

VBA Tool- User Manual

This VBA Tool can be used to find the best suitable solution for bio engineering and to keep and maintain the records.

This VBA tool enables user to perform different tasks such as add new record, get the solution, print report and also delete a record.

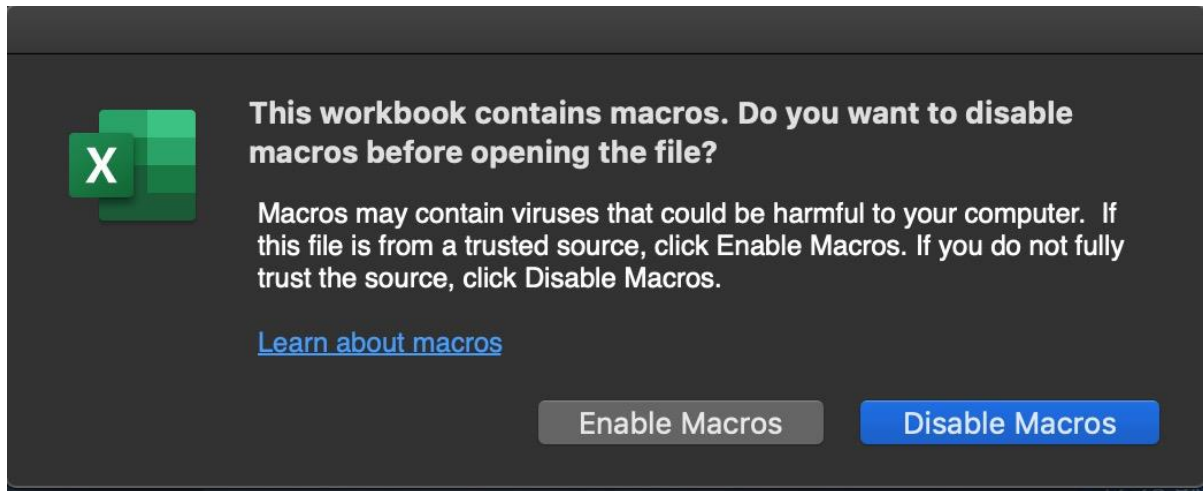
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Installation

This tool can be used by running the excel file. But however, to run the application for the first time macros might have to be enabled.

To enable macros click on "Enable Macros" button.



After Macros is enabled, VBA Tool splash screen is displayed as follows:



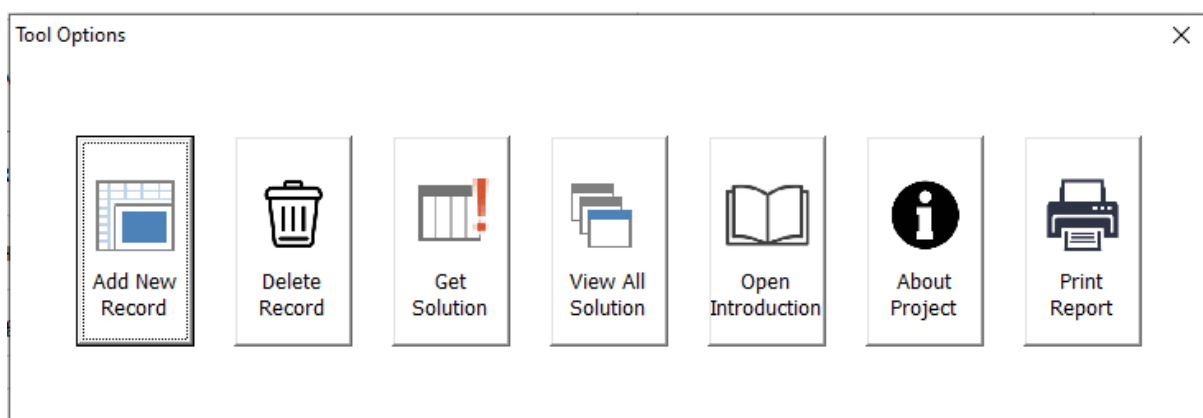
You can get the information from the introduction that gets displayed. You can click Next Button to go to next page of the introduction. Or else you can also skip by clicking on the Skip Button.



Tools

To perform any task firstly you should open 'Tool Options' where you can find different tools. To open the options use shortcut keys:

Ctrl + Shift + O




Add New Records

The Form is displayed from where you can enter information and submit to add new record.

