Knowledge and Policy Brief comprises three components, namely:

- i. Types of projects in Sahel AI-CD countries
- ii. Types of projects implemented within the scope of Africa-Japan cooperationiii. Policy Brief

(i) and (ii) are collective initiatives undertaken by countries working with partner organizations in the Sahel region to combat desertification. This publication also provides practical guidance to policy makers, technical staff and end-users of information on measures to combat land degradation and the Sahel desertification. (iii) The Policy Brief was developed based on experiences in implementing AI-CD in participating Sahelian countries, namely:

Burkina Faso, Cameroon, Chad, Mali, Mauritania, Niger, Nigeria, Senegal. African countries can use this guideline to implement effective and efficient measures to combat desertification and thereby achieve the Sustainable Development Goals (SDGs).

This chapter presents the actions undertaken by the AI-CD member countries to combat desertification.

Chapter

Types of projects in Sahel AI-CD countries

01 BURKINA FASO



Involving local people in sustainable land management by raising awareness of how their actions impact on the environment

Project summary

KEY POINT: Reinforce the capacity of the local people to take ownership of activities to combat land degradation

For several decades, Burkina Faso has been confronted with the phenomenon of desertification and the degradation of natural resources and the environment, as reflected in its low and irregular rainfall, high evapotranspiration, the growing needs of local people, the high pressure on its flora (land) and fauna and indiscriminate clearance of land.

This is how vast areas of degraded lands are restored in order to stabilize locals in the areas which they call home by replenishing natural resources and the potential for agro-sylvopastoral production. Despite numerous efforts made, however, the achievements do not appear very sustainable from the perspective of the beneficiaries. All of which underlines the need to seek funding by developing a project that aims to strengthen the capacities of stakeholders and thereby allow them to manage land sustainably. Through this project, the idea is to establish a system that encourages replication of achievement and renders it sustainable. This will be done by identifying technologies that can manage natural resources sustainably and adapt to the effects of climate change.

Details of the project

1. Basic Information

Among the key problems currently observed in Burkina Faso are:

- The decline in soil fertility and agricultural productivity;
- The shortage of crop land;
- The sharp decline in natural pastures and forest resources.

The Central Plateau and Center-West regions are no exception to this phenomenon of degradation, which is why they were chosen as intervention areas for the project. The project implementation strategy comprises four (04) main activities, namely

"Inventory of the techniques of Water and Soil Conservation (WSC) carried out in both regions", "Identification of technologies to manage grazing systems sustainably",



Map of the Central West Region

"Experimentation and capitalizing on experience from the perspective of valorizing non-timber forest products and realizing income-generating activities at 30 pilot sites", "Duplication at 100 priority sites". This implementation strategy aims to involve the populations of both regions in sustainable land management and raise awareness of how their actions impact on the environment. With this in mind, the focus will be on boosting the capacities of the relevant parties by carrying out the following activities:

- Training 50 women and 30 men in processing techniques and valorizing non-timber forest products (NTFP);
- Setting up 100 biodigesters for the benefit of farmer-breeders in both regions; • Training 50 young people in plant production techniques and planting and maintaining
- useful species;
- Financially supporting 10 women's groups to carry out income-generating activities; • Training 400 local producers from the intervention sites in grazing system management, fire prevention and pasture regeneration techniques;
- Training and accompanying 300 farmers in priority sites in Water and Soil Conservation (WSC) techniques;
- Training 200 women in the technique of making improved stoves;
- Training 500 producers in agricultural seed production techniques;
- Informing, educating and conveying existing regulatory measures to the general public;
- •Sensitizing the various actors to the phenomenon of climate change via media, workshops and brochures.

Activities to assess the situation

It is important for the project to have sufficient information about the Water and Soil Conservation (WSC) techniques carried out in the two regions before it can intervene in the areas identified. The goal is to identify the overall issue of land degradation. Studies will be conducted on existing techniques and measures. Land degradation mechanisms will be analyzed and thematic maps will be made before the project starts. This will allow

strengths and weaknesses to be identified to help create a roadmap for interventions.

2. Identification of sustainable management technologies for grazing systems

Following the assessment, technical options as follows will be proposed for the beneficiaries following the field visits and the interviews carried out in focus groups. The activities to be undertaken will be adapted according to the types of degradation involved. General meetings will be organized by region and by site, to bring together all the relevant parties in the most effective way to make final decisions on which actions should be undertaken.



Establishing stone bands using a "Big A"

Zai practiced in an agricultural field

3. Experimentation and capitalizing on the experience at 30 pilot sites

Techniques to valorize non-timber forest products and to make improved stoves will be tested at the pilot sites. Income-generating activities will also be carried out at the same time to create economic benefits for women, who are the most vulnerable groups. This will boost their purchasing power and improve their quality of life accordingly.







Forage crop: cowpea

Mowing

Conservation of forage

The men will be trained in techniques to produce and optimally exploit compost as part of efforts to encourage active participation in the activities.

4. Duplication at 100 priority sites

Technical guides and catalogs will be developed by the project to combat land degradation working alongside implementing partners.

The regional directorates overseeing the environment in the target areas will be asked to duplicate the techniques in the 100 priority sites. Activities to raise awareness among all relevant parties of climate change will be carried out, working with the media and local



Income-generating activities (Market)

authorities. Eco-citizen initiatives to encourage people to rethink their behavior will be promoted to raise awareness among the beneficiaries.



Technique for reclaiming degraded land

01 Burkina Faso

Sale of NTFPs (soumbala) at the Koudougou market (Center-West)

02 CHAD

Adaptation to climate change in Chad -Lessons learned (good practices) from the IUCN-AMCC project

Summary

Launched in December 2016, the Project "Improving information, education and communication of rural and peri-urban populations on adaptation to climate change" covers the entire territory of Chad, focusing on the priority sites of Am-Timan, Moundou and Pala (Sudanian Zone), Mao & Bol (Saharan Zone) and Mongo & Ati (Sahelian Zone). It was created after establishing the 2010 National Adaptation Action Plan (NAPA), which revealed the real need for local populations in different bioclimatic zones to be made aware of climate change.

