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Impact of arecanut area expansion on social and natural capital of farmers in Chitradurga District of Karnataka

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Abstract

The rapid expansion of arecanut cultivation into non-traditional regions of Karnataka has led to notable shifts in both the social and natural capital of farming communities. This study investigates the dual impact of this agricultural transformation, examining how increased arecanut area influences farmers' livelihoods, social participation, and resource utilization. Findings indicate that while arecanut farming has enhanced and strengthened social networks by increased organisation participation and extension contact. It has also contributed to environmental concerns such as proper utilization available water resources by adopting water conservation methods like drip and sprinkler irrigation, measures to increase the soil fertility by land development activities. The study highlights the trade-offs between social gain and ecological sustainability.

Keywords: Non-traditional, livelihood, social capital and natural capital

Introduction

The phrase "sustainable" refers to an ability to maintain or support a process continuously over time. A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. According to Chambers (1994) [4], Sustainable livelihood is defined as "a state of prosperity, as well as stockpiles and flows of food and cash, that ensures physical and social well-being and protects against poverty."

The development of agriculture is essential in meeting global food demand. (FAO, 2015) [1] emphasized agriculture development as an essential part of improving the lives and incomes of individuals in combating hunger, food insecurity and achieving sustainable development. To this end, cash crops as part of agricultural commercialization have been recommended to improve household income, as well as a way to increase the purchasing power of these households, which would give them access to a diversified mix of goods and services that can in turn lead to improve livelihood (Asih and Rustam 2022) [3]. However, the extent to which the transformation from subsistence to commercial agriculture may contribute to economic growth and poverty alleviation remains debatable. Through the channel of employment and income generation, cash crops may lead to higher income.

Arecanut (*Areca catechu* L.) belongs to the family Arecaceae, popularly known as betelnut or supari. It is

commonly used for mastication with betel leaves and is consumed by all sections of population. It is an important commercial crop of India providing livelihood to a substantial number of farm families. Although the production of arecanut is localized in a few states, the commercial products are widely distributed across the country and are being consumed by all classes of people. Arecanut industry forms the economic backbone of nearly six million people in India and for many of them it is the sole means of livelihood. Ever since 1970s, as per the government policy, area expansion of arecanut is discouraged. Nevertheless, the area increased by 70 per cent during the last two decades and the production increase was mainly due to area expansion. Area expansion of arecanut is taking place in non-traditional tracts like cleared forest lands, paddy converted lands, plains and in clay soil belt. Chitradurga district is a basic hard rock and non-traditional area to cultivate arecanut with low to moderate rainfall and one of the droughts prone districts of the state. The farmers of Chitradurga district are growing Arecanut in 43770.09 ha with a production of 0.32 lakh tones (Anon., 2022) [2]. Among six taluks, Hiriya, Challakere and Chitradurga had highest growth rate in arecanut area from past 10 years. Hence, this investigation was conceived with the primary objective of studying the impact of arecanut area expansion on social capital of farmers.

Methodology

The study was conducted during the year 2022-23 in Chitradurga district of Karnataka state. Ex-post-Facto research design was used for the study. The data was collected from 150 arecanut farmers, through personal interview method using structured interview schedule. Collected data was tabulated and analysed using appropriate statistical tools like frequency, percentages, mean and standard deviation. Microsoft excel was used for analysis.

Microsoft excel spread sheet, it was used for preparing master sheet and calculations, for preparation of tables and figures. Further, it was used for the estimation of statistical measures like frequency mean, standard deviation, and percentages, frequency for desirable independent variables and dependent variables.

Social Capital implicates social resources, "including informal networks, membership of formalized groups and relationships of trust that facilitate co- operation" (Sayer and Campbell 2003) [9]. In the present study social capital was assessed in the context of the social resources upon which arecanut farmers draw in pursuit of their livelihood objectives though organizational participation and extension contact.

Natural capital in the context of the sustainable livelihood framework mean the natural resources like land, water upon which people draw in pursuit of their livelihood objectives. In the present study natural capital was assessed in the context of the natural resources upon which arecanut farmers draw in pursuit of their livelihood objectives though land improvement and water conservation

Results and Discussion

The results in Table 1 and 2 indicate the social capital by analyzing the organization participation and extension contact of farmers due to arecanut area expansion.

Table 1 indicates organization participation, after arecanut cultivation, majority of the farmers had medium (43.34%) level of organization participation, followed by low (32.66%) level of organization participation and high (24.00%) level of organization participation. Table 2 indicates extension contact, after arecanut cultivation, Majority of the farmers had medium (47.33%) level of extension contact, followed by low (33.34%) level of extension contact and high (19.33%) level of extension contact.

