

## FARMERS' PERCEPTION ABOUT AGROFORESTRY IN BUNDELKHAND REGION

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The success of agroforestry largely depends upon how it is accepted by our clientele the farmers. In recent years agroforestry has been developed as a science that promises to help farmers increase the sustainability, productivity and profitability of production on their land. "Agroforestry is a land use that involves deliberate retention, introduction, or mixture of trees or other woody perennials in crop/animal production fields to benefit from the resultant ecological and economic interactions" (Nair, 1992). About 50% of the total agricultural land in the country, is estimated to be marginal land and could be more productively used by revegetating with suitable species of trees and grasses in association with crops. Dwivedi and Solanki, (1997) stated that status of agricultural extension perspectives in agroforestry research in India is determined by the very character of the problems to be solved by the land-use technologies. In this context farmers' perception about agroforestry in the light of shrinking natural resources such as land and water and need to maintain the ecological balance will be the important dimension to study.

The Bundelkhand region comprises seven districts of Uttar Pradesh (Jhansi, Jalaun, Lalitpur, Banda, Hamirpur, Mahoba and Chitrakut Dham Karwi) and six districts of Madhya Pradesh (Datia, Tikamgarh, Chhatarpur, Panna, Sagar and Damoh) including Lahar and Bhandar subdivisions of Bhind and Gwalior districts, respectively. The total geographical area of Bundelkhand is 7.85 million hectare (Anonymous, 2001). The region is located between 23°8' -26°30' N latitude and 78°11' -81°30' E longitude and at 300 m Above Sea Level (ASL). The climate of the region is semi-arid. The region is characterized by extremely harsh and hostile climatic conditions. The mean annual temperature is 26.5°C with May and June being

the hottest months, January being the coldest month. The annual rainfall varies from 800 mm to 1300 mm, with an average of 900 mm of which 80 to 90 per cent is received during monsoon season. The distribution of rainfall is erratic and uncertain. Annual potential evaporation of 1400 to 1700 mm is higher than the annual precipitation, leaving thereby a shortage of soil moisture for growing crops. Bundelkhand is predominantly monocropped region. The crops are grown in Monsoon (Kharif) season on red soils and in Rabi season on black soils with conserved moisture.

Land of Bundelkhand region is undulating, poor in fertility status, shallow in depth with poor water holding capacity. Irrigation facilities are limited and is primarily through open wells having poor water discharge capacity. On the basis of colour, texture, depth, etc., the soil of this region can be classified into two major groups i.e. red soil (includes rakkar and parwa) and black soil (includes mar and kabar). It has been reported that 56 percent area of Bundelkhand region of Uttar Pradesh is under red soil group. The dwindling forest cover in the region resulted in shortage of fodder and fuel wood and therefore, animal dung, the valuable source of well rotten Farm Yard Manure (FYM), is diverted for making dung cakes to be used for fuel purpose. In the region, though there is an abundant area under natural grassland with the grasses, trees, bushes, etc., but the practice of Annapratha (to keep animals let loose) left these grasslands without grasses and trees due to over grazing. The available trees are heavily lopped in proportion to their age and size resulting in the death of the trees. As a result of prevailing climatic conditions, large area of the region is under rainfed agriculture. The socio-economic status of the farming community is very poor in this region.



The theoretical perspectives of the contributions that social sciences can make to agroforestry have been superbly reviewed by Burch (1992). The success of agroforestry largely depends upon how it is accepted by our clientele- the farmers. Considering the newness of the concept it was thought worthwhile to probe into farmers' perception about agroforestry systems, with the following specific objectives—

1. To study the perception of farmers about agroforestry systems and
2. To study farmers' preferences about land for agroforestry and their suggestions.

## METHODOLOGY

The present study was conducted in the three villages of Jhansi district of Uttar Pradesh viz., Karari, Khajarah Bujurg and Nayakhera. The data were collected with the help of a structured and pre-tested interview schedule from 270 farmers at the rate of 90 farmers per village. The respondents were selected by using random sampling technique. Since the present study is of an exploratory nature, the questions pertaining to the problem were mostly of an open-ended nature avoiding pro-categorization. This was done to allow for maximum freedom of responses and to include all shades of opinion. The data were analyzed on a nominal level, using numbers and percentages to express the responses.

## RESULTS AND DISCUSSION

The findings in respect of perception about objectives, benefits and importance of agroforestry, suggestions and views expressed by the farmers are presented in the following pages.

### 1. Perception about the objectives of agroforestry :

Perception among farmers about objectives of agroforestry was studied and the findings are presented in Table 1.

**Table 1. Farmers having perceived the objectives of agroforestry**

Sr. No.	Perception	Number (n=270)	%
1.	Helping rural population in fulfilling their needs of food, fuel, fodder and small timber.	164	60.75
2.	Creating permanent clusters of trees and creating job opportunities for local population.	70	25.85
3.	Increasing the area of forests for maintaining balance of nature.	36	13.40

It is observed from the findings that majority (60.75%) of farmers have perceived the agroforestry system as providing food, fodder, fuel and small timber. The other components of agroforestry like creating permanent clusters of trees and creating job opportunities and maintaining balance of nature were perceived by 25.85% and 13.40% farmers respectively. It indicates that the farmers are aware about objectives of agroforestry and their perception about the objectives of agroforestry is quite clear.