Data Input Form ×

Information i

Visitor Information

Name of the visitor * **Date of the visit** 

Working Office * **Position ***

Location Information

Ward Number *

Municipality *


Province *

Latitude *

Longitude *

Elevation *

Landslide Information

Date of occurrence 

Location (Name of the Road & Connecting Village/Town)

Instructions

Welcome! Please fillup the form to add New Records.

You can press the 'See Records' button to go see previous records.

Source: Devkota et al, 2014
Howell,1999

Next

You should fill all the information with required symbol (ie. With an * mark) to be able to submit the form.

After you submit the form, you will get the suitable solution recommendation as shown in the following screenshot.

Bioengineering Solution

The suitable solution can be:

References: Devkota et al., 2014

Horizontal bolster cylinders and shrub / tree planting

Know More

Downslope grass lines and vegetated stone pitcheddrills

Know More

Site grass seeding, mulch and wide mesh jute netting

Know More

*Techniques in Bold type are preferred. **

Go Back

Shrub and Tree Planting | Contour/Horizontal Wire Bolster Cylinders

Contour/Horizontal Wire Bolster Cylinders:

(Source: Howell, 1999)

Functions:

Wire bolster cylinders (in cross-section, a gabion tube of 300 mm diameter filled with stone) are laid in shallow trenches across the slope. They prevent surface scour and gulying (by reinforcing and fulfilling an intermittent armouring function), and provide shallow support. Bolsters can be laid in two ways: (1) along the contour; or (2) in a herringbone pattern (←←←←←) to double as a surface drainage system.

Main Advantages:

Bolsters form the strongest and longest-lasting method of armouring a slope surface and preventing gully development.

Sites:

On most long, exposed slopes between 35° and 50° where there is a danger of scour or gulying on the surface. Contour bolsters are used on well drained materials; slanted (herringbone pattern) bolsters are used on poorly drained material where there is a risk of slumping.

Main Limitations:

Bolsters are relatively expensive in comparison with bio-engineering measures such as brush layers.

more

You can click 'Know More' Button to get the information such as function, advantages, sites and main limitations. You can also click 'More' Button to get the detailed information about the specific method.

You can click 'Go back' Button to display the following screenshot from where you can Print Records, See Records, and also add another new record.

Data Input Form

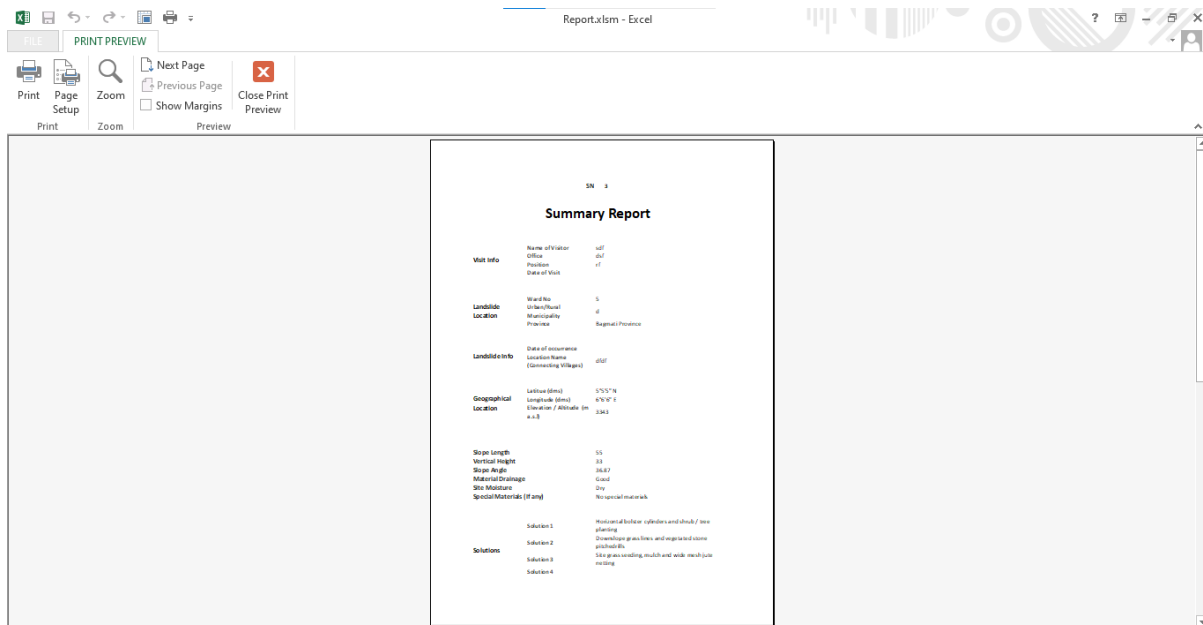
Info | Slope Length | Slope Angle | Material Drainage | Site Moisture | Altitude | Submit | Print