The possible reason that could be attributed to this were, increasing enrollment in Farmers producer organization, Primary agricultural cooperative society for obtaining services, technical information and credit to make use of available government schemes, similar findings were also reported by Dharmaraj (2019) [5]. Farmers are progressive and they seek information from both public as well as private sector agencies to update themselves about various technologies. Also due to the fact that most of the farmers contacted subject matter specialists, input dealers, private farm consultants, and line department officials. The results were in accordance with the outcome of kavyashree (2016) [6] and Narendra (2019) [7].

The data signifies in Table 3 and 4 depict the natural capital by analyzing the land improvement activity and water conservation of farmers due to arecanut area expansion.

In case of land improvement, table 3 indicates After

arecanut cultivation, majority of the farmers involved in medium (51.33%) level of land improvement activity, followed by low (26.67%) level of land improvement activity and high (22.00%) level of land improvement activity. In case of water conservation, Data in table 4 indicate. After arecanut cultivation, majority of the farmers had high (48.67%) level of water conservation, followed by medium (27.33%) level of land water conservation and low (24.00%) level of water conservation

The probable reason might be due to the arecanut intervention, this commercial crop requires application of outside silt, land leveling to minimize water logging, contour bunding and ultimately increasing land development activities. Farmers were having positive impact on water usage, this may be due to adoption of drip irrigation the emitters slowly drop the water and moisture levels are kept at an optimal range, and availability of water to the plant growth is constant. Drip irrigation improving water access and reducing weed growth, saves time, money, water and labor because the method is efficient. The findings are in line with Reddy *et al.* (2004) [8] and Narendra (2019) [7].

Table 1: Distribution of respondents according to organization participation

Sl. No	Category	Criteria	Frequency	Per Cent
1	Low	< 8.25	49	32.66
2	Medium	8.25-10.41	65	43.34
3	High	>10.41	36	24.00
Mean=9.35			SD=2.16	

Table 2: Distribution of respondents according to Extension Contact

Sl. No	Category	Criteria	Frequency	Per Cent
1	Low	< 4.75	50	33.34
2	Medium	4.75-6.43	71	47.33
3	High	>6.43	29	19.33
Mean=5.95			SD=1.68	

Table 3: Distribution of respondents according to Land Improvement Activities

Sl. No	Category	Criteria	Frequency	Per Cent
1	Low	<3.94	40	26.67
2	Medium	3.94- 6.00	77	51.33
3	High	>6.00	33	22.00
Mean=4.97			SD=2.06	

Table 4: Distribution of respondents according to Water Conservation methods.

Sl. No	Category	Criteria	Frequency	Per Cent
1	Low	<3.88	36	24
2	Medium	3.88-5.60	41	27.33
3	High	>5.60	73	48.67
Mean=4.74			SD=1.72	

Conclusion

The expansion of arecanut cultivation into non-traditional areas has brought significant changes to both the social and natural capital of farming communities. On one hand, increased income opportunities and improved livelihoods have strengthened social capital by enhancing farmers' access to services, and community networks. On the other

hand, this shift has placed considerable pressure on natural resources, including water utilization pattern and conservation by drip irrigation and sprinkler irrigation, soil health management. While arecanut cultivation offers promising economic returns, its sustainability in non-traditional regions depends on balanced development strategies that prioritized by farmers and adopting technologies cultivating horticulture crops.

Reference:

1. Anonymous. Annual Report (2014-15). Food and Agricultural Organization; 2015. p. 200.
2. Anonymous. Deputy Director of Horticulture, Zilla Panchayath, Chitradurga; 2022.
3. Asih DN, Rustam AR. The linkage between cash crops choice and food security of rural household in Indonesia. In: 2nd International Conference on Environmental Ecology of Food Security; 2022.
4. Chambers R. Participatory rural appraisal (PRA): Challenges, potentials and paradigm. *World Dev.* 1994;22:1437-54.
5. Dharmaraj BM. A study on performance of Farmer Producer Organizations in Shivamogga District of Karnataka [MSc thesis]. Shivamogga: Keladi Shivappa Nayaka Univ. Agric. Horti. Sci.; 2019.
6. Kavyashree S. A comparative analysis of public private and corporate extension system [MSc thesis]. Shivamogga: Univ. Agric. Horti. Sci.; 2016.
7. Narendra VN. A study on farmers' practices on irrigation methods in arecanut growing areas of Chitradurga district [MSc thesis]. Shivamogga: Univ. Agric. Horti. Sci.; 2019.
8. Reddy KS, Singh RM, Rao KVR, Bhandarkar DM. Economic feasibility of drip irrigation system in India. *Agric Eng Today.* 2004;28(2):65-9.
9. Sayer J, Campbell B. The science of sustainable development: Local livelihoods and the global environment. Cambridge: Cambridge University Press; 2003.