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Recommended Ecological Perspective over Gliricidia Dilemma :

Its good to know the history of Gliricidia plantations... Gliricidia plantations were done few decades back to **GREEN** the barren hills. It seems that it was thought to be the only species which would arrest soil, fix nitrogen and ultimately afforestation may take place. Intention was good. And, yes, it has arrested soil, fixed nitrogen but it being **MONOCULTURE**, couldn't create 'forests'. **Diversity**, one of the main characteristics of forest, is lacking here. So this is major disadvantage that on 'forest' land, it is just standing like green desert, benefitting in just few aspects.

As the science and the perspective have progressed, we now find that there are **better alternatives** to do afforestation than doing monoculture. **Ecological Restoration** is the solution wherein land is completely protected from fire, grazing and cutting and **existing native diversity** of grasses and shrubs on barren land does help in restoring soil as well as moisture. Once that is restored, plantations can be done. This could be time taking process depending on the status of soil, but there are hardly any chances of failure.

There need not be any debate that native diverse forests are much better than monoculture of Gliricidia. Gliricidia is planted almost all over India. So, total number of acreage under Gliricidia must be huge. So it is worth experimenting on removal of Gliricidia on some smaller areas where afforestation efforts are intended. If results are better, why not to extrapolate it to larger areas for betterment of forests? It can be done phase wise.

Now when it comes to **removal** of mass plantations of non-natives, specially, Gliricidia, there are no established proven scientific methods ! Undoubtedly, it's risky to remove entire plantations as it might initiate soil erosion *if not stabilized* by some other means. So since many

years, people have been trying to remove it in patches and introduce natives voluntarily. But rootlets of Gliricidia germinate vigorously. So consistent effort needs to be made to remove such germinating rootlets and maintain native saplings, which becomes difficult whenever it's a voluntary activity. Forest department with their system and man power should be able to do it.

So, it seems radical that forest department should take such **EXPERIMENTAL PROJECT** in hand wherein they experiment in smaller patches, set the perfect standardized guidelines and then take up removal at large. Two such experiments are suggested here:

1. In first patch, cut all Gliricidia at ground level. Introduce native diversity. Keep on cutting the germinating rootlets. Watch the growth of native saplings. Protect. Maintain the state for two years at least. Observe and Learn and Proceed / Stop.
2. Remove Gliricidia completely from second patch, i.e. dig out all root wads. (Dispose it off prudently. Chop and spread it on barren areas so it will act as mulch and degrade). Immediately, have soil stabilization techniques like stone bunding, plantation of native grasses along with complete protection to this patch. Maintain the state for two years at least. Observe and Learn and Proceed / Stop.

It is suggested that this kind of activity should be done in May before Monsoon sets in. Detailed planning of the experiment should be done along with Experts, representatives of citizens, NGOs.

Not sure what decision will have to be taken after two years, but do we at least learn that henceforth monoculture needs to be banned on lands when we wish to do afforestation?

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