

**INTRODUCTION, ADOPTION AND EXPANSION OF THE VETIVER SYSTEM  
IN CONGO - KINSHASA, CONGO - BRAZZAVILLE AND UGANGA  
REPUBLICS:  
SHARING EXPERIENCES FROM 2003 TO 2014**

by  
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# Outline

## ➤ INTRODUCTION

## ➤ PROJECT LOCATION AND CONTEXT

## ➤ METHODOLOGY

- Advocacy toward policy makers and construction companies
- Popularization of vetiver towards the local population as potential nurserymen or suppliers
- Small scale demonstrations

## ➤ RESULTS

## ➤ CONCLUSION

# 1. INTRODUCTION

- Despite its many benefits, vetiver technology often faces some barriers which hinder its adoption and its large-scale use.
- The experience learned from Congo-Kinshasa, Congo-Brazzaville and Uganda since 2003 until 2014 indicates that these barriers are centered around four different major actors:
  1. Policy makers;
  2. Companies involved in infrastructures projects implementation;
  3. Local people; and
  4. People involved in vetiver technology popularization.
- These four actors simultaneously play very important roles in the success or failure of the adoption and expansion of vetiver technology in any country.
- This presentation aims to share experiences from projects in which the vetiver system has been successfully introduced, adopted and widely used in this part of Africa.

## 2. PROJECT LOCATION AND CONTEXT



Congo-Brazzaville and Uganda Republics are two of nine neighboring countries of the Democratic Republic of Congo (Congo-Kinshasa).

These three African countries, share similar climatic conditions and problems in many cases, such as flooding in certain periods and drought in others. This last decade, government programs in these three countries have focused on road construction and rehabilitation projects.

However, soil erosion is a big concern during the implementation of these road projects due to heavy rainfall.

Vetiver systems have been used to deal with this problem. Here is how it was done.



### 3. METHODOLOGY

#### 3.1. Advocacy and/or lobbying to decision makers



Numerous meetings were held with decision makers (lead construction managers) to convince them of the importance of using vetiver on different road projects and the fight against erosion, concentrating on vetiver's low maintenance costs and its ability to insure long-term sustainability of the roads being built.

# 3. METHODOLOGY

## 3.2. Advocacy and/or lobbying to decision makers



This stage is a difficult one as most of the construction companies prefer more expensive solutions as they can obtain higher profits.

### 3. METHODOLOGY:

#### 3.3. Promoting vetiver to local communities to increase supply and availability of vetiver plants



Promotion at the community level includes providing basic agricultural tools to be used to create community-based nurseries for vetiver multiplication. 100 nurseries were created this way.

# On-site training for vetiver propagation in community nurseries





Vetiver multiplication between land owners served as boundry markers also provided sources of vetiver increasing the availability of vetiver as well for various projects.





Several nurseries were created just for specific projects. This shows an eight hectare nursery which produced more than 20 million slips used for a road project in Congo Brazzaville going from Pointe Noir on the coast inland to the capital Brazzaville.

## 3. METHODOLOGY

### 3.4. Small scale demonstrations of vetiver technology



With USAID funds, two urban ravines were stabilized in 2005-06 in Kikwit, Congo-Kinshasa as a means to demonstrate the effectiveness of vetiver in urban settings. Each ravine covered several hectares.

# Kikwit ravine in Congo-Kinshasa, initial status



Kikwit ravine 12 months later totally stabilized with vetiver.