It is worth reaffirming that climate change is a phenomenon that often exerts disastrous impacts on human health and natural ecosystems, with serious environmental, social and economic impacts. These pose real challenges for the prospects of socioeconomic development in the region. Aware of the seriousness of the issue, the Ministry of Environment and Fisheries, leveraging the Global Climate Change Alliance Program (GCCA+ in Chad), is joining the IUCN to implement the project "Improving information, education and communication of rural and peri-urban populations on adaptation to climate change".



FICHES TECHNIQUES GAOU FICHE TECHNIQUE SIMPLIFIEE DE L'AMENAGEMENT EN CORDONS PIERREUX

Nom de la technologie	Diguette en cordon pierreux		
Catégorie	Physique		
Conditions environmementales	Zones sabélienne		
Description de l'environnement humain	Groupement des producteurs agricoles		
Type de sol où la technique est appliquée	Exploitation familiale tenoe par les hommes		
Type d'utilisation des terres en lien avec la technologie	Terrain à pente faible ou moyenne		
Description sommaire	Il s'agit essentiellement d'un ouvrage anticrosif de pierres alignées suivant les courbes de niveau da terrain concerné. En plus de constituer un moyen de lutte contre l'énsion hydrique sur de fables pertes (inférieure à 3%), cette technique perme l'accroissement des performances productives des terres de culture. • Système de pierres alignées Ouvrir un sillon d'encrage selon les dimensions suivantes : largeur 10 à 15 cm, profondeur : 10 à 15 cm et déposer la terre en annet Disposer les pierres dans le sillon en une seule ligne Ramener la terre et dancer pour consolider l'assise da cordon pierreus. (Source : INERA- Burkina Faso [16] • Système trois pierres Ouvrir une tranchée d'encrage selon les dimensions suivantes : largeur : 30 à 35 cm, profondeur : Disposer das la tranchée deux lignes décalées de grosses pierres de façon qu'elles reposent sur leur plus grande surface; Superposer une troisième ligne de pierres ; Ramener la terre et larmer pour consolider l'assise da cordon pierreus.		
Objectifs	Dissipe les eaux de ruissellement ; -Favorise l'infiltration des eaux de pluie ; -Réduit l'énosion hydrique ; -Conserve la fertilité des sols ; -Restaure les sols démudés ; -Andèlore la productivité des sols par le captage et la rétention de particules organiques transportées par l'eau ; -Favoris le colmatage des rigoles en amant des diguettes ; -Contribue à la remontée de la nuppe phréatique.		
Types de problèmes de dégradation des terres	Erosion hydrique, ruissellement, dégradation chimique e atténuation des effets de la sécheresse		
Manière de lutter contre la dégradation	Mesures mécaniques pour réduire le ruissellement et l'érosio éclienne		
Niveau des connaissances techniques requis	Cinq jours de formation à la maîtrise de la technologie (5 à personnes formateurs par village)		
Contraintes majeurs	-Il finadra nécessairement disposer d'une main d'œuvre importante «Avoir une bonne maitrise des méthodes de détermination de courbes de niveau et disposer de carrières de pierres à proximité d sint à aménacer.		





Fixation by stone bands

Fixation by live hedges

This project aims to improve the level of information, education and communication of rural and peri-urban populations on adaptation to climate change (CC) for better decision-making. With considerable progress made, this project has prompted the IUCN to initiate a capitalization process, with the aim of benchmarking and assessing experiences, achievements, bottlenecks and constraints, to draw lessons from the initiatives of the project and the various partners involved.

The findings of this capitalization process can help refine the intervention strategies of present and future initiatives on adaptation to climate change.



Mowing practice and forage conservation, © AMCC+

02 Chad



Transhumance herd

03 MALI



Catalog of good practices for sustainable land and water management in dry cereal production basins in Mali

Summary

Mali has invested in a programmatic approach, aiming to help amplify good practices of sustainable land and water management (SLWM) and mitigate the harmful effects of desertification and its consequences on poverty. With these aims in mind, a "Toolkit for Sustainable Land and Water Management" was developed. The process has benefited from the support of executives of technical structures and NGO leaders; experienced in both agriculture and the environment.

This toolkit was created to meet needs of agricultural producers, whether explicitly expressed or latent, aware of the situation of their land. Tapping into their perspective and experience helps both them and us to improve our advisory services and influence environmental and agricultural protection policies.

Wide-ranging best practices, including techniques, technologies and knowledge have been developed and identified, based on documents for dry cereal production basins. They are organized, analyzed and characterized in the form of technical sheets.

The experience constituted not only a very rewarding professional exercise but also - and above all - a major challenge in terms of making a significant contribution to the search for solutions to issues of land and water degradation in Mali and elsewhere.



and the second s TABLE DES MATIÈRES AVANT PROPOS I-INTRODUCTION IF DESCRIPTION DES BONNES PRATIQUES DE GDTE 2.1 : BONNES PRATIQUES DE CONSERVATION DES EAUX ET DU SOL ET DEFENSE ET RESTAURATION DES SOLS : 10 RCHE TECHNQUE N° 2 : Antéragement des charips a partir des courbes de riveou (ACN). 13 FICHE TECHNIQUE N° 3: Diguettes antievosives FICHE TECHNIQUE N° 4: Bandes enherbées PICHE TECHNIQUE Nº 5 ZAL FICHE TECHNIQUE Nº 6 - Culture sur billows FICHE TECHNIQUE Nº 7 Deni-lune FICHE TECHNIQUE Nº 8 les Fascines 2.2 BONNES PRATIQUES AGROFORESTIERES PICHETECHNIQUE Nº 9: Haie vive/ brie vent. PICHETECHNIQUE Nº 10: Parc agroforester... FICHE TECHNIQUE Nº 11 : Regeneration Naturelle Assistée (RNA FICHE TECHNIQUE INº 12 : Défrichement amélione ... PICHE TECHNIQUE Nº 13 : Archime amélionée au Style 2.3. BONNES PRATIQUES AGRONOMIQUES FICHE TECHNIQUE Nº 14 : Bio dicesteur RCHE TECHNIQUE: N° 15: Compostage en Rose RCHE TECHNIQUE: N° 15: Compostage en Rose RCHE TECHNIQUE: N° 15: Compostage en tas enrich au Phosphate Naturel de Tierrai (PHIT). 50 RCHETCHNOUT IN 1 Company of the entropy and instance of them in RCHETCHNOUT IN 19 Utilization de la fumure organisper RCHETCHNOUT IN 19 Utilization de la fumure organisper RCHETCHNOUT IN 20 Utilization de la tempteres noies, comme fumure organisper RCHETCHNOUT IN 21 Association de plantes finitisatios verc les chifilies PICHE TECHNIQUE N° 22 | Compostage en tas à l'air libre.... PICHE TECHNIQUE N° 23 : Assolement et rotation des cultures. FICHE TECHNOLIE: Nº 24 : Semences améliorèes. RCHE TECHNIQUE Nº 25 : le chaulage des terres agricoles 2.4 : BONNES PRATIQUES ORGANISATIONNELLES FICHE TECHNIQUE Nº 26 : Convention locale de gestion des tartes FICHE TECHNIQUE Nº 27. Plan d'occupation et d'affectation des sols (PCAS).

