POPLAR PLANTATION - A BOON TO RURAL LIVELIHOODS IN NORTH INDIA

S. K. Sharma

Department of Geography and Environmental Science
Carman Residential and Day School, Dehradun, India
sks105@rediffmail.com
OBJECTIVE

THIS STUDY AIMS AT EVALUATING THE PERFORMANCE OF *POPLAR-BASED AGROFORESTRY* IN TERMS OF INCOME AND EMPLOYMENT FROM THE FARMERS' PERSPECTIVE AS AGRICULTURE IS THE MAJOR SOURCE OF LIVELIHOOD IN RURAL INDIA.
POPLARS IN INDA (indigenous and exotic species)

AMONG INDIGENOUS SPECIES, *POPLAR ciliata* AND CERTAIN CLONES OF EXOTIC POPLAR *POPULUS deltoides* HAVE BEEN FOUND TO BE EXTREMELY FAST GROWING AND WELL ADAPTED FOR AGROFORESTRY PLANTATIONS UNDER IRRIGATED CONDITIONS OF......
FOUR STATES OF PUNJAB, HARYANA, UTTARAKHAND AND UTTAR PRADESH FORMING THE SOUTHERN LIMITS OF INDIGENOUS AND EXOTIC POPLARS IN INDIA. The species has performed very well in India above latitude 28 degrees North.
INDIGENOUS SPECIES, ESPECIALLY THE POPLAR *ciliata* HAVE BEEN PLANTED:

* BETWEEN 1300-3000M ALTITUDE
* AROUND ORCHARDS AS WIND BREAK IN THE IRRIGATED AGRICULTURAL FIELD
* WITH AGRICULTURAL CROPS, RATHER THAN SOLO PLANTATION
* ROTATION PERIOD OF 6-8 YEARS
* AS A PART OF AGROFORESTRY PLANTATIONS IN NORTH INDIA
POPULUS deltoides : though exotic - yet most important species in India

- P. deltoides, constitutes the backbone of agroforestry in irrigated plains of Northern India (Punjab, Haryana and Western Uttar Pradesh, Uttarakhand, Himachal Pradesh and Jammu & Kashmir).

- Trees standing : >30 million

- Average planting/replanting rate:

- 5.5 million plants/year i.e. 11,000 ha/year (requirement surpassed 12 million in 2008)

- It has been estimated that 60,000 hectares equivalent plantations of poplar exists in India.
CULTIVATION - *inter cropping*

CULTIVATION OF *SUGAR CANE* IS PREFERRED ALONG WITH THE POPLAR DURING THE FIRST 2 YEARS. AFTER TWO YEARS *WHEAT, MAIZE, GINGER AND TURMERIC* IS CULTIVATED IN THE SHADE OF POPLAR TREES.

POPLAR GROWING ORCHIDS HAS GAINED POPULARITY IN RECENT YEARS.
ENVIRONMENTAL, ECONOMIC AND AESTHETIC POINTS OF VIEW OF POPLARS.....

POPLAR PLANTATION HELPS IN THE ESTABLISHMENT OF VEGETATION FILTERS, IN WHICH NITROGEN AND PHOSPHORUS IN WASTE WATER AND SEWAGE ARE USED FOR IRRIGATION AND FERTILIZATION IN SHORT-ROTATION FORESTRY.

IT IS OF PARTICULAR INTEREST TO INDIA WHERE TECHNICALLY ADVANCED PURIFICATION PLANTS ARE TOO EXPENSIVE.

TO ESTABLISH. VEGETATION FILTERS ALSO HELP PROHIBIT EUTROPHICATION (NUTRIENT POLLUTION) OF NEARBY STREAMS AND LAKES.
ENVIRONMENTAL, ECONOMIC AND AESTHETIC POINTS OF VIEW OF POPLARS

IN ADDITION TO ITS ECONOMIC VALUE:

THEY ARE ALSO PLANTED TO PURIFY WATER (GREEN FILTERS), TO RESTORE ERODED GROUND ON OR NEARBY RIVERBANKS.

