

## RESEARCH PAPER

# SOCIAL DYNAMICS AMONG SUGARCANE, ONION AND LEAF BANANA DRIP AND NON-DRIP USERS – A SOCIOLOGICAL ENQUIRY

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## Abstract

*Social-dynamics existing in the social system determines the extent of adoption of any scientific technology. This research paper tries to find out the social dynamics existing in the different categories of farmers viz drip and non drip users. The study was carried out during the year 2008-2009 in Coimbatore and Udumalpet districts with 160 respondents, of which 120 were drip users and 40 were non-drip users. In drip users, three different categories of farmers viz sugarcane, onion and leaf banana growers were selected for the study. Proportionate random sampling method was used to select the samples. Index analysis results revealed that the existence of social-dynamics was found more (0.70) among drip users compared with non-drip users (0.65). Among the four categories of respondents, sugarcane growers exhibited more social-dynamics (0.74) followed by onion (0.71), leaf banana (0.66) and non-drip users (0.65). Further, the results revealed that non-drip users had more stratification and more social problem among themselves.*

**Keywords:** *Sugarcane drip users, Social-dynamics, Social-dynamics indicators, Adoption*

## Introduction

As water is becoming scarce, the situation demands scientific management of available water thereby improving the water productivity and potential. Among all the sectors, agriculture is the largest user of water with 70 per cent withdrawal of total water. In the current

scenario there is less scope for increasing the net sown area or increasing the water availability. Hence, more productivity with less water is the only option we have in our hand. There are possibilities to increase the productivity of crops through various modern technologies, under which drip Irrigation is one of the latest technology.

Social-dynamics existing in the social system will determine the extent of adoption of any scientific technologies. There are several factors which determine the adoption of drip irrigation; among them social-dynamics is a very crucial factor. In the recent past, several researchers studied the social-dynamics in various dimension such as social value, status, process etc. But as such there is no holistic study conducted on social-dynamics since quantification and identification of indicators are arduous. In the present study, social-dynamics was operationalised as the extent to which the social indicators such as social value, social status, social process, social problems etc., exist in the particular society at a given point of time. Keeping this objective in mind the present study was attempted to quantify the existing social-dynamics among sugarcane, onion and leaf banana drip and non-drip users by identifying the indicators of social-dynamics.

## Material and Methods

### Study site and sampling design

Coimbatore district was purposively selected for the study since the district ranks first in area under micro irrigation in Tamil Nadu state. Out of the nine taluks, Coimbatore South and Udumalpet were selected based on the greater extent of drip installation work undertaken in these taluks. In the next stage, Thondamuthur block from Coimbatore South taluk and Udumalpet block from Udumalpet taluk was purposively selected.

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The village-wise beneficiary list for Thondamuthur block was obtained from the office of Assistant Director of Horticulture. From the list, 80 respondents were selected by proportionate random sampling method of which 40 were onion growers and 40 were leaf banana growers. For the Udumalpet block, village-wise beneficiaries list was obtained. From the list, 40 sugarcane beneficiaries were selected based on proportionate random sampling method.

In order to compare the drip users with non-drip users it was decided to select 40 non-drip users. Non-drip users were selected based on the criteria that those who are not adopting the drip irrigation but having cultivation experiences of any one of the crop selected for the study. Thus the total respondent for the study was 160.

**Analytical procedure**

The indicators affecting the social-dynamics were identified through intensive analysis of literature. Further scrutiny was done by discussion with experts from the relevant field. Based on preliminary discussion,

seventeen indicators which determine social-dynamics were selected. The final inventory of indicators was subjected to relevancy rating by 35 Judges. The judges were requested to specify whether each of the identified indicators were relevant and suitable for inclusion to measure Social-dynamics of the respondents or not. Their responses were obtained on a three point continuum *viz.*, ‘most relevant’, ‘relevant’ and ‘least relevant’.

The responses received from the Judges were analysed and the relevancy co-efficient of ‘i’<sup>th</sup> indicator (RCi) was worked out by using the following formula:

$$RCi = \frac{\text{Total score of all the Judges on the 'i' }^{th} \text{ indicator}}{\text{Maximum score on the continuum x Total number of Judges}}$$

Those indicators with relevancy co-efficient of 0.6 and above were selected to quantify the Social-dynamics. The selected indicators with its relevancy co-efficient are given in Table. 1.