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03 Mali

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This chapter outlines projects implemented through cooperation between Africa and Japan.



Chapter

Types of projects implemented within the scope of Africa-Japan cooperation

01 BURKINA FASO



#Non-timber forest products (NTFPs) #Win-win partnership

Involving local people in sustainable land management by raising awareness of how their actions impact on the environment

Project summary

KEY POINT : A new win-win partnership for community forest management groups, private companies, civil society and government agencies





Exhibition and sale at SIAO2012 (Ouagadougou International Art & Craft)

Training on medicinal plants conducted by Phytoflap for forest management groups in communities around classified forests

The "Participatory and Sustainable Forest Management Project in the Province of Comoé, Burkina Faso" was implemented from July 2007 to December 2012 by the Government of Burkina Faso, with technical assistance provided by the Japan International Cooperation Agency (JICA). This project involved proposing and promoting a new forest management mechanism by increasing the devolution of forest management and the growth of nontimber forest products to promote socioenvironmental responsibility. Remarkably, local enterprises and community forest management groups in the project area have established a relationship that has improved sustainable forest management and the production of non-timber forest products.

Details of the project

1. Basic Information

To stop deforestation and make us more resilient to climate change on a local level, it is important to ensure that forest conservation activities performed by local farmers remain sustainable. The classified forests of Comoé province have suffered from severe fires, illegal hunting, illegal farming and excessive cutting of firewood. Another real challenge was finding out how the local population could conserve their environment and generate financial resources to support forest conservation activities in partnership with the government.

In the project, a private company and civil society played key roles in achieving the goal of establishing sustainable forest management.

The project worked with a local pharmacy named Phytofla and based in Banfora to conduct technical training on medicinal plants for forest management groups from communities in the vicinity of the classified forests. Phytofla purchased processed primary medicinal plants that were harvested in and around the classified forests in accordance with the project's forest management plan. The training included teaching the forest management groups how to harvest the medicinal plants without depleting natural resources and upskilling so that they could dry and store these medicinal plants properly. The forest management groups sold their products to Phytofla and set aside the income earned for forest management activities, such as controlling and fighting forest fires, the most serious problem in the region, leading to land and forest degradation. Phytofla has been able to procure local medicinal plants more regularly, which has helped boost regional economic development.



Products obtained from local medicinal plants. These products were made from medicinal plants purchased from forest management groups. (Left) Dr. Dakuyo of Phytofla.

The RAKIETA Centre for fight against AIDS partnered with women members of forest management groups who participated in training on quality shea butter production organized under the project. The Centre made soaps using the shea butter these women had produced. These products were then exported through the private company "A DANSÉ" and marketed in Japan. This mechanism proved that forest management groups could earn a stable income from forest products and helped convince people that sustainable forest management was viable.

01 Burkina Faso



Training on shea butter quality improvement provided by the Project

Following this experimental production and marketing of products, a turnover of 11 million FCFA (equivalent to 18,000 USD at current exchange rates) was achieved by the groups, most of which remained active after the project.



Collaboration with a civil society group: The RAKIETA Centre for fight against AIDS. The RAKIETA Centre purchased quality shea butter produced by the forest management groups and marketed soap made from the same shea butter. Certain such products were marketed in Japan through the private company "A DANSÉ Co., Ltd" .

Total sales recorded during the project

Products	Number of participating forest management groups	Total sales recorded between 2009 and 2011 (in FCFA)
Quality shea butter	21	6,406,775
Medicinal plants	11	4,565,525

Source: Project completion report, Participatory and Sustainable Forest Management Project in the Province of Comoé, JICA, 2013.

2. Summary description of the project

- **Overall Goal:** Participatory and sustainable forest management by local people had been continuously conducted in four project target Forest Reserves (Forêts Classées).
- Project Purpose: Activities for forest management were commenced in four target Forest Reserves (Bounouna, Toumoussénni, Gouandougou and Kongoko) by local people through the Forest management Groups / Union of Forest Management Groups (GGF/ UGGF).



- **Output 1:** The national and local forest administrative agencies had enhanced capacity to
- **Output 2:** The GGF/UGGFs had enhanced capacity in sustainable forest management in the target villages.
- **Output 3:** The living conditions of the local people were improved.
- Output 4: The Forest Management Plan (PAF) in the four Forest Reserves were formulated and put into practice.
- forest management.

Burkina Faso 01

support the local people in implementing participatory forest management.

Output 5: The cooperative relationship between the national/local administrative agencies and forest administrative agencies was strengthened to implement sustainable

> Involving local people in sustainable land management by raising awareness of how their actions impact on the environment



#Livelihood improvement #Integrated rural development approach

Community-based Prevention of Desertification in South Region of Segou

Project summary

KEY POINT: Overall approach to desertification processes





Grazing in the Segou region, Mali

Conference during the project

What comes to mind when you hear the term "prevention of desertification"? For most people, "tree planting," "protection of vegetation cover," and other practical and quick impact methods come to mind. However, JICA's "Study on the Capacity Building Programs for the Community-based Prevention of Desertification in the South Region of Segou in the Republic of Mali (2004-2008)" adopted a unique approach.