TO PROTECT CROPS AGAINST FLOODS AND WIND, TO RESTORE GRAVEL BEDS AND POLLUTED SOILS (PHYTOREMEDIATION).

TO PRODUCE BIOMASS FOR GENERATING GREEN ENERGY OR BIO-ENERGY, TO PROVIDE SHADE AND TO MAKE THE LANDSCAPE MORE ATTRACTIVE.
POPULUS *deltoides*

maize and wheat agroforestry

turmeric agroforestry
Unloading poplar logs at Haryana's Manakpur timber market, which is the biggest poplar market in Asia
FROM POPLAR WOOD LOGS TO POPLAR WOOD

POPLAR WOOD IS SOLD BY WEIGHT. THE AVERAGE PRICES OF POPLAR WOOD IS APPROXIMATE PRICE - RS 500 / METRIC TON (ABOUT US$ 8) DEPENDING UPON THE GIRTH.
IN INDIA, AS A WHOLE ABOUT 80% OF POPLAR WOOD GOES TO PLYWOOD INDUSTRY.

PLYBOARD - MOST COMMONLY USED IN THE MAKING OF HOME AND OFFICE FURNITURE, INTERIOR DECORATION.
FURTHER USES

POPLARS ARE CONSIDERED SUITABLE FOR:

- PLYWOOD, PLY BOARD, PACKAGING CASES, PULP FOR PAPER, WOOD, SPORTS GOODS, MATCHSTICKS.

- ARTIFICIAL LIMBS.

- STRUCTURAL USES, LEAVES AS FODDER, FUEL WOOD.

- BARK IS USED TO MAKE TONIC, STIMULANTS AND BLOOD PURIFIER AGAINST COLD, CLEANING TEETH. THE PASTE OF THE BARK WHEN MIXED WITH THE ASH OF COW DUNG CAN BE USED TO TREAT MUSCULAR SWELLINGS.

- ALSO REPORTED TO BE EFFECTIVE IN THE CURE OF HEMORRHOID (A SWOLLEN VEIN OR GROUP OF VEINS IN THE REGION OF THE ANUS)
TANGIBLE BENEFITS....

DUE TO VERY LITTLE RISKS AND HIGH PROFITS IN POPLAR CULTIVATION, FARMERS IN NORTHERN PART OF INDIA PREFER TO PUT THEIR LANDS UNDER POPLAR-BASED AGROFORESTRY RATHER THAN OTHER AGRICULTURE/AGROFORESTRY OPTIONS.

THIS LABOR – INTENSIVE ACTIVITY AND LARGE SCALE ADOPTION OF POPLAR CULTIVATION PROGRAM (FROM NURSERY TO PLANTATION) HAS HELPED THE FARMERS IN EARNING HUGE PROFITS.
TANGIBLE BENEFITS

THE ACTIVITY OF RAISING POPLARS AND THEIR MARKETING, HAS NOT ONLY GIVEN ECONOMIC BENEFITS TO THE FARMERS BUT ALSO TAKEN EMPLOYMENT TO THE VERY DOOR-STEPS OF THE UNEMPLOYED.

DUE TO THEIR FAST GROWING NATURE, THEY SERVE AS RENEWABLE RESOURCES FOR FUTURE GREEN ECONOMIES.

ABOVE ALL, POPLARS ALSO OFFER THE ENVIRONMENTAL BENEFITS SUCH AS THE CAPTURE OF CO-2 TO HELP WITH THE STRUGGLE AGAINST CLIMATE CHANGE.
FUTURE OF POPLAR

FUTURE OF POPLAR IN INDIA DEPENDS ON SUPPLY OF POPLAR, IF THE SUPPLIES INCREASES THE RATES FALLS WHEREAS THE DEMAND IS INFINITE.

INDIA ITSELF CONSUMES A LOT OF PLY-BOARD AND REST IS EXPORTED TO MIDDLE EAST WHERE THERE ARE ONLY DATE PLANTS FOR THE SAKE OF GREENERY.

PLY-BOARD INDUSTRY IS EARNING HUGE PROFIT AND IT CAN BE VERY MUCH HOPED THAT THE FUTURE OF POPLAR IS BRIGHT.
THANK YOU