

# Social forestry: gateway to growth

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THE breaking of new lands for cultivation has reduced the vegetative cover on earth to a great extent. The situation has further aggravated because of the erratic behaviour of rivers and streams resulting in reduced inundation.

Ecologists predict that unless and until the process of loss of plant cover is reversed in arid and semi-arid lands, the land can enter "energy cycles of nothingness".

Pakistan has only 4 per cent of the total land mass under trees, while normally a country should have at least 20 per cent area under trees to conserve the soil and to meet the multifarious needs of industries like sports, paper and pulp, furniture making, pit props for mining, babul bark for tanneries and timber for construction of houses. Trees not only increase precipitation in an area, but also regulate water supply and add to the richness of landscape and afford protection and shelter to birds and wildlife which are an important part of the human environment.

Situation in Sindh is particularly alarming. Major forest areas in the province are "riverain forests" which depend for their fertility and flora on inundation of the river Indus. The cycle of inundation, therefore, forms the sole contributory factor to improve and increase the stocking of the forest. Due to the construction of a series of barrages in the upper reaches since 1932, the intensity of floods has been adversely affected and the ecology of these areas has considerably changed. Before 1932, all the areas used to receive spill water, but now the spill has decreased. Experience has shown that 30 per cent of the crop of riverain forests get inundated with a discharge of 0.5 million cusecs, 60

per cent with a discharge of 0.65 million cusecs, and 95 per cent and above with a discharge of 0.8 million cusecs. Owing to reduced and uncertain inundation, these forests are now dwindling.

As for irrigated plantations, situated outside river protection embankments, they receive water supply from the canal irrigation system. While planning for the construction of barrages at Sukkur, Kotri, and Guddu, it was envisaged that 0.18 million acres of these inland areas would be brought under irrigated plantations. Further colonisation and bringing more land under plough resulted in more water supplies being drawn for that purpose and therefore the original plan could not materialise. Due to scarcity of canal water the irrigated plantations are also degenerating into scrub-forests.

The twin menace of waterlogging and salinity has already devoured a large proportion of fertile areas, particularly in Kotri barrage zone and is spreading fast to other irrigated plantation areas due to lack of drainage. As per a 1994 report of general manager (south), Wapda, waterlogging had affected 1.27 million acres in Sindh. A 1992 report of the SCARP monitoring cell said that countrywide 7.53 million acres were under waterlogging.

Social forestry: In these circumstances, there is no other way to make Pakistan greener than to switch over to the system of social forestry which means trees of the people, by the people, and for the people, on the private lands in the form of wind-breaks, shelter belts, block-plantations of babul locally called "hurri" as well as raising of trees along water courses, peripheries of fields, etc.

This will help in checking wind-caused erosion, increasing crop production and yielding handsome income to the farmer. The forest-produced fuel wood will also reduce the use of cow-dung for energy purposes. The cow-dung so saved would be

used as an organic manure for improving the physical and chemical texture of the soil and increasing crop yields. It is, therefore, worthwhile to grow shelter belts on the private agricultural lands to increase the number of trees which add beauty to the land, natural fertiliser to the degraded soil and protect agricultural crops from cold or desiccating winds.

Though the provincial forest departments have been working on social forestry for the last 30 years or so it is not yet much popular. Unfortunately, majority of the rural population has some wrong notions about raising of trees on farmlands which need to be corrected by education, motivation and persuasion.

Competition for water/nutrients/sunlight: Rainfall in most of the areas of our country is scanty, erratic and seldom sure. Trees need water to grow which the land-owners will have to spare. Once established the trees are in a position to tap the deeper source of underground water due to their deep root system. If the trees are planted in rows, they can be separated from the agricultural field by digging a two-feet deep trench in between so that the roots of the trees are not in a position to usurp water at least from upper layers of the soil. There are a large number of xero-phytic species requiring comparatively less water. Trees of this kind like *tacoma undulata*, *jungle-jilebi*, *kandi*, *beri* and *babul* can be planted.

Some farmers say that the agricultural crops come in stiff root competition from the trees which take away most of the fertiliser added to the field for the benefit of the crops. This is not true. Actually, root zone of the trees is much deeper than the root zone of most of the agricultural crops and therefore trees can not be blamed for such damage. Moreover, in this case too the method of digging a trench to separate the row of trees from the field can be adopted.

Apart from this, there is a

notion that under the shade of trees and due to lack of sunlight, the yield of the crops is reduced. The fact is that most of the trees in our plains are deciduous by nature and they shed their leaves in winter which is the main period of the year when some sort of light competition can have some adverse effect. In summer, the sun is very bright and shade will not cause a serious decrease in the yield. Moreover, there are trees which do not form a big crown e.g. *eucalyptus*, *conocarpus*, *saru*, *Kabli babul*, etc. Trees with big crowns may be lopped or pruned to permissible limits for getting a reasonable amount of light, without of course damaging the trees themselves.

There is also another issue which has prevented further propagation/development of social forestry. It is that trees carry some insects and fungal diseases. It is, therefore, feared that the pathogens out of delicacy and quest for variety might shift their activity to the agricultural crops resulting in total ruination. Well, these apprehensions are not entirely unfounded. However, a few timely sprays of insecticides and pesticides always help.

Apart from this, some of the land-owners hesitate to plant trees in their field, owing to the impression that the birds of different kinds make their nests in the branches and boles of these trees and eat the grain. People in China once presumed that sparrows living on the trees of their farmlands were destroying their yield. Hence, they started killing sparrows on a war footing. Next year when the yield obtained was weighed, it was found less in quantity than it was when sparrow were there. Research proved that these sparrows actually were eating the harmful insects of the agricultural crop. However, if there is any small loss of yield, it can be compensated with the income obtained from the sale of trees.

The farmers must know that there are innumerable advan-

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tages of growing trees on the farmland. Unfortunately, majority of the farming community is illiterate and ignorant of these advantages. The farmer is so grossly entangled in his low yield and financial worries that he seldom gets enough time to think of other avenues of prosperity. Even a small amount of work regarding tree plantation on farms can prove to be a boon to meet some of his basic needs like renovation of house, repair of implements, purchase of insecticides, fertiliser, fuel, etc. Fodder trees can feed his cattle in times of fodder scarcity and trees in the form of shelter belts will save his crop from wind damage.

The hot and dry winds which lash the agricultural fields cause sudden increase in evaporation beside causing physical damage to the young and tender plants. Similarly, cold winds and frosty nights cause a lot of damage. Normally, the income realized from a small farm is not sufficient to meet the requirements of a farmer's family. Tree plantation can solve some of his problems. In Italy, it is a regular practice in village communities to plant 100 pollard trees when a daughter is born in a family.

These trees are converted in cash at the time of the marriage of their daughters. In a country like Pakistan, where custom of dowry still exists, it is even more important to establish such a useful tradition. Social forestry is, therefore, not only the gateway of greenery but gateway of property also. It is, therefore, imperative for the provincial forest departments that they take up the task of educating and motivating the farmers in this regard with close collaboration of effective NGOs. To plant a tree is easy but to plant an idea of tree plantation on the mind of an illiterate farmer is very difficult. Once the man working in the field is convinced of the importance of tree plantation, our problem of making the country greener and more prosperous would be greatly solved.