In order to prevent desertification, this project focused on improving residents' livelihoods as poverty is considered its cause. The project provided wide-ranging training programs on literacy, agriculture, road maintenance, handicrafts, etc., as well as natural resource management programs. Although many of the programs appeared to be irrelevant to desertification prevention, these programs helped participants improve the basic knowledge and skills they needed to manage natural resources in the community.

Details of the project

1. Negative impact of desertification on people in Segou

Millet is a staple for the Malian people; served with sauces or cooked to form a paste and part of their daily diet. However, the unit yield of millet has declined from 800kg/ha in the 1980s to 600kg/ha in the 2000s, due to land degradation. The Segou region, the project's target area, is a millet-growing hotbed, producing more than a third of the national output. Recently, intensifying desertification has sparked a decline in yields, fewer wood

resources for firewood, a lack of pasture and conflicts between farmers and herders. An effective means of preventing or limiting desertification was therefore essential for the population of the Segou region.



Millet plantation

F

2. Action plan establishment, aiming to change the living of 0.4 million people





Chief of the commune (middle of the picture) planting a tree

02 Mali

Farmers in the Segou region, Mali

The project was implemented in three Cercles (Baraouéli, Segou and Macina) in the south of Segou, which encompasses 520 villages and around 360,000 people. The ultimate objective was to establish an action plan to restore natural resources and boost the quality of life of villagers. To achieve this, a draft action plan was prepared and a pilot project was conducted in 47 villages to collect lessons learned and refine the final action plan.

Overview of a reforestation site

The stand-out feature of this project is its comprehensive approach to improving the capacity of the inhabitants. One example of its impact is the literacy program. This program allowed residents to record the results of their discussions and write business plans that helped them progress with their activities. The project provided 14 types of programs, some of which were not directly related to desertification prevention. On completion, the people acquired new skills to be able to eradicate poverty and prevent desertification unaided. In addition, given that local leaders chosen by residents play an important role in encouraging community activities without donor support, training to develop their facilitation skills was also provided. At the end of the project, the action plan was formulated and the Government of Mali decided to implement part of this plan in 2008.

03 NIGER

#Management of reservoirs #Farmers field school

Valorization of Water Reservoirs and Self-Promotion of Local Communities in the Sahel

Project summary

KEY POINT: Achievement of autonomous use and management of water reservoirs by residents, whose capacities have been strengthened by implementing farmers field schools (FFS)



FFS session at Tondi Korey

"Project on the Effective Utilisation of Reservoirs and Auto-Promotion of Local Communities in the Sahel" was a technical cooperation initiative involving the Government of Niger and the Japan International Cooperation Agency (JICA) and jointly conducted from March 2012 to December 2015. Under the project, water reservoirs in the target area (Niamey, Maradi and Tahoua regions) were repaired and resident-led cooperatives were established to maintain and manage the reservoirs.

Moreover, the following tangible benefits were recorded by implementing a means of technology transfer called Farmer Field Schools (FFS): improvement of irrigation technology, empowerment of participating producers and strengthening of solidarity among cooperative members.

Details of the project

In the Sahel region of Niger, seasonal variations and the lack of natural rainfall mean low agricultural productivity. Under such circumstances, irrigation is an effective measure to help stabilize agricultural production. Within the project's target area, although several small water reservoirs have been built by the government, local residents were unaware and lacked experience on how to use them effectively for agricultural production and to



Community-based Prevention of Desertification n South Region of Segou



Potatoes produced in the village of Tarwada

improve their quality of life. They also lacked the know-how to manage the maintenance of the water reservoirs. The extension and management systems put in place by government were also inadequate, all of which meant the water reservoirs were not used effectively.



A water reservoir whose water has run out during A water reservoir repaired in Bakassomouba the dry season

Consequently, the project's scoping study identified several small impoundments requiring repair, whereupon eight small impoundments were repaired and wells were sunk at 14 sites.

Cooperatives of local residents were established to manage the reservoirs and ensure they were used and maintained properly. Similarly, to consolidate the capacity of members to carry out the necessary operations and manage the cooperatives by themselves, the project trained individuals in how to create business plans, develop and comply with rules of procedure, manage cooperative funds, hold general assemblies and manage the maintenance of the water reservoirs, including repairing with gabions, dredging and daily inspection.

Moreover, in line with the request of cooperative members, the project supported agricultural, livestock and tree planting activities, all of which proved effective ways to use water reservoirs. With the need to improve agriculture in mind, Farmer Field Schools (FFS) were used to improve agricultural techniques for the use of water reservoirs.

2. Promotion of residents' self-confidence through FFS







Members discussing okra production

Growers faced endless problems related to agriculture. Typical comments included: "I would like to increase vegetable production through irrigation," "I want to know how to apply fertilizer and pesticides properly". The FFS aimed to address such problems by facilitating producer groups, comprising 20-30 members or so, to conduct several comparative trials on vegetable speculations/production and thereby improve their agricultural skills. The grower groups meet once weekly for a FFS session on learning topics such as "Varietal comparison of lettuce through irrigation," "Stem training techniques in tomato cultivation," among others. The sessions lasted two hours and covered seven topics. An example session schedule is shown in Table 1.

Of all the FFS themes considered, agro-ecosystem analysis (AESA) stood out as particularly crucial. Members observed how certain crops and vegetables grew on their farms and made presentations to all members on how the plantation evolved. They collectively analyzed the problems and considered how best to solve them through group discussions.

Observing the regularity of the fields gave producers the insights they needed to detect pest-related problems from an early stage. The FFS sessions also provided good confidence training, since participants had many opportunities to make presentations and express their opinions in front of group members. The group discussions during FFS sessions also helped establish locally acceptable techniques that leveraged members' knowledge and experience. The FFS also encompassed an interactive relaxation program called Group Dynamics, through which members entertain themselves by dancing, singing and telling short stories or anecdotes. This program encouraged group members to become more social and motivated to learn.



Conduct of AESA in a FFS session in Sega

Accordingly, with the conduct of FFS, not only are appropriate technologies practiced, member empowerment has also been enhanced and solidarity among members has been improved.

As well as consolidating member capacity, this project has helped strengthen reservoir management cooperatives so that they are in a position to conduct activities independently.

