VETIVER SYSTEM FOR RIVER AND CANAL BANK STABILISATION

Paul Truong

TVNI Technical Director, Brisbane, Australia

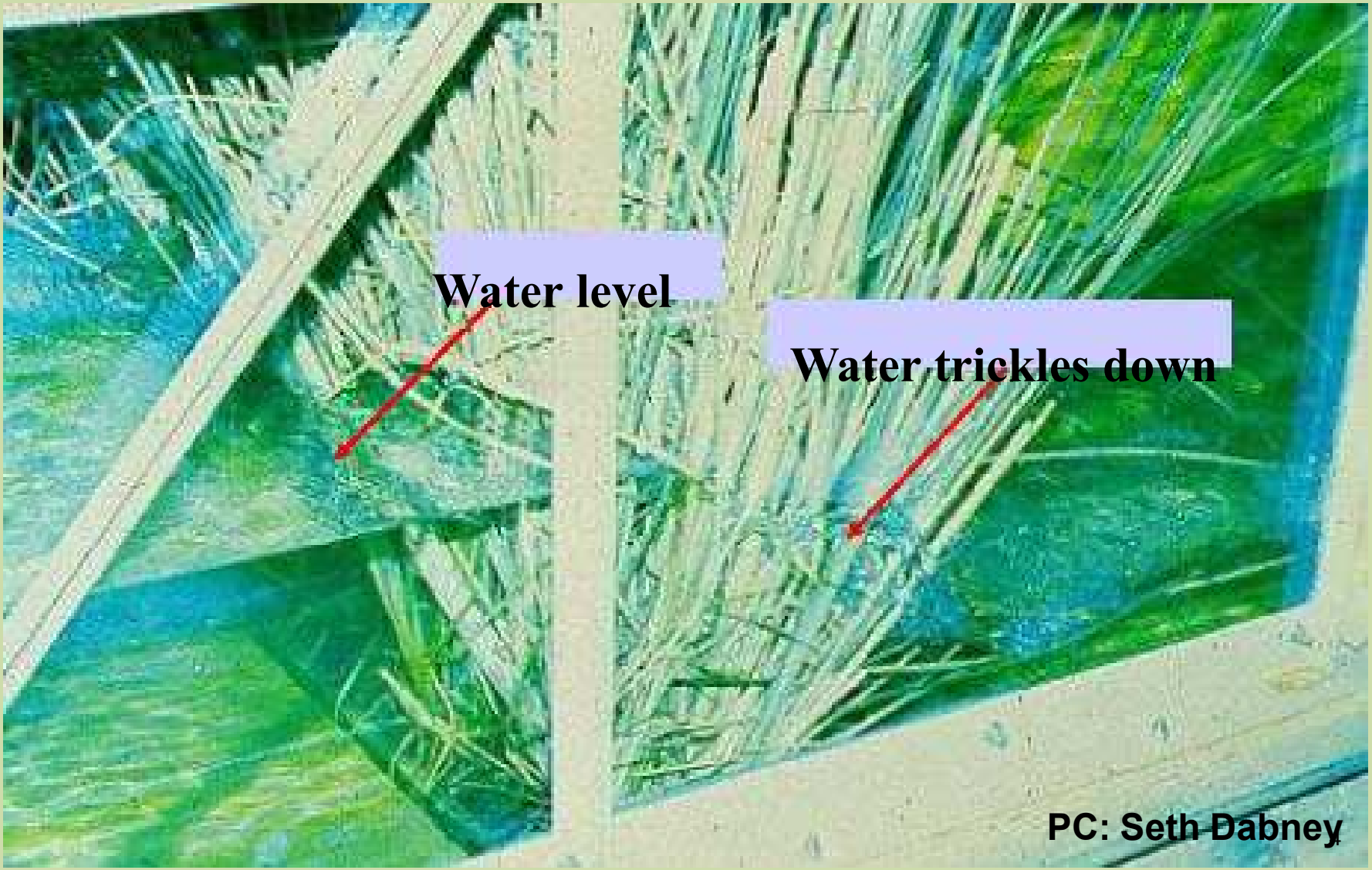
Principles of the Vetiver System for River Bank Stabilisation

In flood erosion control and riverbank stabilisation the VS uses the deep and high tensile root system to reinforce the bank slopes and its dense and stiff stems to spread and reduce flow velocity .

- To stabilise the bank steep gradients, horizontal rows planted on approximate contour lines
- To reduce flow velocity of the strong current therefore preventing scouring from the strong flow, planting of cross rows is needed.
- For maximum effect, the cross rows are orientated at right angle to the flow direction.
- *The spacing of both horizontal and cross rows varies with slope gradient and length, soil type, flow velocity and depth .*

Strong current flattened the native grass but not vetiver on this waterway

Indoor flume test



In flume test a mature hedge can bank up water to 600 mm depth

STREAMBANK STABILISATION IN AUSTRALIA

Severe erosion on the abutment of the Coolumboola Creek bridge near Miles

Vetiver planting following repair of bank.