### 2. Perception about importance of agroforestry :

The findings about perception about the importance of agroforestry among farmers are presented in Table 2.

**Table 2. Farmers having perceived the importance of agroforestry**

Sr. No.	Importance	Number (n=270)	%
1.	Agroforestry can help to stop soil erosion, conserve rain water and check drought conditions and air pollution.	66	48.66
2.	Agroforestry can provide fodder for cattle, help in making available small timber and poles, help to bring into use the waste lands and tree products like fruits, medicinal plants, etc. can be made available through agroforestry. Dryland farming has become less profitable and agroforestry is a good substitute	158	58.65
3.	Agroforestry can provide employment to rural masses in their own villages and help the farmers earn money with less labour.	61	22.38
4.	Growing Subabool can fulfill their needs of fodder and poles.	28	10.34

It is revealed from Table 2 that majority of farmers (58.65%) perceived agroforestry as important way of utilizing waste and uncultivated land, provide fodder for cattle, help in making available small timber and poles, fruits, medicinal plants can be made available and agroforestry as a good substitute for Dryland farming conditions. Most of the farmers (48.66%) also felt that agroforestry can help to stop soil erosion, conserve rainwater and check drought conditions and air pollution. About ten percent farmers also felt that growing Subabool can fulfil their needs of fodder and poles useful for construction of houses and making implements, etc. Some of the advan-



tages of agroforestry perceived by the farmers were potential of rural employment through agroforestry (22.38%). One of the significant advantages of agroforestry as perceived by majority farmers (58.65%) was that agroforestry was a good substitute where Dryland farming has become less profitable. It indicates that in our country agroforestry has a vast scope in rainfed conditions.

### 3. Preference of land for agroforestry :

The respondents (farmers) were asked about their preferences about land, which can be brought under agroforestry. The findings are given in Table 3.

**Table 3. Preferences for land to be brought under agroforestry**

Sr. No.	Land preference	Number (n=270)	%
1.	Uncultivated land	143	52.88
2.	Farm borders and field boundary	104	38.45
3.	Cultivated land	23	8.67

It is observed from the findings that majority (52.88%) farmers preferred uncultivated lands for agroforestry, while 38.45% farmers preferred farm borders and field boundary for growing agroforestry trees. Some farmers (8.67%) gave preference to cultivated land for agroforestry. It is important to note that about ten percent farmers preferred their cultivated land to be brought under agroforestry and 38% farmers preferred farm borders and field boundary to be brought under agroforestry. It indicates that there is need of field demonstrations of agroforestry at farmers field so that awareness will be increased.

### 4. Suggestions of farmers :

The suggestions of farmers for popularizing agroforestry were collected and are presented in Table 4.

It is revealed from Table 4, that 38.64% farmers desired some financial assistance necessary for planting of trees. More agroforestry extension activities need to be organized to inculcate the importance of agroforestry in the minds of common farmers as suggested by 27.35% farmers.

Organizations of demonstrations (21.65%) and promotion of fruit trees (12.36%) were some of the other suggestions of farmers for agroforestry programme. In this context Dwivedi and Shukla (1998), stated that Government regulations on felling of trees from agroforestry lands and transport of agroforestry produce has to be carefully deregulated to benefit various strata of farming community.

**Table 4. Suggestions of farmers in respect of agroforestry**

Sr. No.	Suggestions	Number (n=270)	%
1.	Demonstrations should be arranged	58	21.65
2.	Importance of agroforestry be inculcated through intensive agroforestry extension efforts.	74	27.35
3.	Financial help to farmers for planting of trees, etc.	104	38.64
4.	Fruit trees should be promoted	34	12.36

## CONCLUSION

The success of agroforestry largely depends upon how it is accepted by our clientele the farmers. It was revealed that Majority of the farmers have perceived the agroforestry system as providing food, fodder, fuel and small timber. It is concluded that agroforestry is an important way of utilizing waste and uncultivated land for production and as a good substitute where dryland farming has become less profitable. Farmers need financial assistance for planting of trees. More agroforestry extension activities including demonstrations need to be organized to inculcate the importance of agroforestry in the minds of common farmers. It can be concluded that there is a need for intensive agroforestry extension efforts for inculcating the importance of agroforestry systems among villagers.

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## REFERENCES

- Anonymous (2001). District statistics annual report, Jhansi.
- Burch, W.R. Jr., (1992). Thinking social scientifically about agroforestry. In Social science application in Asian agroforestry (Ed. Burch, W.R. Jr. and Parker, J.K.), Winrock International, USA.
- Dwivedi, R.P. and Solanki, K.R. (1997). Status of agricultural extension perspectives in agroforestry research in India. In Social science perspectives in agricultural (Ed. D. Das Gupta and S.D. Mukhopadhyay) Visva Bharti, Shantiniketan, India, pp. 25-29.
- Dwivedi, R.P. and Shukla, S.K. (1998). Agroforestry for sustainable land management. Employment News 5-11 December, 1998, Vol. XXIII No. 36 pp 1&23.
- Nair, P.K.R. (1992). Classification of agroforestry systems. Agroforestry Systems 2(2): 97-128.