03 Niger

FFS graduation in Zongon Roukouzoum

Table 1: Sample Program of a FFS Session			
1. Prayer; Roll Call	4. Group dynamics		
2. Reminder of the previous week's session	5. Special themes		
3. Agro-ecosystem analysis (AESA)	6. Reminder of the day		
 Field observation and data collection 	7. Planning activities for the following week		
Data processing			
Presentation and discussion			

Table 1. Cample Drearam of a EEC Cossion

3. Training of farmer-facilitators and establishment of project management system

Although the project covers an area that spans three regions and engages in wide-ranging activities, the limited number of Ministry of Agriculture extension agents made increasing the number of project sites and farmer-beneficiaries a challenge. In response, two members were selected from each FFS group based on their facilitation skills, motivation for agriculture and knowledge of agricultural techniques and then trained as producerfacilitators. Under this project, 20 extension agents and 52 farmer-facilitators were trained to promote the project's extension on a regional level. By the end of the project, FFS had been implemented in 19 sites and 347 members had successfully completed the program.



Training of facilitators in charge of water reservoirs

The fact that the FFS sites were geographically widely dispersed hampered efforts to visit all of the sites and conduct FFS monitoring. To determine the status of local activities promptly, the Niger Government held regular meetings in two stages: (1) Extension workers or farmer-facilitator's meeting -> Regional Agriculture Office meeting; (2) Regional Agriculture Office meeting -> Central Agriculture Office meeting. Dialog with extension agents or producer-facilitators via the Regional Agriculture Offices allowed the Central Agriculture Office to handle the various issues flexibly according to the local circumstances.

Number of trained FFS Facilitat Farmer-Facilitators Extension having implemented agents the FFS 7 **Region of Tahoua** 18 **Region of Maradi** 10 34 3 0 Region of Niamey 20 Total 52



Table 2: Overview of Project Achievements

ors	Number of FFS implemented			
d	Number of FFS sites	Number of FFS groups	Number of FFS graduates	
	6	15	85	
	11	26	214	
	2	2	48	
	19	43	347	

Valorization of Water Reservoirs and Self-Promotion of Local

04 MALI & NIGER



#Guidelines #Natural resources management #Soil conservation

Development of a guideline for the conservation and management natural resources in Mali and Niger

Project summary

KEY POINT: Guidelines, natural resources management, soil degradation, conservation of soils, reforestation, soil fertility improvement, Sahel, arid and semi-arid lands





and cement, are described in the Conservation of highlighted in the technical manual on vegetation Soils Technical Manual

Soil erosion control methods, such as using sandbags The villagers'role in managing natural resources is conservation

People in the arid and semi-arid lands of Niger and Mali are facing the impacts of land degradation, which has seen their income from agriculture decline due to deteriorating land resources. The study was conducted to address the challenge and related negative impacts and develop technical guidelines for extension agents to sustain agricultural productivity through soil and plant conservation.

► Details of the project

1. Basic Information

Arable land in the Sahel region of semi-arid West Africa is being degraded by intensive land use activities, including farming, extensive livestock rearing and excessive fuel collection. Accordingly, there is a need not only to introduce conservation techniques to mitigate soil and vegetation degradation, but also to facilitate and involve villagers in conservation efforts. Accordingly, villagers are part of the solution. Also crucial is a regional or local support system to encourage and guide villagers in solving natural resource management problems.

In this context, the Japanese International Research Center for Agricultural Sciences (JIRCAS) joined the Institute of Rural Economy of the Republic of Mali and the Ministry of Agriculture in the Republic of Niger to conduct the "Study on the Establishment of Methods of Management and Conservation of Resources for Agricultural Production". The study was conducted from 2008 to 2012 with grants from the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan.

Four villages in Mali and two in Niger were selected as target areas for verification. Conservation activities (e.g., erosion control, reforestation and soil fertility improvement) were performed there using certain approaches and techniques to clarify constraints and emphasize and consolidate the role of the villages and organizations involved. All the approaches applied will be compiled into technical guidelines and manuals.

2. Methodology: A development approach to address challenges with local people

In the guidelines, problems are solved by applying the methodology. This addresses existing problems to be solved and helps accelerate the problem-solving process with the cooperation of the villagers. It also allows the local government official to act as a facilitator, allowing broad participation and paving the way for villagers to clarify and solve problems autonomously.



3. Development of user-friendly manuals applicable to the Sahel region

The approach used in the guidelines is widely applicable in the Sahel region because it includes details of procedures and examples that local government agents in the agriculture, forestry and environment sector can utilize in conservation activities with villagers. The guidelines have already been certified by the Ministry of Agriculture of Niger and by the Institute of Rural Economy, Ministry of Agriculture of Mali. Similarly, the technical manuals, which are presented in ten separate volumes, including one on forest conservation, have been acclaimed by agents of the relevant agencies in Mali and Niger, because they clearly set out the information and procedures needed for community agents to guide and advise villagers.

04 Mali & Niger

[Procedures] Step1. Facilitators classify the problem which interferes with the progress of activity.

Step2. Clarify the problem through 5W3H* asking, and share with villagers.

Step3. Embody the appropriate measures with villagers through 5W3H asking.

Step4. Implement the measures, or identify the constraining factors if activity is not smoothly conducted.

Step5. Problem is solved, or back to Step1 if problem is not solved or new problem shows up.

* 3H: How to + How many + How much

05 SENEGAL

CASE-1 #Land degradation #Technical manual #Involvement of local communities

Promotion of countermeasures against land degradation by local people themselves for a prosperous future in the rural area

Project summary

KEY POINT: Strengthen the capacities of human resources so that activities to combat land degradation and promote land use are performed on an ongoing basis by the populations themselves.

Combating deforestation and land degradation is one of the political priorities of the Government of Senegal in the environmental sector and several projects and programs have been implemented in this area to date. However, the weakness of sustainability in the context of locally implemented activities after the completion of projects/programs and the insufficient capitalization of achievements by the concerned actors persist.

This explains the need to capitalize on achievements, identify and experiment with appropriate and applicable techniques and measures, consolidate the capacities of the relevant parties (forestry agents, local populations, local communities, etc.), implement a strategy to multiply the capitalized achievements and organize a mechanism to ensure achievements made in the field are sustainable. To solve these problems, the government of Senegal commissioned the Japanese government to assist with this project. In response, the Japan International Cooperation Agency (JICA) launched the "Capacity Building Project on restoration and promotion of effective use of degraded area (CODEVAL)" in March 2011 in collaboration with the Directorate of Water, Forestry, Hunting and Soil Conservation of the Ministry of Environment and Sustainable Development as the counterpart institution (C/P).

