BENEFITS AND CONSTRAINTS OF RAISING HURRIE PLANTATION IN DISTRICT HYDERABAD, SINDH

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ABSTRACT

Study was conducted through social survey to determine the benefits and constraints of raising Hurrie plantation in the three Union Councils; Seri, Hatri and Masoo Bhurgri of Hyderabad district. Among 24 respondents 21% farmers have 1-5 acres of Hurrie plantation, 13% have 6-10 acres, 29% have 10-16 acres and 37% have more than 16 acres. The results show that 58.3% farmers raised hurrie by themselves and 41.7% grow through tenants. The cost for raising hurrie varied from 7000/acre/rotation (15.% respondents), 10,000 (35.% respondents) and 15,000 (50% respondents) and income also varied from Rs.150,000 to 160,000 /acre/rotation (41.7% respondents) and more than Rs.170,000 (58.3% respondents). Respondent farmers (66.8%) informed that Hurrie is being raised for fuel wood production, 16.6% reported for forage, fodder and minor timber production and 16.6% respondents reported for timber (packing and casing wood industry). According to ecological requirement of Babul, respondents and personal experience confirmed that Babul can survive with occasional irrigation in water poor areas, less supervision and management practices. It increases the soil fertility and rehabilitates the land for raising agriculture crops in due course of time. Based on findings, the study concluded that raising of Hurrie plantation is beneficial business which improves the livelihood of the inhabitants.

INTRODUCTION

The farmers of Sindh province has been raising “Hurrie” plantation on agricultural lands since 1858. Sir Bartly Frer, who was the commissioner of Sindh, issued a directive (Anon, 1858. Circular No. 481, March 6, 1858) to his collectors mentioning that farmers should be given agricultural land upto 4 hectares free of charge for raising trees on it. The theme behind this was to meet the demand of fuel wood requirement as well as to put the land under proper utility. No other taxes such as water rates were to be levied on them. These instructions were carried out well and large numbers of families in Hyderabad district were allotted state land for raising Hurrie. The cultivation of “Hurries” is an ancient practice performed by small land owners in the Hyderabad, Thatta and Sanghar districts of Sindh province. This farm forestry practice involves the raising of Babul (*Acacia nilotica*) tree plantation in blocks or grooves at a close spacing on privately owned cultivated land by farmers (Sheikh, M. I., 1986). Raising of compact plantation of Babul/Kiker (*Acacia nilotica* L.) on agriculture wasteland to make it fertile land for agriculture crops is locally called “Hurrie”. “Hurrie” relates to Babul (*Acacia nilotica*) because other tree crops like Shisham plantations planted with same technique are not termed Hurrie (Sangi, 1987).

The farmers procure Babul seed from the local market or from provincial forest department, land is ploughed and leveled to ensure even spread of irrigation

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water and seed of Babul are broadcasted or sown in drills along with cotton seed in the month of April/May in blocks of 5x5ft cleaning and pruning are carried out during 3rd and 4th years (Siddiqui, 1991). The Hurrie is a productive method of growing trees (Babul) on private farm lands (Sheikh and Khalique, 1982.)

The main theme of this study was to assess the benefits and constraints of growing Babul (*Acacia nilotica*) in the form of hurries and the perceptions of the farmers regarding advantages of growing tress on the farm land of district Hyderabad to improve their livelihood that will ultimately lead to greater economic prosperity of the country and also to find out domains for further scientific research on hurries.

Material and methods

Social survey was carried out in 12 villages of three Union Councils; Seri (Mulakatiar, Sekat, Bhali Dino Kaka, Jandal Kot), Hatri (Tando Soomro, Darya Baig Mughal, Haji Umar Palari Zaheer Khan Barich, Gul Muhammad Chalgri) and Masoo Bhurgari (KK Nizmani, Pir Chandoo) in district Hyderabad. The villages having Hurries were interviewed and data was collected from the land owners and tenants of the hurries with the help of prescribed questionnaire at random of 24 land owners/tenants. The interviews were conducted either in the hurries of those who were living near their farm or at their residence. The problems of raising hurries were discussed with the farmers in an informal and frank way in order to encourage the owners and tenants to collect information as much as possible with out hesitation. Subsequently, field observations were also recorded.

