

DO YOU KNOW PLANTS ARE ECOSYSTEM ENGINEERS FOR SLOPE TREATMENT?



MAINSTREAMING OF BIODIVERSITY CONSERVATION INTO RIVER MANAGEMENT

SOIL BIOENGINEERING FOR SLOPE AND RIVER BANK PROTECTION

Soil bioengineering” is a term coined to describe the application of vegetation, either parts or whole plants, specifically on low to moderate risk slopes for sustainability and stability of the slope (Coppin & Richards, 1990; Morgan & Rickson, 1992).

BENEFITS



Reliable nature-based solution yet very effective.



Vegetation self-regenerates and could adopt and adapt to its environment.



Low costs compared to civil engineering structures.



Introduce and enhance local biodiversity at the site.

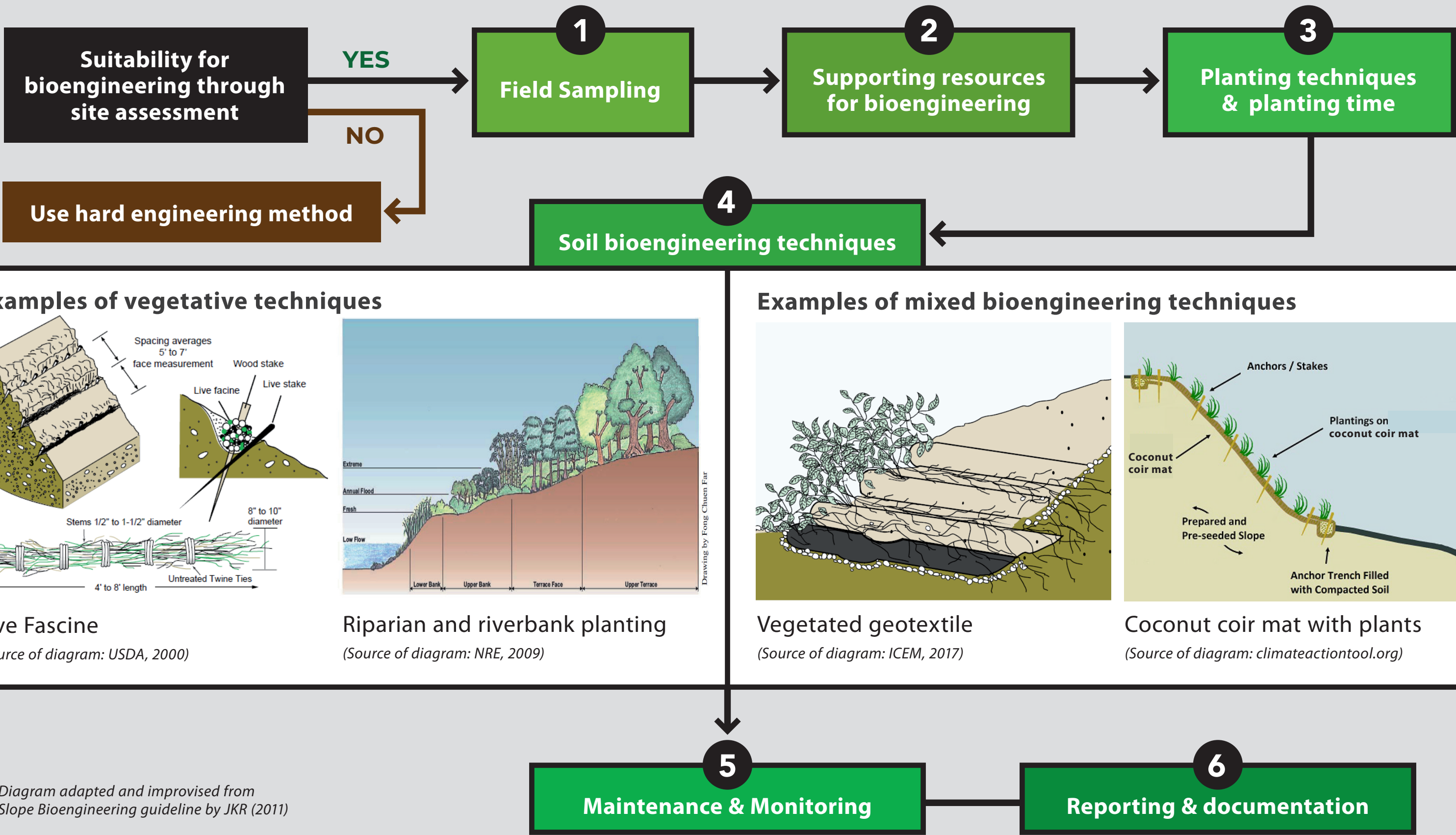


Provide alternative livelihood options for local communities.

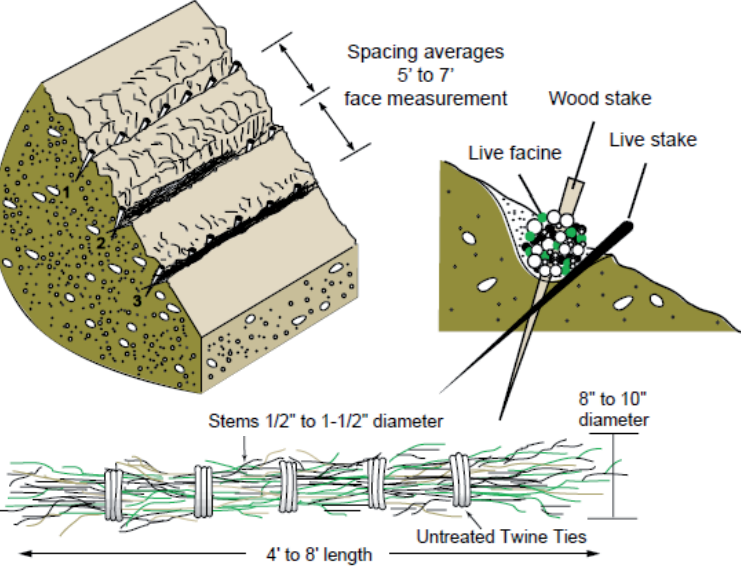


Low maintenance since the local community can be involved in the management and maintenance all the time.