The project aims to build the capacity of human resources (forestry agents, locals, communities, etc.), to ensure activities to combat land degradation and promote their valorization are performed on an ongoing basis by the local people themselves, supported by forestry agents, local communities and other local partners after the project is completed.

The project was completed in February 2016.



Development of a guideline for the conservation and management natural resources in Mali and Niger



Details of the project

1. Basic Information

The expansion of bare land or land with low vegetation cover (soils characterized by high levels of sulfuric acid), soil salinization, soil weakening (due to excessive monoculture in the groundnut basin¹ or overgrazing), are all major problems currently observed in Senegal. The decline in arable as well as forested land or the decrease in cereal yields, etc., with an ever-increasing unit area in the regions of Fatick and Kaolack, are particularly prominent and targeted by the Project.



Actually, the two regions in question are experiencing two major problems related to the prevalence of soils containing high levels of sulfuric acid and weakening of arable land. These problems greatly impact the lives of the rural populations in these two regions, which are characterized by high population growth.

The project implementation strategy comprises four main activities, namely "Activities to grasp the local situation", "Identification of techniques and methods", "Experiments and capitalization on results at 20 pilot sites" and "Scaling-up at the 80 priority sites". By testing the techniques and methods identified in 20 pilot sites, the project not only considered measures to counter land degradation but also additional activities related to income generation.

2. Activities to grasp the local situation

One key must for the project is to ensure sufficient information about the target area before undertaking an appropriate approach to handle land degradation issues. To pinpoint the current status of land degradation, identify appropriate techniques and methods and select the target sites, existing techniques and measures were studied, land degradation mechanisms analyzed and thematic maps compiled at the beginning of the project. Subsequently, pilot sites and priority sites were selected.



Site visit of the water erosion



Priority Site Selection Workshop

3. Identification of techniques and methods

Following the site survey, technical options applicable to the local people were selected following observation visits and focus group interviews. When determining the activities to be undertaken at the different sites, the Project proposed various techniques suitable for the respective target sites to the local communities, taking the types of degradation into account. The final decision was made with the consent of the village assembly of the different target sites.



Local seminar for activity launching

4. Experiments and capitalization on results at 20 pilot sites

The selected techniques and measures were tested at the pilot sites. Concurrently, income-generating activities were carried out to establish beneficial spin-offs, such as scope to use compost generated by the techniques applied efficiently and a greater motivation on the part of local people to participate in the activities.

Туре	
Combating water erosion)
Wind erosion control	•
Fight against salinization / improvement of soil	•
fertility	+ +
)
Income-generating activities	+

05 Senegal

Kick-off meeting at a pilot site

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- Framed crabgrass, stone bands, with grass strips Improved cultivation techniques to prevent water erosion
- Planting of windbreaks, planting of hedges
- Intercropping (combined cultivation)
- Establishment of improved fallow strips
- Improved composting
- Agroforestry/corridor farming
- Assisted natural regeneration (ANR) + reforestation
- Prevention of land degradation and improvement of soil fertility through improved cultivation methods
- Forest conservation (support for defenses, etc.)
- Planting of halophilic species and herbaceous plants Extension of ECOSAN latrines
- Support for village nurseries
- Planting of income-generating species
- Market gardening



Products (compost) of improved composting

Manufacture of stone bands







Production of market garden plants

actors.

Village nursery

Reforestation in the grain field

The guides, manuals and tools produced by the Training, Outreach and Demonstration Project can be downloaded from the following links. These approaches can also be applied to other countries in arid/semi-arid zones!

Written by Yusuke Goto,

AI-CD Secretariat Support Team / Earth and Human Corporation, Former Team Leader of CODEVAL Project

5. Scaling up to 80 priority sites

The manuals and technical catalogs were developed by the project in collaboration with the FORESTRY TRAINING AND RECYCLING CENTER IN THIES (FORET Center). Forestry officers in the target areas made visits to replicate appropriate techniques and measures at 80 priority sites in the Fatick and Kaolack regions. The project also designed and implemented a scaling-up approach: "Local and School Green Activities (AVLOS)", based on the involvement of local communities and the development of the educational network. At the same time, the Project has developed an awareness-raising tool called "SARAR/CODEVAL", which adapts the SARAR/PHAST² method often used in the health and hygiene field. The SARAR/PHAST method promotes behavioral change by raising awareness and empowering individuals. It has been provided to forestry and agricultural

agents, but also on a wider scale to actors such as local communities and educational



Workshop to develop practical guides



Practical guide, technical catalogs and awareness tools produced by the Project

2 PHAST stands for "Participatory Hygiene and Sanitation Transformation" and is a joint program conducted by WHO and the UNDP/World Bank Water and Sanitation Program (WSP). PHAST is a public health outreach method using a participatory "SARAR" approach. SARAR stands for "Self-esteem", "Associative strength" "Resourcefulness", "Action-planning" and "Responsibility".

For more information, please refer to the guidelines and reports

Promotion of countermeasures against land degradation by local people themselves for a prosperous future in the rural area

Equal-Opportunity-for-All Approach Encourages Local Residents Manage Surrounding Natural **Resources Sustainably**

Story highlights

- To harmonize the conservation of soils and improve the quality of life of local communities, the Government of Senegal and the Japan International Cooperation Agency (JICA) have developed an Equal-Opportunity-for-All or PRRIE, preceding the "Leave No One Behind" promise of the 2030 Agenda for Sustainable Development or the SDGs.
- The PRRIE approach, characterized by its high-cost effectiveness, is an extension method systematized through Japanese cooperation in Senegal and later customized for Malawi and Madagascar.
- Key achievements: Planted 241,000 trees in 3 years and more than half of the residents who participated in the reforestation training continued practicing the techniques in Senegal one or two years after the training.