The field measurements of plants of 1, 3, 5 and 7 years age were randomly selected among the mentioned hurrie places. Approximately, thirty two circular plot of 1/1000 hectares (radius 5.64m) were randomly selected in each hurrie and data was collected within each plot on Height of one representative tree, Dia at breast height of two representative tress, Number of all standing trees and condition of crop health and disease were recorded.

RESULTS AND DISCUSSION

1. Education

According to the questionnaire, the education of head of the families has been categorized into three classes:

i. Illiterate
ii. Semi-literate (primary to secondary level)
iii. Graduate and above

Among twenty four respondents 17% were found completely illiterate while 54% having primary to secondary level of education and the rest 29% had acquired the higher education.

The main causes of primary, secondary education and illiteracy are poverty/ resources, access to institutes and unemployment. Moreover, the children are engaged in abuse of child labour and are unable to get education.

2. Farm sizes

Out of twenty four respondents 21% had farm size ranging from 1 to 5 acres, 13% had 6 to 15 acres, while 29% had 16-25 acres while the rest majority of 37 % had 26 and above acres of farm sizes.

3. Hurrie cultivation trend

On the basis of farm size, the respondents were divided into two main groups; Self cultivation and Tenants cultivation. Out of 24 respondents, fourteen (58.4%) reported self cultivation on their farm land in order to earn their livelihood and make both ends meet while the rest (41.6%) of them were tenant cultivators.

4. Preference methods of hurries cultivation

There are two main methods of growing hurries namely; i) line sowing/drillings and ii) compact block plantation through broadcasting of Babul seed. Sixty Six percent of the farmers grow hurries by line sowing along with agriculture crops like cotton, wheat or Jantar (S*esbania sesban*) for maximum land utilization and rest of the 34 percent farmer preferred to grow hurries in compact or block form through seed broadcasting method. Further analysis of farmers growing hurries in sowing/drilling form, it is revealed that 71.1 percent of the farmers have grown hurries in this pattern is 1-5 acres of their farm land, while 28.9 percent preferred to grow in more than five acres of their land. The reason for preference of growing hurries in line is due to economical value because in drilling the lesser seed is required and Hurrie can also be maintained well during early period. Furthermore, there is less competition between agriculture crop and tress and quick return from agriculture crops.

5. Expenditure incurred on raising hurries

Out of twenty four farmers, four farmers (16.7%) spent up to Rs.7, 000/- or less in the rotation period of hurries, eight farmers (33.3%) spend up to 10,000/- and the rest (50%) spend up to 15,000/- or more, however, some farmers spend more if the rotation period is increased.

6. Field measurements

Field measurements of plants of 1, 3, 5 and 7 years age were recorded within each plot on Number of all standing trees, Dia at breast height, Height and condition of crop health and disease

Table 1. Number of tress per plot (plot size 1/100 hectare)

Plot Number	Number of tress			
	1st year	3 years	5 years	7 years
01	102	72	57	39
02	97	74	51	41
03	103	67	44	40
04	97	75	52	36
05	105	66	58	41
06	98	77	50	35
07	105	75	54	40
08	92	68	47	39

Diameter Increment

It can be inferred from the observation and table 1 that hurries grow luxuriantly in terms of average diameter up to 5 years. Thereafter, the average increment starts declining. It is so because of lesser competition at that age in comparison to higher age. Secondly, the roots of Babul do not expand earlier. However, better results even after 5 years can be secured through management of proper spacing among trees.

Table 2. Diameter of trees in each age class

Plot Number	Diameter of tress (cm)			
	1st year	3 years	5 years	7 years
01.	1.6	5.0	6.4	8.9
02.	2.4	5.3	6.2	8.7
03.	2.3	5.2	6.2	8.5
04.	2.2	5.2	6.3	8.8
05.	2.2	5.1	6.0	8.5
06.	1.8	4.8	5.9	8.9
07.	1.7	4.6	5.8	8.7
08.	1.9	4.8	6.1	8.4
09.	2.1	5.0	6.2	8.9
10.	2.2	5.1	6.0	8.8

