**Original research paper**

 **Scaling up of technical backstopping in banana cultivation**

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**Abstract**

Kerala with a highly established network of education system and population control mechanism, both Human Poverty Index (HPI) and Human Development Index (HDI) are very favourable to Kerala when compared to other parts of the country as a whole. Many of the poverty alleviation programmes in India are not showing the expected results. However, the ‘Samagra’ project on Banana cultivation is one of the successes stories. This project has a multiple stakeholder partnership in Kerala, India. The stakeholders are the Thiruvananthapuram District Panchayat and Kudumbashree Mission (one of the world’s leading and successful poverty eradication programmes), the aim of the project is to enhance banana productivity through the promotion of innovations in technical backstopping. The study was conducted in three Grama Panchayats of the Thiruvananthapuram district. Three categories of respondents namely beneficiary respondents sixty were involved in the study. The dependent variable innovations in technical backstopping were measured in terms of perception about the innovative procedures, processes and institutions. The major findings of the study indicate that majority of the beneficiary respondents, felt that the innovative procedures, innovative processes and innovative institutions adopted in the ‘Samagra’ were excellent.

**Keywords:** multi-stakeholder, technical backstopping, innovation, procedures, processes , institutions and production-centered.

**Introduction**

India is an agricultural country. Over 70 per cent of India’s population is supported by agriculture. Even while India’s industrial and services sectors are growing by leaps and bounds, growth rate of agriculture is below 2 % (*Kudumbashree*, 2008). Industrial and services sectors are invariably entangled with the fortunes of agriculture due to various intricate forward and backward linkages. Kerala’s agriculture has its own uniqueness and peculiarities. Kerala is a pioneering state in India in the matter of implementation of decentralized planning process. In the agricultural sector, many demands driven initiatives towards technology commercialization have been undertaken as a part of these Local Self Governments. One among them is the promotion of scientific banana cultivation (Samagra Project), taken up by the Thiruvananthapuram District Panchayat as the nodal agency.

Women are the backbone of agricultural workforce. ‘Kudumbashree’ is the women oriented programme. ‘Kudumbashree’ mission is a poverty eradication mission officially launched by the Government of Kerala with the objective of wiping out of poverty from the state (Pawar, 2010). It plays a vital role in co-coordinating the activities of ‘Samagra’ Project. ‘Samagra’ Banana Project is for the establishment of market - oriented banana production and processing network by effectively utilizing organized ‘Kudumbashree’ units (Shilaja and Sobhana, 2010). Co-ordinated efforts of the State ‘Kudumbashree’ mission and the Thiruvananthapuram District Panchayat could effectively build up this kind of an innovative venture to improve banana cultivation utilizing high end technologies and enabling steady market. The ‘Samagra’ Project on banana cultivation stands out in many ways. It is a multi-stakeholder participatory effort in agricultural development emphasising on 5 Ps-Public-Private-Panchayat-People Partnerships. The partners in the project are the Thiruvananthapuram District Panchayat, the ‘Kudumbashree’ Mission, the Agricultural Department, the Kerala Agricultural University, the State Horticultural Mission, the Nationalised Banks, and the private partner ‘Prowins Agri System’. All the institutions are contributing to the various aspects of the ‘Samagra’ Project such as ‘Kudumbashree’ is mainly co-ordinating the activity groups, Thiruvananthapuram District Panchayat is providing subsidy to groups, agricultural department is providing crop insurance to banana growers, State Bank of Trivancore (SBT) is helping financial support to the groups, agricultural university is providing technical support in terms of project preparation, establishment of various laboratory such as soil testing lab, bio-control lab, model nursery form etc and Prowins is implementing agency at field level through Prowins field staff, pest and disease diagnosis, timely input supply, co-ordaining activity groups into marketing agency etc. It includes various innovations in technical backstopping systems. It also defined as the flow of information among people and institutions are the key to an innovative process.