Project summary

What comes to mind when you hear forests of Senegal mentioned? Like most African countries, almost half of Senegal (45%) is forested, but the country was blighted by deforestation in the 1990s. Its forests have declined due to logging, fires, agricultural development and overgrazing. In turn, the destruction of the forest has caused soil degradation which has triggered a decline in agricultural productivity. To reverse this trend, JICA and the Ministry of Environment, Protection of Nature, Reservoirs and Artificial Lakes of Senegal implemented Integrated Community Forestry Development Project or PRODEFI (Projet Communautaire de Développement Forestier Intégré), phase I (2000-2005) and phase II (2005-2008). This project aimed to improve the environment and living conditions of local populations by promoting community forestry and income-generating activities by adopting a community-based rural development approach called PRRIE, or Participatory Rural Development and Resource Management through Integrated Training for Equal Opportunities.



Details of the project

What is **PRODEFI**?

PRODEFI is a project implemented by JICA and the Ministry of Environment, Nature Protection, Retention Basins and Artificial Lakes of Senegal. The idea was to promote certain activities of local residents, such as reforestation, which were relevant in the context of managing natural resources. Following the first phase of implementation from 2000 to 2005, the second phase got underway in 2005, targeting 30 villages along the Bao Bolong River in the Nioro Department, Kaolack Region. The project aimed to pave the way for sustainable natural resource management activities to be implemented by local residents even after the project was completed.



What activities are carried out by PRODEFI?

1. Development of Community-Based Rural Development Approach: PRRIE

A community-based approach to rural development known as PRRIE, or Participatory Rural Development and Resource Management through Integrated Training for Equal Opportunity, was developed through PRODEFI by Mr. Naoto Noda of Hitonomori Co., Ltd. and has since been applied to two JICA projects in Malawi and Madagascar. PRRIE builds basic capacity in terms of individuals through a series of training sessions in the initial phase. It then seeks more assistance as a second step and, where feasible, demonstrates positive feedback after participation in the training sessions.

2. Trainings in villages

The main activity of PRODEFI was training. PRODEFI's training sessions were organized on the basis of the following five simple PRRIE principles, to ensure equal opportunities for all, while achieving a high-cost effectiveness ratio.

The training sessions have to: (i) meet local needs, (ii) use locally available resources, (iii) be organised in villages where the people live, (iv) not select the participants, and (v) target the majority of people.



Everyone should participate in PRODEFI training sessions, so the percentage of local residents having acquired various techniques through training increases accordingly in each village. What happened in terms of results? Local residents began to implement the techniques they had learned through individual and group training sessions in various village locations and to communicate with each other and/or witness each other's successes.

PRODEFI's training topics range from activities to manage natural resources (such as reforestation, seedling production and erosion control) to income-generating activities, including vegetable and fruit tree cultivation and processing and poultry farming. Scope to cover such a wide range of topics in the training sessions has helped PRODEFI support the lives of local residents overall.



of a simple tool for horizontal verification)





Training in vegetable and fruit processing



Training in tree planting management (reforestation in salt-damaged areas)

3. Support for actions by local residents who participated in training

Following the training, local residents put the techniques they learned into practice. PRODEFI closely monitored the activities carried out by these residents, verified the types of difficulties they faced and how they addressed them. For problems that the residents were unable to address unaided, PRODEFI provided follow-up technical assistance and/or information as needed.



Plant production by local residents



Sale of vegetables on local markets

Sustainability of resident initiatives

This is how PRODEFI supported local residents so that activities like tree planting and vegetable cultivation, which were initiated after training, would eventually be implemented consistently by the residents themselves. Indeed, 52.8% of local residents who participated in the reforestation training, continued to practice the techniques they had learned, even one to two years after the training, which saw 241,000 trees planted by residents from 2005 to 2007.

By Takuya Shiraishi AI-CD Secretariat Support Team



Equal-Opportunity-for-All Approach Encourages Local Residents Manage Surrounding Natural Resources Sustainably

05 Senegal

Training in tree plantation management

Cattle feeding with loans



#Combat desertification #Sahel #Technical manuals

Development of Technical Guides to Combat Desertification in the Sahel Region

Project summary

KEY POINT: Development of eight useful Technical Guides to Combat Desertification in the Sahel Region



VENN diagram in one of the manuals (Volume 2)

Zai technique in the Soil Conservation Manual (Volume 5)

The international community has long been aware of the major economic, social and environmental ramifications of land degradation and desertification for many countries in different regions of the world. In Japan, the problem of desertification was widely acknowledged after the extreme drought of the early 1980s in the Sahel, whereupon the Committee on Agriculture and Rural Development in Africa was established in Japan in 1984. Acting on the report of the committee, the Japan Green Resources Agency (J-Green), decided to address the problem of desertification in Africa and started studying antidesertification techniques; supported by the Government of Japan. From 1996 to 2000, J-Green developed eight technical manuals for combating desertification based on the results of the pilot studies and the experience of Niger, Mali and Burkina Faso. In 2008, the project of J-Green Overseas Department was transferred to the Japan International Research Center for Agricultural Sciences (JIRCAS).

The project developed the following eight manuals in French and compiled them under the title "Technical Guides to Combat Desertification in the Sahel Region". The manual focuses on the following topics: 1) Project planning, 2) Formulation and management



Sahel Region 06

Development of Technical Guides to Combat Desertification in the Sahel Region

This chapter is a catalyst for achieving effective anti-desertification measures in each of the three pillars of the AI-CD in participating countries.



Chapter Policy Brief

POLICY BRIEF

A common approach to combating desertification and building resilience to climate change in the Sahel was developed in a policy brief; based on the experiences of implementing the AI-CD in the participating Sahelian countries, namely: Burkina Faso, Cameroon, Chad, Mali, Mauritania, Niger, Nigeria, Senegal. This guideline can be used to allow African countries to implement effective and efficient anti-desertification measures to achieve the SDGs.

Approaches to achieving the AI-CD pillars

They are threefold: **policies and strategies**, **institutional strengthening and local implementation**.

1. Policies and strategies

The policies and strategies pillar ensures political commitment at the highest level, integrating the fight against desertification into policies, national ownership and capacity development and resource mobilization to combat desertification.

