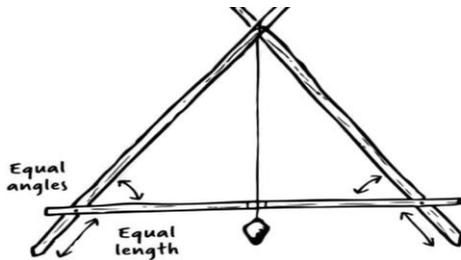


Contour Lines for Water Management



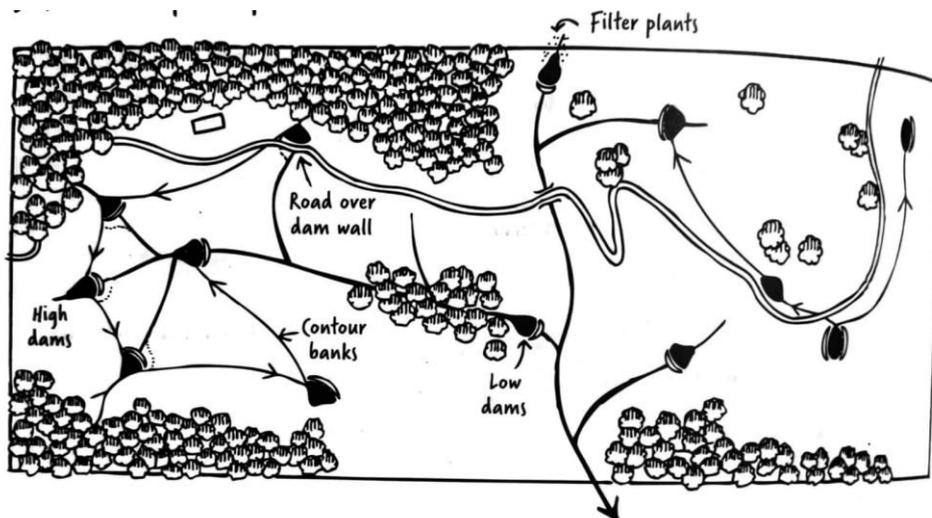
on a farm, mark the line with lime or flour and then dig your swale with machinery, or you can pay a surveyor to find your contours.



Figure 8.2: Making and using an A-frame.

Determining the contour lines that we need, at what distance and what tools and machinery we will use, are basic concepts if we want to fight against erosion and water runoff. Depending on the characteristics of the location, we have to assess whether we will have an excess or a lack as far as water resources are concerned.

In all cases, we are interested in having a certain control over the water paths and, whether we intend to evacuate it or if we intend to collect it in a tank, pond, filtration, etc. Choosing one or other solution, or a combination of many, will depend on several factors like the level of inclination, annual rainfall and ground cover capacity.



Infiltration trenches and swales

For example, in almost flat lands, it is generally enough with a few trenches or/and swales for total or partial infiltration to retain the temper of the soil at greater depth, and for a longer time.

KeyLine

If the inclination exceeds a certain slope and even if it does not cause runoff or soil washing, it is recomendable to implement some keylines, at least in certain areas. With them, we will follow the water, managing to stop it and make it flow more slowly, facilitating its infiltration and distribution. In addition to extra benefits such as, among other things, improving the establishment of meadows, fixing the land, increasing biodiversity, etc...

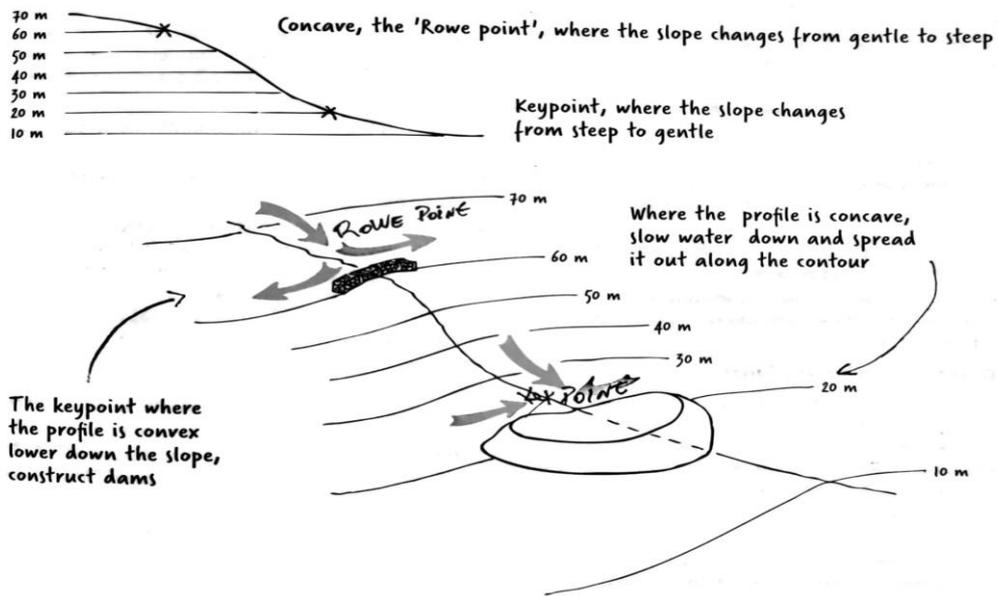


Figure 8.5: Concave and convex points along a stream profile.

Beds and Scales

In the most extreme places, it may be best to act a little more radically and, establishing the contour lines, determine at what distance we will make the terraces and if they will be continuous or in scales.

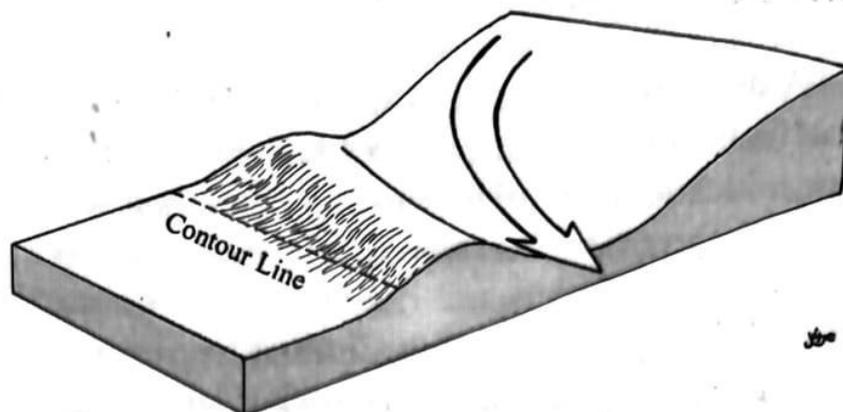


Fig. 3.19. Diversion swale

We will fix the future borders with stakes or other materials and throwing earth from the upper part until the predetermined width is flattened. Depending on the needs, we can include a channel or even a drainage pipe in the lower edge buried on a bed of gravel.

From there we can redirect the water and avoid accumulations and unnecessary pressure on the terrace. In the scale system, the widest point is usually allowed to coincide with the lowest level of the scale and one or several tubes with two different levels are inserted. to distribute the excess water to the lower scales, to a reservoir, pond or others.

If you want to know more about it:

<https://chnep.wateratlas.usf.edu/library/>

<https://www.clearwatervic.com.au/resource-library/>

<https://www.mapc.org/resource-library/>