**Methodology**

The study was conducted in Thiruvananthapuram district which was purposively selected. Respondents in this study were the beneficiaries of ‘Samagra’ Banana Project in the three selected gram panchayats, namely Kottukal, Kunnathukal and Kalliyoor. From each grama panchayat, twenty beneficiaries were selected at simple random sampling method. Accordingly, the total number of respondents for the study was 60 beneficiaries. Ex-post facto design was adopted in the study (Table 1). ‘Innovations in technical backstopping of ‘Samagra’ project’ were measured in terms of innovative procedures, innovative processes and innovative institutions. The term innovation is defined as a process through which the nation creates and transforms new knowledge and technologies into useful products. Perception about innovative procedures, processes and institutions involved in the ‘Samagra’ project was evaluated on the basis of their effective utilization in “Samagra’ project. The innovative procedure is defined as the fixed step-by-step sequence of activities as envisaged in the “Samagra” project. The innovative procedures are; credit linkage, full technical support given by private agency. The innovative processes are defined as the sequence of linked procedures which constitute a process. The innovative processes are assured supply of quality inputs, capacity building activities, Kudumbashree giving fund for technology support and ocio – economic – ecologically sustainable development. The innovative Institution is defined as the newly established organisations, ways and means in the implementation of “Samagra” project. The innovative Institutions are; one product – one village concept, private agency linkage with governmental agencies, ensures people’s participation and Kudumbashree linked with Local Self Government Institutions (LSGIs). The perception about innovative procedures, processes and institutions of all the respondents responses were grouped into three categories of as bad, good, excellent. The responses of respondents were collected on three point continuum viz., excellent, good, bad with scoring of 3, 2 and 1 respectively. In order to study the relationship between the independent and dependent variables, correlation analysis was done.

**Results and Discussion**

**Perception about beneficiaries about innovations in technical backstopping**

Based on the response of the respondents three categories of perception as Bad, Good, Excellent were formed and the results are presented in Table 1. From the data in Table 1, it could be inferred that the majority (70 %) of the beneficiaries had the opinion that innovative procedures in the ‘Samagra’ project were excellent. Thirty per cent of the beneficiaries opined that innovative procedures in the ‘Samagra’ project were good and none of them had bad remark about innovative procedures in the ‘Samagra’ project. Sixty five per cent of the beneficiaries opined that innovative processes in the ‘Samagra’ project were excellent. Thirty five per cent of the beneficiaries opined that innovative processes in the ‘Samagra’ project were good and none of them had bad remark about innovative processes in the ‘Samagra’ project.Majority (61.67 %) of the beneficiaries opined that innovative institutions of the ‘Samagra’ project were excellent. Over 38 per cent (38.33 %) of the beneficiaries opined that innovative institutions formed in the ‘Samagra’ project were good. None of the respondents perceived the innovative institutions in ‘Samagra’ project as bad. This may be due to fact that ‘Samagra’ is the only project providing assured market to the banana produced by the beneficiaries. This could also be attributed to the good technical backstopping provided in the project by the private agency ‘Prowins’.

**Profile characteristics of the respondents**

Profile characteristics of selected sixty respondents with reference to age, area under cultivation, experience in banana cultivation, annual income, educational status, cosmopoliteness, social participation, trainings attended, information need perception, credit orientation, risk orientation, economic motivation, innovativeness, achievement motivation and attitude towards ‘Samagra’are as follows in the table 2. Kudumbashree activity groups are respondents in this study were the beneficiaries of ‘Samagra’ Banana Project in the three selected gram panchayats, namely Kottukal(20), Kunnathukal(20) and Kalliyoor(20).

**Relationship between independent and dependent variables of beneficiaries**

In order to study the relationship between the independent and dependent variables, correlation analysis was done. The results of the analysis are furnished in the Table 3.