1.1 High-level political commitment

High-level political commitment reflects the latest developments by adopting the relevant international obligations and conventions on desertification, land degradation and drought; biological diversity; and climate change, all of which constitute efforts toward achieving the Sustainable Development Goals (SDGs). Political commitment can be achieved through the national development plans in each country in line with the SDGs and related targets. Plans should be developed and implemented by working closely alongside development partners and relevant stakeholders and engaging in dialog and consultation. Commitment can also be achieved by enacting relevant and specific national laws and legislation, declarations and executive orders and formulating appropriate policies and strategies.

1.2 Integrating the fight against desertification into policies

The impacts of any initiative to combat land degradation, desertification and drought will only be felt if the work to implement activities is integrated into country-specific policies and strategies commensurate with the global agenda such as Goal 15.3 of the SDGs. Activities should also be implemented in accordance with appropriately formulated integrated development plans on a country level. Relevant institutions or governing and functional bodies should be established and empowered to drive the process forward and collaborate with development agencies.

1.3 Country ownership and capacity-building

Initiatives to combat land degradation, desertification and drought should be anchored in relevant ministries, departments and country agencies on national, regional and local levels. Agents implementing the initiatives should be empowered through relevant skills enhancement programs, while end-users of the information should be empowered to apply the information, knowledge and technologies in the fields.

1.4 Mobilization of resources

Access to funding can catalyze efforts to translate policies and strategies into practical action. The upsides of antidesertification initiatives are strongly felt, provided the implementation of activities is funded. Resources for activities to implement anti-desertification measures are also available from various sources. However, access to resources should be prioritized and efforts made to engage development agencies in dialog on how best to identify potential funding mechanisms. These include development partners, the private sector, non-governmental and international organizations and communities. Countries should build sufficient capacity to source resources from various funding agencies. Financial resources can also come from within governments.

2. Institutional reinforcement

Institutional strengthening involves an intersectoral and multi-stakeholder approach as well as awareness and education measures that would consolidate activities to combat desertification.

2.1 Cross-sectoral and multi-stakeholder approach

Measures to combat desertification require an intersectoral and multi-stakeholder approach. This involves government ministries, departments and agencies as well as coordinating and mobilizing with relevant organizations and stakeholders to combat desertification.

2.2 Awareness-raising and education

Deliberate community empowerment,

awareness-raising and environmental education are all important approaches to promote broader stakeholder engagement in the fight against desertification.

3. Local implementation

Of these three elements, implementation on the ground is perhaps the most important phase. It comprises taking initiatives and undertaking antidesertification activities that include addressing the following challenges, among others: Assisted natural regeneration (ANR), protection of riverbanks and watercourses, participatory management of forest and wildlife resources, protection against overgrazing, soil degradation, drought and water shortages, conflict management, combating bush fires, dune fixation, massive reforestation and the empowering local people to reforest roads and concessions.

3.1 Assisted natural regeneration (ANR)

- •Protect seedlings from livestock and bush fires
- •Use either thorny branches placed around the seedling (at the seedling stage) or thorny branches planted around the seedlings or stacking bricks
- •Repeat this procedure annually and as required until the plant is no longer under threat
- •Establish a protection system
- •Keep twisted or fragile plants straight.

This device ensures the trunk remains straight while protecting them from the ravages of strong winds.

3.2 Protection of banks and waterways

•There are four general pillars applied when protecting banks and waterways:

- ▶ maintenance of waterways
- restoration of the riparian protective strip
- recovery of degraded soils and
- ▶ fight against slope erosion

3.3 Participatory management of forest and wildlife resources

•When protected forests are involved, the management process by negotiating with local people for the concession and to delimit the area to be managed

·Conversely, this negotiation stage does not exist for classified forests since their boundaries are already known in the classification decree

3.4 Fencing measures

•Consult within the village on the goals of the fencing measures, identify the size and limits of the area to be set aside by consensus

•Define by consensus how the rules (in the form of a code of conduct) are to be respected by all to ensure the fences are effective and reconfirming how it will be managed

•Establish a village or inter-village committee (if necessary) to oversee and address issues related to fencing · Identify and demarcate the land, woody or

herbaceous enrichment by direct seeding, planting or assisted natural regeneration, scarification, construction of erosion control sites and firebreaks

3.5 Overgrazing

Improving natural grazing

- •Transhumance
- •Herd management planning

3.6 Soil degradation

- •Techniques for conserving soils
- •Techniques for boosting soil fertility
- Dune fixation techniques
- •Techniques to fix banks
- •Techniques for the recovery of salty soils

3.7 Drought and water shortages

- •Water recovery and conservation techniques
- •Water purification techniques
- •Groundwater use
- •Optimal preparation for drought

3.8 Conflict management

·Documented best practice for conflict resolution

3.9 Fight against bushfires

- ·Raise awareness among the surrounding population about the dangers of poorly extinguished fires
- •Opening of firebreaks at least 7 m wide and effectively cleaned; assisted by indigenous populations
- •Regular maintenance of firewalls
- •Establish surveillance and rapid intervention brigades
- •Run an early fire program

3.10 Dune fixation

•Erect a coastal barrier to stop the first influx of sand and create a counter-dune ·Set up a dense network of protective tiles before the rains come

•Plant in the tiles to optimally protect the young plants as soon as the rains fall ·Proceed with replanting to achieve a positive survival rate (3 months), recovery (1 year) or even success (3 years)

3.11 Massive reforestation (rehabilitation of degraded forests)

- Establish community nurseries
- ·Proceed with planting as soon as the rains come and task the indigenous populations with the entire chain of activities (planting, replanting, protection, monitoring and evaluation)

3.12 Reforestation of roads and concessions

- •Spark competition and healthy rivalry within the populations to greenify the roads of the cities and villages and the concessions
- •Make available well-timed seedlings
- ·Ask the heads of Muslim families to encourage their members to plant fruit or shade trees in their respective concessions. In order to water these trees, it is possible to make them places of ablution. This ritual, which is done on average five times a day before prayers, would make it possible to "kill two birds with one stone", i.e., to comply with the requirements of the religion and to bring water to the plants planted which need it for their development.

References

- ► AI-CD Horn of Africa Policy Brief
- ▶ CILSS Presentations at the Knowledge-Sharing Webinar
- ▶ Reports on dune fixation projects in Senegal

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