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A wildlife garden or ecological landscaping concept is a new in the world of highly manicured gardens. If current trend of landscaping is observed, it refers to a man-made manicured space with huge lawns, large flowering beds, well shaped plant hedge and mounds. But this consumes a lot of resources like water, fertilizers & pesticides in maintenance and energy involved in pumping of water, cutting of lawns and man power. What this gives is an aesthetically pleasing, well designed, neat space that soothes eyes. But where is the place for our non-human friends ? A small puddle attracting butterflies or hiding place for a garden lizard, berries for birds are lost during the process of beautification. In tropical climate of India,

maintaining greenery in form of lawns is taxing on resources including money. When people have acute shortage of drinking water, these gardens consume good quality, treated water in large quantities. A garden can certainly be grown with treated wastewater.





## Landscaping

Exactly this is the starting point for concept of 'Ecological gardening'. It is not just making greenery on land but it is about creating "liveliness" on the land. All attention is given to local site conditions, use of resources, long-term sustainability, and local wildlife needs.

Ecological designing have following advantages,

- Less consumption of resources like soil, water.
- Less use of energy.
- Food for all from native species.
- Waste recycling & minimization.

Designing a garden or a space, which can be eco-friendly is a creative process, which can be achieved with certain principles. Following are the important aspects of ecological landscaping,

- Climatically appropriate design
  - Following natural landforms & contours
  - Zoning for Landscape
  - Material selection
  - Plant selection
  - Habitat creation
  - Waste minimization & recycling
  - Signage

**Climatically appropriate design:** The bio-climatic regime will have to be considered while zoning or designing particular features or plant selection. E.g. In tropical climate of central & southern India, keeping huge lawns will not be eco-friendly. We have seasonal rains so there is no permanent natural green and keeping lawns lush will need a lot of energy & water. So lawns should be restricted only to formal landscape & for design enhancement. Rammed earth, which will have seasonal surprises of flowering herbs can be a good option.

**Follow natural landforms & contours:** Reshaping whole area into new terraces, mounds, ditches is expensive on resources & money. Also, it destroys natural diversity, starts erosion, which have irreversible impacts on ecosystems as a whole. Natural landforms should be kept as they are and enhanced for better functions.

**Zoning for Landscape:** Overall landscape design should be divided as,



- ❖ Formal
- ❖ Informal
- ❖ Natural

This will easily cater to different needs of aesthetics, non-human beings, kitchen garden requirements. Formal area will be used mainly by humans & will have few lawn patches, pavements, pathways, gazebos etc. The natural area will be away from human movement, will allow silence for wildlife like butterflies, birds, with a lot of wilderness. These two zones can be joined with an informal zone which will act as a buffer.

**Material selection:** Keeping minimum area as hardscape will first of all reduce material requirement of landscape apart from allowing maximum ground water percolation. Materials like stones, tiles, blocks,



cement, sand, bricks are generally used for hardscape. Instead of imported materials, locally available stones, soil, murrum are best and must be considered in design. So, the aesthetic





needs to be managed as per the availability of various materials. Bringing in Nevasa stone or laterite from kokan or Jaisalmer stone for 'looks' can't fit in eco-landscaping concepts because, first it involves heavy transportation cost, for fuel, energy, manpower and secondly the source area is hampered due to quarrying, excavation activities. So the key is hunt for 'Local materials' on the land itself. Along with local stuff, renewable materials like bamboo, a fast growing, structurally sound material with lots of aesthetic value is highly recommended.

**Plant selection:** Landscaping cannot be complete without plants, they add colour, fragrance, beauty, life to the land. In an ecosystem, plants form a base as a producer. No one but plants are capable of producing food & releasing oxygen using sun energy & CO<sub>2</sub>. They play a major role in making the land 'productive' for humans and non-humans.

Wise use of plant species will add a living component fauna to the landscape. Plants provide nectar, leaves, flowers, fruits, wood as food; nesting, roosting, shelter places for fauna. So, it is very important which species are selected.

Using native species is always recommended for any plant related activity. They are climatically appropriate, hardy species, adopted for ups and downs of seasons. They not only provide food but need less water, fertilizers so decrease maintenance. So, maximum native species should be selected in landscape. Here we need to design landscape as per plant habits. Shaping, pruning plants as per design can be avoided if

plants' natural habit, flowering is highlighted through design.

Now coming to year round flowering beds, colourful flowering areas, our native candidates are not suited for this demand. So for the formal zone, some *non-native species with following criteria* can be selected,

- Species must not germinate & spread by seeds, via dispersal agents like wind, water or fauna.

- They should necessarily be grown by cuttings.

**Habitat creation:** Creating habitats for smaller or minute fauna which is normally neglected or eradicated in usual landscaping techniques. This is done according to actual site conditions. While doing this, use of indigenous plant material, rocks, logs, even bird boxes, bird feeders etc. is advisable.

**Waste minimization & recycling:** Leaf litter, cut branches, which is commonly termed as garden waste is either thrown or burned. But it is a valuable resource if used as nutrient input, mulches in the garden. Even a compost pit attracts insect eating birds like Magpie robin or Fantail flycatcher to the garden. So it is must in every garden design. Along with garden waste it can readily accept the kitchen waste providing rich manure for plants.

Landscape design also can accommodate a nicely designed treatment plant for kitchen waste water. It can be treated locally through basic vegetated filter & treated water can be given to a part of garden saving on drinking quality water.

**Execution:** Apart from the planning process, its execution &





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operational phases are also important which needs to be planned, incorporated in design and monitored carefully. Using site soil with addition of organic matter & nutrients is most eco-friendly way of garden development. Brining in loads of soil from outside has proven disastrous to source area. An inch of soil takes more than 500 years to form so this resource should be carefully planned & used.

**Signage:** Sign boards giving instructions, tree plates giving information about plant, its name, botanical name along with some interesting facts or medicinal use can also be a unique feature in public gardens. If a pond is one of the features in landscape, the importance of pond ecosystem or its fauna can be displayed in the signage just next to it. Education with recreation!

To summerise, minimum important principles of landscape could as per following,

- Plant hedge
- Organic shapes
- Less hardscape
- Less lawns
- Compost pit & waste water recycling
- Use of native plants.
- Maximum area under perennial green cover

Having a green patch with lot of lawns & inputs chemical fertilizers & pesticides everywhere is not at all environment friendly. With our growing urbanization & garden development it is very much necessary have this eco-perspective. We must keep spaces for humans & non-humans. Our gardens can grow to be a refuge for plants & animals.