**Table 1.** Selected Social-dynamics indicators with their relevancy coefficient

Sl.No.	Indicators	Relevancy co-efficient
1.	Social Value	0.9132
2.	Social Status	0.8561
3.	Social Process	0.8553
4.	Social Stratification	0.8213
5.	Social Solidarity	0.7129
6.	Group Dynamics	0.7100
7.	Leadership Behaviour	0.6723
8.	Social Problems	0.6101

The finalised schedule with eight major and 38 sub-indicators was administered to the respondents who were asked to give their responses on a five point continuum scale *viz.*, Most Prevalent (MTP), More Prevalent (MRP), Moderately Prevalent (MOP), Less Prevalent (LSP) and Least Prevalent (LTP) for which the scores given were 5, 4, 3, 2 and 1 respectively. Indicator wise index was calculated by adopting the formula. For example Social Value was operationalised as to what extent rules and regulations are existing in the society. It was quantified by means of four sub-indicators. Respondents were asked to rate the existing social value

against the four sub-indicators and Social Value Index (SVI) was worked out by using the following formula.

$$SVI = \frac{SSV \text{ xi}}{TSV \text{ yi}}$$

Where,

- SVI - Social Value Index
- SSVxi - Secured score by an individual on social value
- TSVyi - Total possible score for an individual on social value

In the same way the indices of other indicators' were also calculated and the overall social-dynamics index was arrived by adding the score of each indicator viz., social value, social status, social process, social stratification, social solidarity, group dynamics, leadership and social problem. The procedure has been followed by Kalliappan (1985), Ganesan (1989), Mansingh (1993) and Palmurugan (2002) was adopted with necessary modification. The overall social-dynamics index was calculated by adopting the following formula.

$$SDI = \frac{(I_{1x} + I_{2x} + I_{3x} + \dots + I_{8x})}{(I_{1y} + I_{2y} + I_{3y} + \dots + I_{8y})}$$

Where,

SDI - Social-dynamics index

- $I_{1x}$  - Total score obtained by 1<sup>st</sup> indicator
- .
- .
- .
- $I_{8x}$  - Total score obtained by 8<sup>th</sup> indicator
- $I_{1y}$  - Total maximum possible score for 1<sup>st</sup> indicator
- $I_{8y}$  - Total maximum possible score for 8<sup>th</sup> indicator

**Findings and Discussion**

The responses on social-dynamics were obtained from drip and non-drip users on a five point continuum. From the scores obtained, indicator-wise index was calculated. The index range is from zero to one. The results are presented in Table 2.

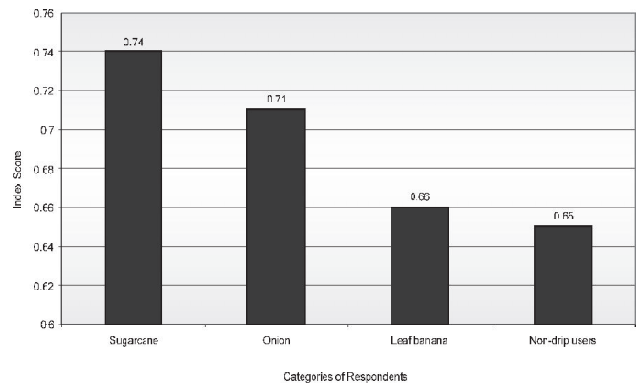
**Table 2.** Indicator-wise social-dynamics index for drip and non-drip users

Sl.No.	Index of social–dynamics	Sugarcane	Onion	Leaf banana	Total drip	Total
1.	Social Value Index	0.66	0.69	0.72	0.69	0.67
2.	Social Status Index	0.77	0.65	0.68	0.70	0.64
3.	Social Process Index	0.81	0.70	0.67	0.74	0.59
4.	Stratification Index	0.82	0.79	0.70	0.77	0.85
5.	Social Solidarity Index	0.80	0.75	0.70	0.75	0.58
6.	Group Dynamic Index	0.82	0.77	0.65	0.75	0.63
7.	Leadership Behaviour Index	0.64	0.72	0.62	0.66	0.56
8.	Social Problem Index	0.64	0.60	0.56	0.60	0.69
<b>Category-wise mean index</b>		<b>0.74</b>	<b>0.71</b>	<b>0.66</b>	<b>0.70</b>	<b>0.65</b>
<b>Category-wise rank</b>		<b>I</b>	<b>II</b>	<b>III</b>		<b>IV</b>

From Table 2, it could be inferred that the existence of perceived mean index of social-dynamics was found more (0.70) among drip users compared with non-drip users (0.65). Among the four categories of respondents, sugarcane growers exhibited more social-dynamics (0.74) followed by onion (0.71), leaf banana (0.66) and non-drip users (0.65). Indicator-wise social-dynamics index were also calculated and is discussed below. (Fig. 1).