# Erosion control demonstration in Boukeni Congo-Brazzaville



**Initial status at the Boukeni ravine, before placing sandbags containing soil and planting vetiver**



**Placing bags containing topsoil and vetiver planting on the Boukeni site (February 2009)**



**Boukeni site, 2 months after planting vetiver directly into the bags with topsoil (April 2009)**

**Boukeni site completely stabilized by vetiver, 10 months after planting (November 2009)**

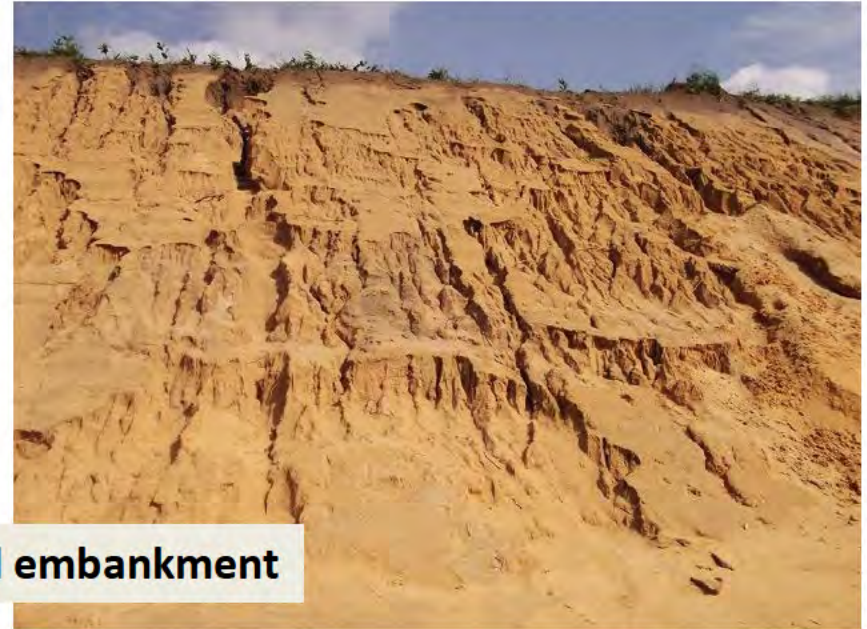


# Brazzaville-Pointe Noire highway project

Vetiver was successfully tested on a small part of an eroded embankment before its large scale use.



**Initial status: eroded embankment**



**April 2012, planting of vetiver**



**July 2012, 11 weeks after**

**The Vetiver system was successfully tested on a small part of a vulnerable embankment before the large scale use on the Congo Brazzaville-Pointe Noire highway project**





# Road Stabilization

This road connects the city of Fortportal and Bundibugyo in Uganda, a project implemented by FEMISA International in August 2013

August 2013



May 2014

## 4. RESULTS

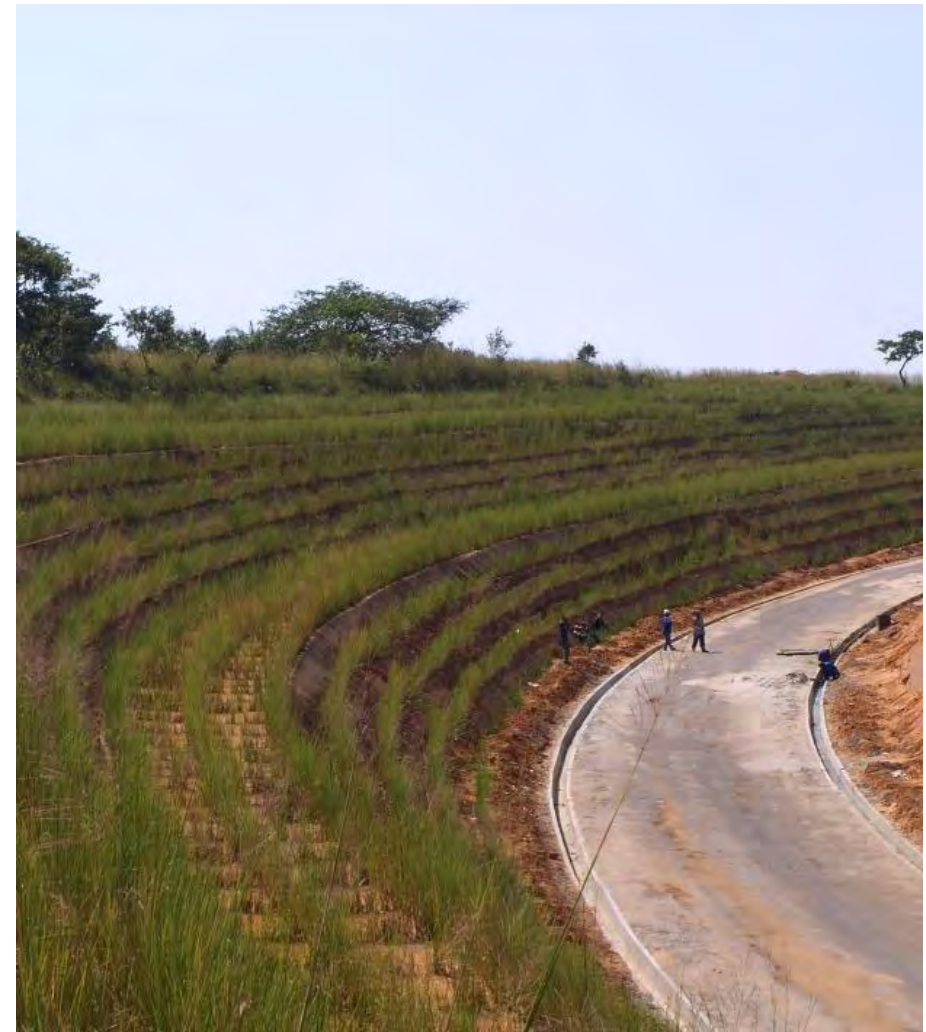
Country	Years	Project ID	Funded by	Partners	Slips used
DRC	2003-06	CLIFS	USAID	IRM/TVNI	300,000
	2007	RN 1	BCMI/GUAFF	SOGEA	1,000,000
	2004-08	Selembao	World Bank	BCM/Egis	500,000
	2014-present	Gire	UNEP	MEDD	30,000
Congo – Brazzaville	2008-10	Casis	GoCB	Egis	900,000
	2008-13	Boukeni	GoCB	Egis	450,000
	2009-13	Pylône	GoCB	Egis	400,000
	2009-13	Mimi	GoCB	Egis	600,000
	2011-present	RN 1	GoCB	Egis	30,000,000
	2014-present	RN 2	GoCB	Egis	150,000
	2014-present	Corniche Brazzaville	GoCB	SGI/DGGT	80,000
	2014-present	Off ramp Brazzaville	GoCB	Egis	40,000
	2014-present	Emeraude	GoCB	Egis	200,000