Cross rows are most effective when planted right angle to flow direction

One month after planting

Six month after planting

There were several big flows during the first summer and no damages were noted. This abutment is now well protected by these mature vetiver.

18 months after planting

Five years after planting

Dam spillway protection

Six months after planting


25 5 2001


23 5 2001

Eight months after planting

Mekong Delta Vietnam: Protecting bank against wave erosion

Six months after planting

Assam, India : Doria Bridge approach, Note: grid pattern

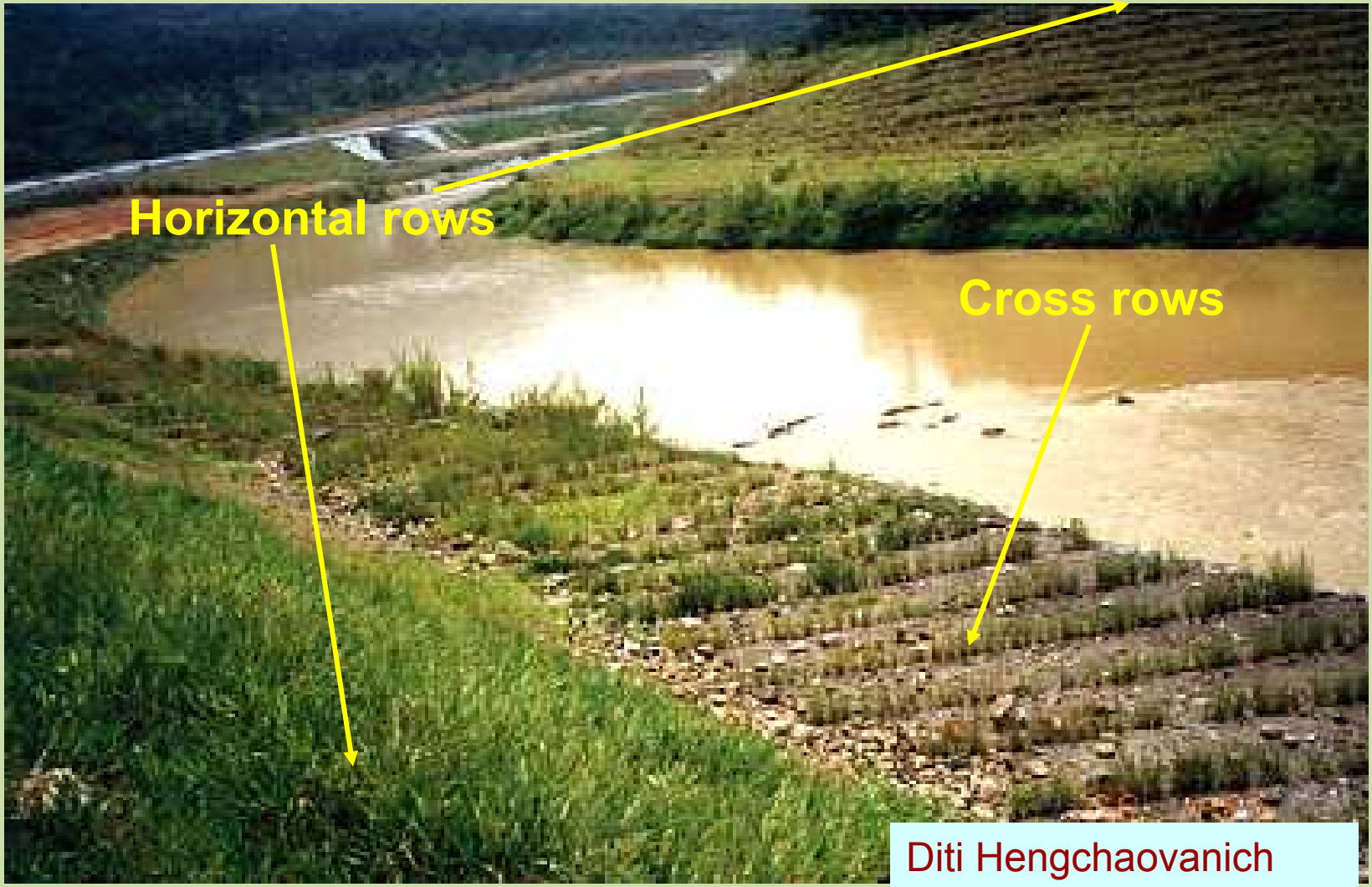
Two months after planting

Two years after planting

Australia - Badly eroded drainage channel on acidic sulfate

Australia - Four months after planting

Malaysia: An outstanding success, several floods did not damage this river



South Africa: A very well layout provided complete protection against erosion