**Social value index**

Leaf banana growers exhibited higher social value (0.72) followed by onion (0.69) and sugarcane (0.66) growers (Table 2). During the survey, it was observed that leaf



**Fig. 1.** Overall Social - Dynamics Index of the Respondents

banana growers were more traditional, orthodox and value based compared to their counterparts. Further, they were found to have lesser social constraints. Such lesser social constraints with higher value based characteristics could have contributed for higher social value among the leaf banana growers.

#### **Social status index**

Social status refers to the position of an individual in the society by virtue of his age, education and caste belongingness. It could be observed from Table 2 that sugarcane growers had perceived higher social status (0.77) followed by leaf banana (0.68) and onion (0.65) growers. During the survey, it was observed that the characteristics such as economic soundness, affordability to invest, number of educated and elderly people and respect to them were observed more among sugarcane farmers. These factors could have made the sugarcane growers to have higher social status compared to their counterparts.

#### **Social process index**

Social process refers to the extent to which the components such as cooperation, competition, conflict and accommodation exists among the farmers. The results revealed that social process has also been found to be high among sugarcane growers (0.81) followed by onion (0.70) and leaf banana (0.67) growers. The conjunctive process (Chitambar 1997) such as cooperation, accommodation and assimilation were found more among sugarcane growers which might have contributed for higher social process index among them. Besides, sugarcane cultivation needs active cooperation, contact and consultation with various organizations and associations like sugar factories and Farmers Interest Groups (FIGs) which might have also enabled higher social process among them.

#### **Social stratification index**

Social stratification is operationalised as the extent to which the society is stratified in terms of caste, religion and economy. The results revealed that non-drip users exhibited higher (0.85) social stratification among them followed by sugarcane (0.82), onion (0.79) and leaf banana (0.70) growers. Elsewhere in the study, it was found that non-drip users possessed less social solidarity and group dynamics. Furthermore, unlike drip users, there is no FIGs or structured organization among non-drip users and hence such an observation is justified.

#### **Social solidarity index**

Social solidarity is operationalised as the extent to which cohesiveness and unity exists among the members of the society. The results revealed that social solidarity was more among sugarcane growers (0.80) compared with onion (0.75) and leaf banana (0.70) growers (Table 2). People are attracted to others who cherish the same values; and it may be said that common values are among the most important of the factors that create and maintain social solidarity (Fichter, 1964 and Chitambar, 1997). Since sugarcane growers exhibited higher conjunctive process such as cooperation, accommodation and assimilation that might have resulted in common social value among them, which might have paved way for more social solidarity among them.

#### **Group dynamic index**

Group dynamic is operationalised as the nature, formation, functioning, growth and degeneration of various groups in the society. Sugarcane growers have established the highest index of group dynamics (0.82), followed by onion (0.77) and leaf banana (0.65) growers. Survey experience revealed that cane growers unite themselves into various informal group like 'Sugarcane Producers Organization' to approach sugar factories for their different demands. Hence the more group interaction leads for more group dynamics among themselves.

#### **Leadership behaviour index**

Leadership behaviour denotes to the nature and quality of leadership existing in the society. From Table 2 it could be inferred that onion growers exhibited more leadership behaviour (0.72) when compared to their counterparts. Onion is a perishable, short duration and highly price fluctuating crop which pressurizes onion growers to take quick and timely decisions on all aspects of production, storage and marketing. Therefore, majority of onion growers used to approach opinion leaders in their locality for correct decision on selling and / or storing the produce. Besides, they revealed that such opinion leaders may be their fellow farmers, input dealers, commission agents etc.

#### **Social problem index**

Social problem is operationalised as the issues such as alcoholism, smoking etc. that exists among the members of the social system. It is the disparity between the level of social values and the level of social behaviour (Fichter 1964 and Chitambar, 1997). The existence of social

problems was perceived more by non-drip users (0.69) than sugarcane (0.64), onion (0.60) and leaf banana (0.56) growers. During the survey it was observed that non-drip users had more deviant behaviour compared to their counterparts. The deviation from normal and expected behaviour resulted in higher social problem among them.

### **Conclusion**

From the above analysis, it could be concluded that different categories of farmers had unique characteristics of social-dynamics. Sugarcane growers were strong in social status, social process, social solidarity and group dynamics. Onion growers had good leadership behaviour while leaf banana growers exhibited more social value and less social problem. Non-drip users established more stratification among themselves and this was evidenced in more social problem as well. From the results it could be further concluded that society which is having more social problem and social stratification is poor in adoption for modern technologies.

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