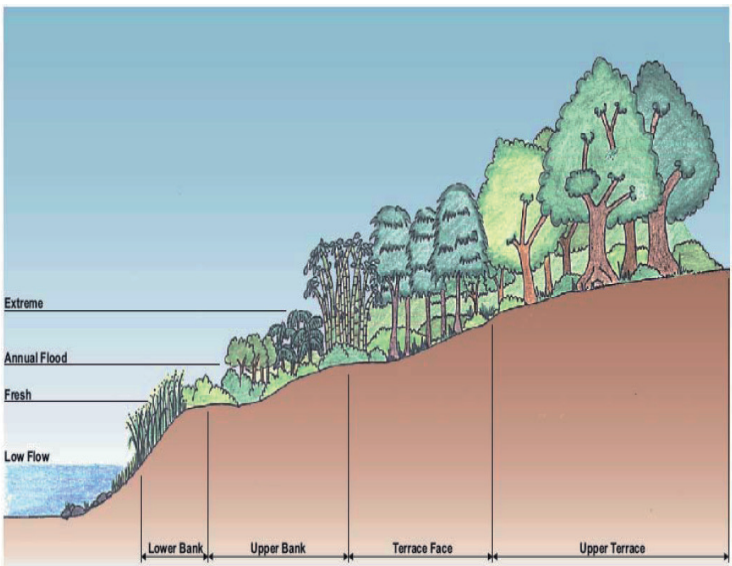
GENERAL PROCEDURES



Examples of vegetative techniques

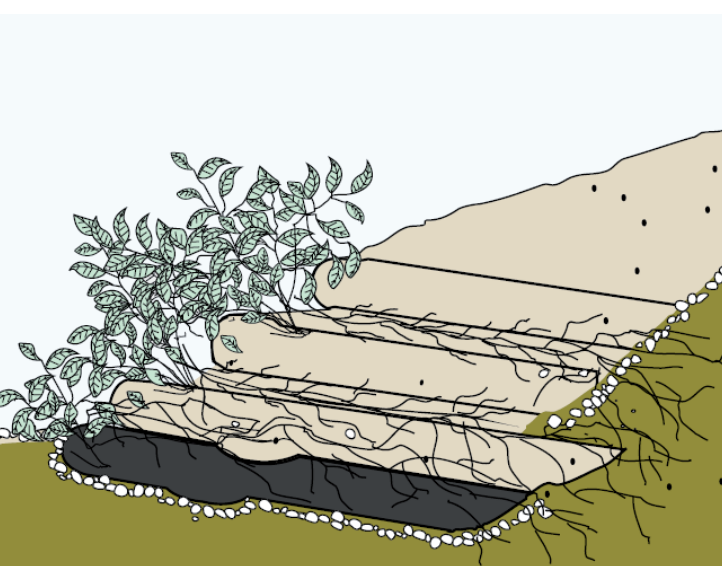


Live Fascine  
(Source of diagram: USDA, 2000)

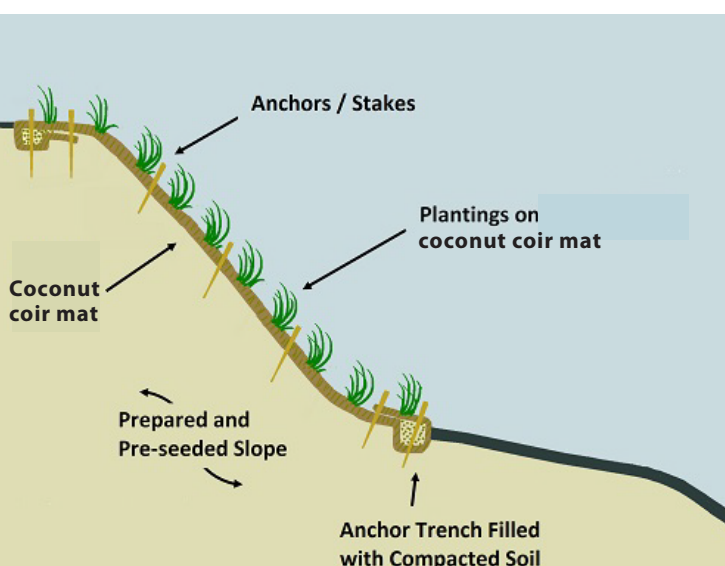


Riparian and riverbank planting  
(Source of diagram: NRE, 2009)

Examples of mixed bioengineering techniques



Vegetated geotextile  
(Source of diagram: ICEM, 2017)



Coconut coir mat with plants  
(Source of diagram: climateactiontool.org)

SUITABLE PLANTS: SLOPE BIOENGINEERING



Melastoma malabathricum



Dillenia suffruticosa



Gigantochloa levis (Bamboo)



Vetiver zizanioides



Scan QR code for the list of suitable plants.



Scan QR code to download this e-poster.

SUITABLE PLANTS: RIPARIAN & RIVERBANK



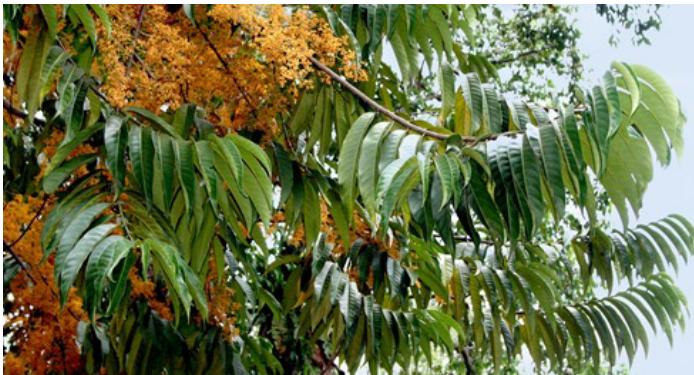
Bambusa vulgaris



Ficus racemosa



Sterculia parviflora



Horsfieldia irya