## 4.1. Some Congo-Kinshasa projects

**REHABILITATION OF THE NATIONAL Highway N° 1  
funded by the World Bank**

**One million vetiver slips were used**

# Congo-Kinshasa National Highway 1 Project funded by the World Bank



More than 1 million of vetiver slips were planted to prevent embankment erosion and stabilize this road's infrastructure at vulnerable locations.

# Congo-Kinshasa National Highway 1 Project



**Protection of road embankments at the Masamuna site, on the Kenge-Kikwit axis, Bandundu Province**



**6 months after vetiver planting, the embankments have been completely covered and stabilized by vetiver grass**

## 4.1. Some Congo-Kinshasa projects

**EROSION CONTROL PROJECT IN DREVE DE SELEMBAO SITE, KINSHASA  
funded by the World Bank**

**More than 500,000 vetiver slips were used**

*Photo 10. Drève de Selembao erosion control site before vetiver planting and hydroseeding*

*Photo 11. same site 2 years later, after vetiver planting and hydroseeding*



*Photo 12. Drève de Selembao erosion control site before vetiver planting and hydroseeding*

*Photo 13. same site, after vetiver planting and hydroseeding*



## 4.2. Some Congo-Brazzaville projects

### **EROSION CONTROL PROJECT AT BRAZZAVILLE URBAN SETTLEMENT funded by the Congo-Government**

The integration of Vetiver System as a bio-engineering technology into the conventional erosion control techniques has been a very successful new approach to halt the progression of erosion and to ensure protection and sustainability of conventional structures built there.

# Boukeni urban erosion project in Congo-Brazzaville, more than 450,000 vetiver slips were used

Conventional structural work and vetiver planting in progress, November 2012



Same site totally stabilized, May 2014



# Casie erosion project in Congo-Brazzaville where at least 900,000 vetiver slips were used

Conventional structural work and vetiver planting in progress, November 2009



It remains totally stabilized, May 2014

# Panoramic view of stabilized Casis site

November, 2009



May, 2011, 17 months later

## 4.2. Some Congo-Brazzaville projects

### **POINTE NOIRE TO BRAZZAVILLE HIGHWAY PROJECT funded by the Congo-Government**

This is the largest project using vetiver for embankment stabilization in any of the Central African countries, with more than 30 million vetiver slips being planted by the project than ends in 2016.



Eroded embankments that stall work progress

Highway embankments totally protected with vetiver, **NO** erosion recorded since the vetiver was planted



Highway embankments totally protected with vetiver,  
**NO** erosion recorded since the vetiver was planted



Highway embankments totally protected with vetiver,  
**NO** erosion recorded since the vetiver was planted





# CONCLUSION

This presentation has shown that the Vetiver system has been successfully implemented, and is expanding in Congo-Kinshasa, Congo-Brazzaville and Uganda Republics.

The transfer of this green technology has been implemented on 13 projects, with 28 partners involved and more than 34,540,000 vetiver slips planted from 2003 to 2014.

Policy makers, construction companies, local communities and vetiver experts play simultaneously very important roles in the success or failure of the adoption and expansion of vetiver technology into any country.