Soil conservation using a magoye ripper

Recognize the problem
Frequent turning of top soil under conventional farming has made the soil loose and therefore prone to erosion by wind and water. Soil erosion washes away the nutrients from the organic manure and fertilizer in the soil. This causes a plough pan that hinders plant growth, and the loss of moisture that would have been used by the plant. The plants growing on fields that have eroded are yellow, have stunted growth and in severe cases can produce little or no yield at all.

Background
When using a tillage tool called magoye ripper (kapandula in Tonga language), you only open up planting furrows leaving the soil of the other part of the field undisturbed. This means the soil is not at risk of wind and water erosion, due to the cover provided by the layer of mulch of vegetation on undisturbed ground. This tillage system enables a farmer to plant early, before the onset of the rain, and has a good plant stand leading to better yield. These furrows improve water infiltration and harvest water that will be made available to the plant.

Management
• For correct ripping on an already marked field, a trek chain of 3.5 m, a pair of oxen, a ripper, a plough beam, a 180 cm yoke and 3 people are required to maintain 90 cm inter row spacing for example for maize.
• Chains with hooks make an easy attachment from the hitch point of the implement to the yoke. The oxen are yoked. Fit the magoye ripper on the plough beam and always use a hitch.
• Calibrate the ripper by making furrows outside the main field and achieving a depth of 15 cm.
• In the main field, a straight row is made by positioning the animals with the help of the person controlling them, while the other person handles the ripper
• Start ripping in May and June for winter ripping when the soil is not yet dry and hard
• Ripping is only done to open furrows where you are going to plant and apply fertilizers and manure
• It is very important to always work with a sharp tine. An unsharpened ripper cannot penetrate and break up dry soil.