CURRENT INFRASTRUCTURE PROTECTION PROJECTS USING VETIVER SYSTEM IN VIETNAM

Man Tran* and Nguyễn Hữu Lân**

****Vietnam Vetiver Network Coordinator Da Nang, Vietnam***

man.tran@sbtv.com.vn

****SBTV Construction, *Da Nang, Vietnam***

INTRODUCTION

Vietnam, which is one of the countries most affected by climate change, has benefited greatly from the Vetiver System Technology. VST was introduced to the country in 1999 for infrastructure protection from massive erosion and natural disaster mitigation.

International and local vetiver experts have developed a very effective and sustainable technology adapted to local conditions when applying VST.

The followings slides will show the most recent applications of VST in protecting road batters and riverbanks.

But most interestingly, they also show hard conventional engineering structure by itself is not sufficient in protecting extreme slopes.

.

Landslides commonly occur on rural and major roads in the mountainous region, disrupting traffic

Coastal road at Son Tra near Da Nang

Normal solution is to build concrete retaining walls which are ineffective and costly

Following slope reparation, vetiver is planted on contour lines

Vetiver is planted on contour lines or random pattern, depending on topography

Vetiver is planted on contour lines on very steep and very hard surface

Vetiver is thriving 3 weeks after planting with adequate watering

A major Highway in Quang Nam Province, Central Vietnam

One month after planting with adequate watering

First cut after six months

LAGUNA RESORT

Originally concrete blocks with holes were used to stabilise this very steep and highly erodible batter

But concrete blocks by themselves could not protect slope in long term

The concrete cellular surface failed to protect the slope

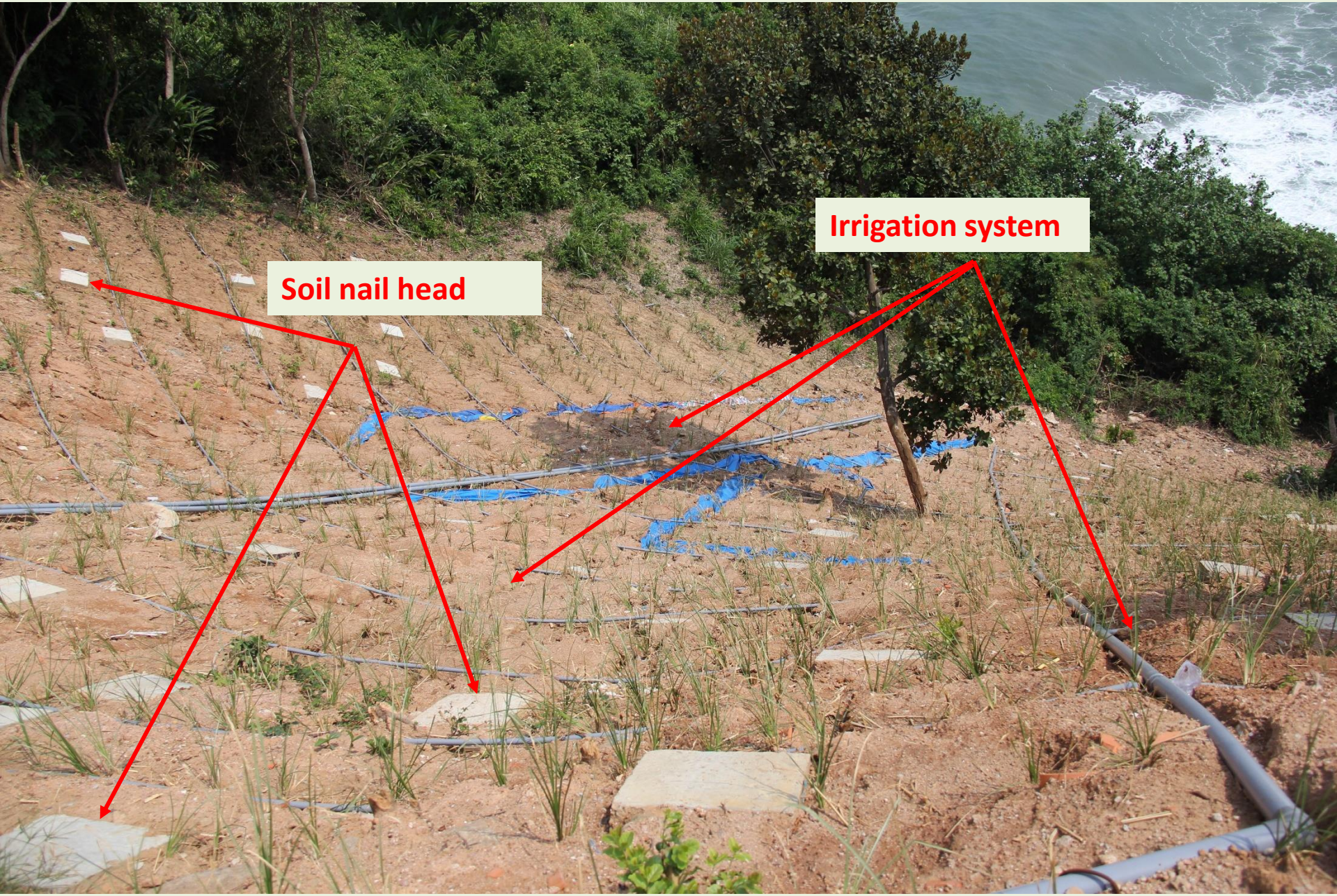
But the slope was fully protected when Vetiver was planting into the holes

Without Vetiver reinforcement, concrete blocks by themselves could not protect slope in long term

Newly planted of vetiver on the left

Vetiver in combination with concrete block fully stabilised this slope

SOIL NAILING : Vetiver with soil- nail in Laguna resort, Hue



Three weeks and six months after planting

River Bank Stabilisation, Quang Binh Vietnam

This is the bank of a coastal river mouth, subjected to full tidal fluctuation. Rock basket was used below high water level and Vetiver planted above to protect the bank from tidal surge during storms and typhoon season.

Vetiver planting above riprap on tidal brackish water

River bank stabilisation, Central Vietnam

THANK YOU

Two years after planting, note the return of endemic species