Height Growth

There is a period of rapid growth in height up to the age of three years, but thereafter, the rate of height growth slows down considerably. The reasons are that at the earlier stage there is less spacing and, therefore, the boles are mostly straight but as soon as the years passes by, the thinning practice provides more space to trees hence increase in diameter is observed rather than height. The data is tabulated as under:

Table 3. Height of trees in each age class

Plot Number	Height of tress (cm)			
	1st year	3 years	5 years	7 years
01.	3.0	5.9	8.1	9.1
02.	2.9	6.3	8.2	9.4
03.	3.0	6.2	8.0	8.9
04.	2.8	7.6	7.9	8.3
05.	2.9	7.7	8.1	8.5
06.	2.6	7.8	8.2	8.4
07.	2.7	7.6	7.7	7.8
08.	2.5	7.6	8.0	8.3

7. Monetary benefits or per acre annual income from hurries

Babul is a multipurpose species; it generates monetary benefits due to various forms of utilization. Farmers reap many benefits out of it simultaneously. However, one or the other factor of utilization is regarded as major. It was evident that majority of farmers about 66.7% raised hurrie for fuelwood production. About 8.3 % utilized it for minor timber production. Similarly, about 8.3% utilized it for forage and fodder production, rest of the 16.7% utilized hurrie for timber production used in packing and casing industry.

There is no exaggeration to mention that hurries are less expensive and more profitable. On the basis of total income from hurries the farmers/respondents said that it varies from Rs.30, 000 to 40,000 and above per year on an average.

8. Intangible Benefits of Raising Hurries

Farmers have expressed different view regarding the benefits of hurries that:

i. Requires less water and can be grown on land which is not suitable for agricultural crop.

ii. Improve soil fertility through nitrogen fixing also adds organic matter into the soil.

iii. Provide forage, fodder, firewood, timber etc.

iv. Require less supervision with out hard work and can easily be managed through all the seasons.

9. Environmental Benefits:

i. Carbon sequestration
ii. Soil rehabilitation

10. Reasons for preferring hurrie over agricultural crops

The farmers perceived that the hurries are the best alternative in addition to agricultural crop especially in that area where scarcity of water is a big problem and the lands need reclamation through improving its fertility. Less supervision and little irrigation is required only twice or thrice during germination period in the first year and later on if possible on the availability of water.

Out of twenty four respondents, 58.4% replaced their agricultural crops with hurries due to scarcity of water, 20.8% did it due to unsuitability of land for agricultural crop while remaining 20.8% transformed to hurries for reclamation of degraded soil.

Constraints for raising Hurries:

Farmers have expressed different view regarding the constraints/limitations of hurries that:

i. It generates less revenue as compared to agriculture due to longer rotation age as compared to agricultural crops

ii. Marketing problem of hurries and financial constraints due to high inflation rate.

CONCLUSION

There is an increasing trend of hurries cultivation by replacing agricultural crops due to scarcity of water and degradation of soil fertility. Intercropping practice is being carried out with cotton as a major crop especially in linear form of hurries that earns handsome revenue to mitigate the cost of raising hurries. Tending operations helps in fodder for goats and firewood as end product. The sell of hurries is made through contractors who visit the field and make the ocular approximation of volume to be exploited. However, this is also one of the main causes of comparative lower return from the hurries in Hyderabad. Beside this, the uprooting of stumps causes the financial burden on the farmers for which they pay the higher wages. As far as the prospects of growing are concerned, it bring about more profit with lesser expenditure throughout the rotation period. However, farmers do require awareness for raising hurrie plantation and the technical assistance and guidance on the part of forest and agricultural department.

RECOMMENDATIONS

Based on the study, following suggestions are made:-

- Sindh Forest Department should establish seed banks for provision of quality seeds to the farmers and availability of seeds at town and Tahsil level, free of

cost or affordable rate and ensure technical assistance involved in tending operations.

- Government should earmark easy installment loans to the Hurrie grower to make it more feasible for the low earning families.

- Need of research work on silvicultural point of view by establishing trial plots in the area for better prospects, this will motivate the large number of farmers to earmark the part of their farm land for hurries.

- It is necessary, especially in the wake of increases of food prices and shifts the option from forestry to the agriculture farms in the current scenario.

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