Print Record

Add New Record

See Records

The print allows you to print the summary report of any record. It is shown in the following screenshot.



Delete Record

To delete a record, you should enter the SN no of the record you want to delete.

The 'Delete Record' dialog box contains the following text and elements:

- Title: Delete Record
- Message: Please enter the SN to delete the entire row.
- Label: SN
- Input field: A text box for entering the SN.
- Button: Delete Record

Note: User can delete any record by using password only.

Get Solution

Get Solution allows you to know the solution without adding new record in the file.

Parameters like slope length, vertical height, slope angle, material drainage, site moisture has to be entered.

Information	Slope Length	Slope Angle	Material Drainage	Site Moisture	Altitude	Submit
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Notes:

' Any rocky material ' is defined as material into which rooted plants cannot be planted, but seeds can be inserted in holes made with a steel bar.

' Any loose sand ' is defined as any slope in a weak, unconsolidated sandy material. Such materials are normally river deposits of recent geological origin.

' Any ratomato ' is defined as a red soil with a high clay content. It is normally of clay loam texture, and formed from prolonged weathering.

Assessment Info

Do you have any other special conditions?
(If yes please choose the options given below.)

☒ No special condition

☐ Any Rocky Material

☐ Any Loose Sand

☐ Any Ratomato

☐ Gullies ($\leq 45^\circ$)

Source: Devkota et al., 2014
Howell,1999

Back

Submit

[View All Solutions](#)

View All Solution option allows you to see all the possible solutions in bioengineering.

All Solutions
Randomly Planted Grass
Shrub and Tree Planting
Shrub and Tree Seeding
Vegetated Stone Pitching
Jute Netting (Standard Mesh)
Jute

Jute Netting (Standard Mesh):

(Source: Howell, 1999)

Functions:

A locally made geotextile of woven jute netting is placed on the slope. Standard mesh jute netting (mesh size about 40 × 40 mm) has four main functions:

1. Protection of the surface, armouring against erosion and catching small debris;
2. Allowing seeds to hold and germinate;
3. Improvement of the microclimate on the slope surface by holding moisture and increasing infiltration;
4. As it decays, it acts as a mulch for the vegetation established.

Any use of jute netting is a temporary measure designed to enhance vegetation establishment. It does not protect a surface in itself for more than one or two seasons of monsoon rains.

Sites:

Standard netting is used on steep, hard slopes where the existing conditions are too harsh for vegetation to establish itself without assistance. Slope angles of 45 to 60° are normal. It is best on well-drained materials that are too hard for vegetation to grow in unaided, or on slopes exposed to hot sun and where extreme drought would otherwise be a problem. It should not be used on soft or poorly drained materials. It should never be used on materials with a high rate of shallow slumping. Drainage is

Schematic illustration of jute netting interspersed with deep-rooted vegetation.
Credit: S. Eberle (Devkota et al., 2014)

Main Advantages:

A very effective aid to the establishment of a permanent grass cover on hard, dry materials on steep cut slopes.

Main Limitations:

Since jute netting forms a mulch, it raises the moisture content of the soil; if the material has poor internal drainage, this can lead to liquefaction following intense rainfall.

Print Record

To print a record, you should enter the SN no of the record you want to print.

Print Report

Please enter the SN to print the report.

SN

Shortcut Keys

Keyboard shortcut keys can also be used are mentioned as below:

Ctrl + Shift + O => Option Tab

Ctrl + Shift + A => Add New Record

Ctrl + Shift + I => Open Introduction

Ctrl + Shift + S => View all Solutions

Ctrl + Shift + G => Get Solution

Ctrl + Shift + P => Print Report

Ctrl + Shift + D => Delete Record