

CONTRIBUTION OF POPLARS AND WILLOWS TO SUSTAINABLE FORESTRY AND RURAL DEVELOPMENT IN INDIA

R.P.S Katwal¹

In India, the term 'poplar' is used synonymously with *Populus deltoides*, an exotic species introduced from North America during the early 1950s. This species has ushered in a revolution in production forestry in the country and contributes substantially to rural economy and sustainable forestry. It is grown as an agroforestry crop in fertile irrigated agricultural lands in the plains of north-west India. Poplar trees are planted in various spatial arrangements with agricultural crops and they add up to about 60,000 ha equivalent of pure plantations of this species. Although loss in crop yield is noticed close to the trees, yet the overall productivity in the entire fields is increased. Poplar grows fast, attaining about 25 m height and 30 cm dbh in 6 to 8 years. The average m.a.i. of poplar plantations is 20 to 25 m³/ha/year.

Poplar is the major species behind the development of a vibrant plywood industry in north-west India. It is also used to a significant extent in the match industry. The waste wood is used for making paper or as fuel. Every year poplar in non-forest areas produces 1.20 million m³ of wood for making plywood. It is thus saving 43,000 ha natural forests or 13,500 ha forest plantations from felling every year to produce the same quantity of wood. Farmers are earning handsome profits from nursery as well as plantation activities. Profits to the tune of 38.8 per cent to 100.9 per cent of investments after one year, depending upon scale of operation, are reported from producing nursery stock. In plantations, benefit : cost ratios of 1.92:1 and 2.13:1 are reported with pure poplar and with poplar plus intercropping over a period of 7 years.

However, the price of poplar wood has come down alarmingly in the local market during the past two years. The reasons for this are not clear but it has presently brought much of the planting activity of poplar to a standstill.

Six species of indigenous poplars also occur in the Indian Himalayas. They grow relatively slow and are not extensively planted. *P. ciliata* is an exception. The populations of *P. alba* and *P. euphratica* are very small and need to be conserved. There is scope for promoting indigenous poplars in afforestation programmes.

India is home to 27 species of *Salix*, but this genus occupies a very small area in the natural forests and plantations in India. The plantations mainly consist of exotic species viz. *S. alba* ssp. *coerulea* and *S. alba* ssp. *alba*: these species yield wood for making cricket bats. Among the indigenous species, *S. tetrasperma* is planted to a noticeable extent. Willows provide fodder and fuel, and their twigs, branches and stems are used for domestic purposes and cottage industries. *Salix* is also important for effecting soil conservation. There is a need for promoting conservation and planting of willows in India.

Keywords: agroforestry, productivity, plywood, *P. deltoides*, *P. ciliata*, *P. alba*, *P. euphratica*, *S. alba*, *S. tetrasperma*, conservation

¹ Director General, ICFRE, (address and e-mail).