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# Planning Roadside Vegetation

## Key Points

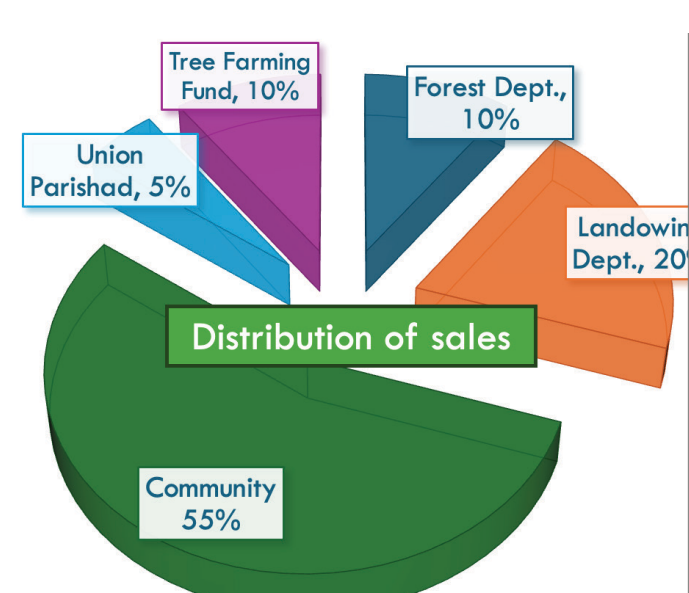
- 1 Plan roadside vegetation with the full scope of potential benefits in mind, to optimize them.
- 2 Address ownership and community management as a precondition, making use of the Social Forestry Rules.
- 3 Build in adequate time and community consultation to secure the roadside verges for common beneficial use.
- 4 Prevent and manage unplanned roadside plantation, which can have negative impacts including road safety, moisturizing, and shading of pavement.

## Specific guidance:

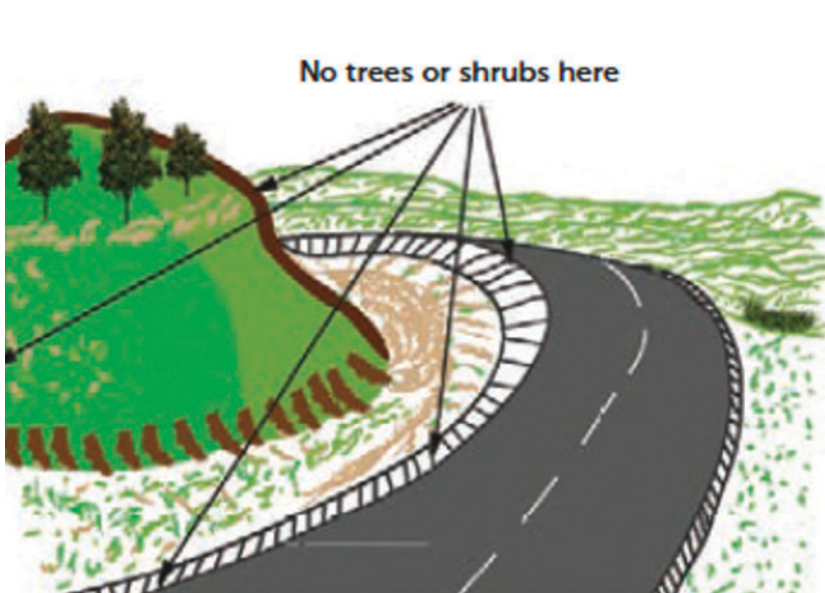
Benefits of roadside vegetation are multiple if done well:

Function	Application
Productive use	Define productive use (timber, fruits, medicine, fodder, fuelwood) against preferably extended lifespan to avoid regular replanting
Protection of road surface	Prefer deep-rooted over broad-rooted species that may interfere with the road surface Roadside vegetation – in directions of sunlight - slows down heat-related wear such as softening of asphalt and thermal cracking. The effect of shade may on the other hand prolong the drying of roads after rainfall.
Stabilizing road embankments	Combination of stable roadside grasses (vetiver and others) and tree species to minimize erosion of embankments Deep-rooted trees can stabilize the roadsides
Protecting submersible roads	Use appropriate species that reduce eroding effects on submersible roads and that are adjusted to flooding conditions
Improved micro-climate and reduce heat stress	Tree planting to reduce exposure to desiccation and heat extremes High foliage, broad-leaved trees with overlapping canopies to optimize shade effects Position vegetation so as to optimize shade on the road surface Create wind tunnel effects to allow breezes to cool road surface
Dust control	Tree planting in road sections that are perpendicular to the prevailing wind directions will serve as dust barriers and windbreaks, slowing down windspeed and the uplift of dust Double-layered permeable vegetation (especially on level roads) to optimize dust capture
Pollution control	Use of bio-accumulator species in pollution-sensitive areas to convert heavy metals (see also annex 1) Vegetation captures Nox, CO2 and other pollutants.
Sound proofing	Vegetation close to the road will reduce sound pollution Dense, layered planting, multirow vegetation is most effective Combine ground vegetation with shrubs and larger trees Evergreen is preferred
Promoting biodiversity	Create variety of habitats, integrate rocks, logs and mini wetlands in the roadside vegetation Connecting to landscape hedges to create biological corridors Selective mowing and removal of biomass to enhance plant species diversity Avoid mowing in flowering or breeding season, leave some strips totally unmowed
Carbon sequestration	Use native, fast-growing and long-lived tree species suited to local conditions. Use deep-rooted perennials, grasses, and legumes to increase soil carbon
Road safety	Roadside greenery in general improves driver alertness and tranquility – and encourages responsible traffic behaviour. Preference is for low growing shrubs and groundcovers near road edges and light-canopy trees set back from the road, allowing regular visual breaks Avoid tree planting in high-speed sections (>60 kilometres/hour). Support visibility (no tree planting in inner bends) Glaring can be avoided by planting dense evergreen trees in direction of rising or setting sun Irregular and varied spaced planting can avoid speeding behaviour
Beautification and comfort	Provide shade and space where there is much pedestrian movement Consider iconic trees for beautification and local identity
Avoiding interference	Do not grow high trees near electricity lines Avoid root penetration in culverts

