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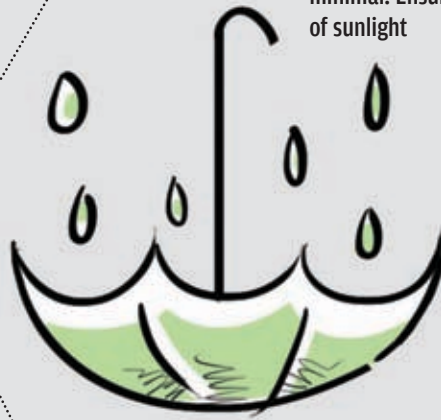
Observe and interact

After choosing the piece of land, decide what can be grown. Grow only those crops which are abundant in the area. Nothing on the land should be replaced. Increase biodiversity by introducing a variety of trees

2

Catch and store

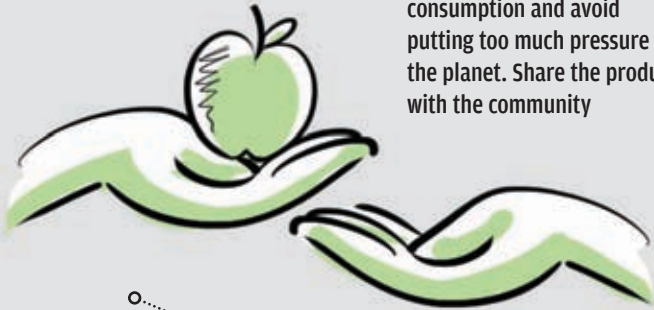
Water harvesting structures on the farm ensures that water usage from external sources is minimal. Ensure maximum use of sunlight



3

Obtain a yield

Grow only that much food which is needed for consumption and avoid putting too much pressure on the planet. Share the produce with the community



4

Apply self-regulation and accept feedback

Grow only those plants that are suitable for the area. Use tough and wild plants

5

Use and value renewable resources and services

Focus on perennials plants. They take care of themselves and do not require much labour for tending. At Aranya, 75 per cent of the plants are perennials and only 25 per cent are annuals



6

Produce no waste

Permaculturists address issues like managing grey water by developing wild areas and grazing lands in farms, composting and preserving seeds. Use plant litter to improve the soil health



Create a permaculture farm

Turning a barren piece of land into something green and fruitful is a challenging task. In the 1970s, Australian environmental designer and co-founder of the permaculture concept, David Holmgren, laid down 12 principles to carry out permaculture.

Down To Earth talks to farmers as to how they follow these principles

7 Design from patterns to details

Do not grow tall trees on the eastern side to make the most of the morning sun. Plant rows of trees at places where windbreaks are needed

8 Integrate rather than segregate

Keep livestock on the farm to provide manure

9 Use small and slow solutions

Grow leguminous plants to increase soil fertility. The cattle and poultry also adds to the fertility. Even the weeds are important as they can be mulched to improve the soil health

10 Use and value diversity

Create as much diversity as possible. For example, a farm in Goa has 180 plants, a poultry pen with 10 birds including chicken like *kadaknath*, ducks and geese in just 18 sq metres



11 Use edges and value the marginal

Use options such as *bund* on which crops can grow. The *bund* can also act as a windbreak

12 Be creative and respond to change

Plan your crops according to available resources. Grow plants suitable to the area and climate