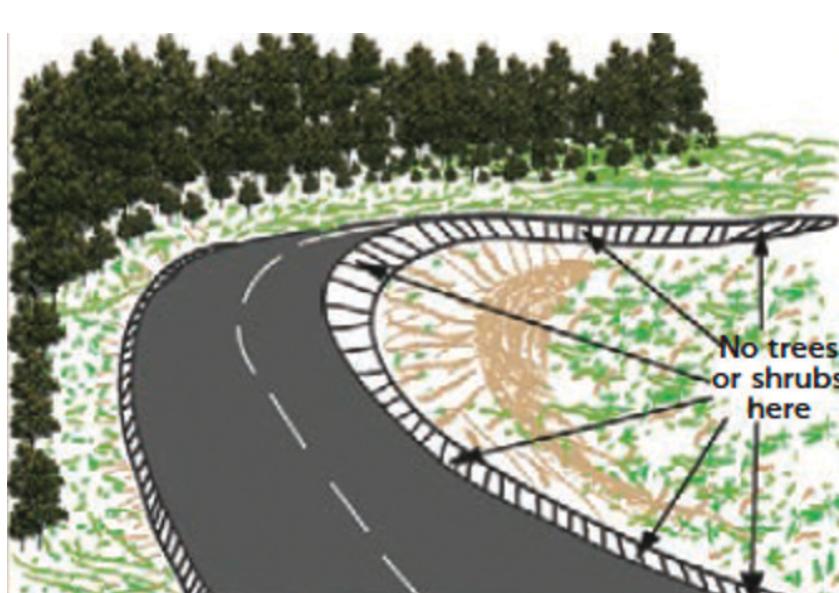
## Some good practices



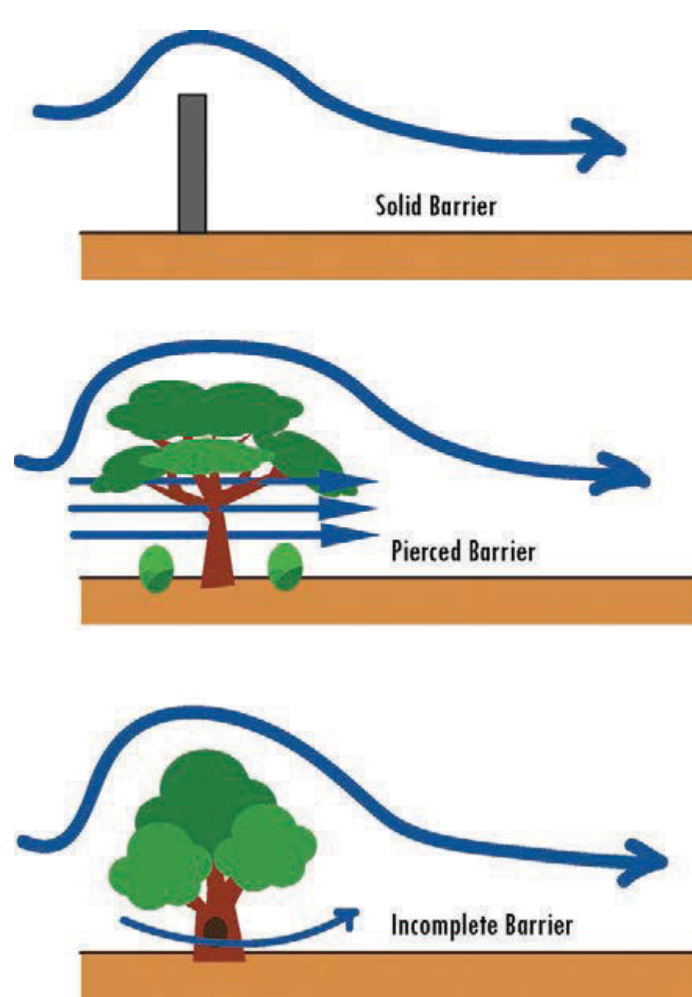
Distribution of proceeds according to Social Forestry Rules



Road safety – no trees or shrubs on the inside of cut slopes around curves



Road safety – no trees or shrubs on the inner bend of a road



Road vegetation and dust movement: pierced barriers trap most dust



Increasing Resilience of Rural Infrastructure and Local Communities through Green Roads Concept