The results presented in Table 3 revealed that among the selected fifteen independent variables, experience in banana cultivation, educational status, credit orientation, achievement motivation had positive and significant relationship with innovative procedures, innovative processes and innovative institutions. Economic motivation had positive and significant relationship with innovative procedures and innovative institutions where as it had no significant relationship with innovative processes. Innovativeness had negative significant relationship with innovative processes where as it had no significant relationship with innovative procedures and innovative institutions. Majority of the respondents were literate and high educational status. This may be the reason for positive significant relationship of education with perception about innovative procedures, processes and institutions. This is because of the farmers are adopting the scientific banana cultivation farming practices and also the literate farmers familiar with innovations in ‘Samagra’ project. Majority of the respondents in the study were literate. The relatively better literacy status as a result of the availability of educational facilities even in rural Kerala predisposes increased awareness which may be the reason for the positive and significant relationship of education with perception about innovative procedures, processes and institutions as observed in the study. Majority of the beneficiaries were traditionally banana growers with more experience in the indicates of banana cultivation. This could be attributed as the reason for positive and significant relationship of experience in banana cultivation with perception about innovative procedures, processes and institutions. Most of the farmers are having medium level of credit orientation. Their positive mindset about increased use of capital through credit borrowing for banana cultivation in the ‘Samagra’ Project would have led to the positive and significant relationship of credit orientation with perception about innovative procedures, processes and institutions. Economic motivation is important in promoting a person to perform more effectively to improve his/her economic status. This is a favourable psycho physical disposition which could cultivate in the positive significant relationship of economic motivation with perception about innovative procedures, processes and institutions. A person with high need for achievement would be viewing innovations in any sphere of activity with a positive frame of mind. This could be cited as a reason for the positive and significant relationship of achievement motivation in banana cultivation with perception about innovative procedures, processes and institutions as evidenced in the present study.

**Conclusions**

The study proved that ‘Samagra’ project had more number of innovative procedures, processes and institutions and it helps to uplift the beneficiaries livelihood status. The respondents had got a favourable attitude towards ‘Samagra’ Project. They also had the appreciative perception about the innovations in technical backstopping of ‘Samagra’ project on banana cultivation.

**Appendix**

**Table 1. Distribution of the ‘Samagra’ beneficiaries on their perceptions about innovations in technical backstopping (n = 60)**

|  |  |  |
| --- | --- | --- |
| **Perception category** | **Score** | **Perception about** |
| **Innovative procedures** | **Innovative processes** | **Innovative institutions** |
|  | f | % | F | % | F | % |
| **Bad** | Upto 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Good** | 4 – 8 | 18 | 30 | 21 | 35 | 23 | 38.33 |
| **Excellent** | 9 and above | 42 | 70 | 39 | 65 | 37 | 61.67 |
| Total  | 60 | 100  | 60 | 100  | 60 | 100  |

**Table 2. Distribution of respondents based on their profile characteristics (n=60)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **Category** | **Frequency** | **Percentage** |
| Age  | Young (upto 35)  | 15 | 25 |
| Middle (36-50) | 30 | 50 |
| Old (51 and above) | 15 | 25 |
| Area under cultivation **in cents**  | Low (upto 60 ) | 42 | 70 |
| Medium (61-70) | 7 | 11.66 |
| High (71 and above) | 11 | 18.33 |
| Experience in banana cultivation in years | Low (upto 3) | 29 | 48.33 |
| High (4 and above) | 31 | 51.67 |
| Annual income | Low (upto 50,000) | 13 | 21.67 |
| Medium (50,001-1,00,000) | 46 | 76.67 |
| High (1,00,001 and above) | 1 | 1.66 |
| Educational status | Illiterate  | 1 | 1.67 |
| Can read and write only | 1 | 1.67 |
| Primary school level | 17 | 28.33 |
| Middle school level | 16 | 26.67 |
| High school level | 18 | 30 |
| College level | 7 | 11.66 |
| Professional college status | 0 | 0 |
| Cosmopoliteness | Low (upto 12) | 14 | 23.33 |
| Medium (13-24) | 38 | 63.33 |
| High (25 and above) | 8 | 13.34 |
| Social participation | Low (1) | 16 | 26.6 |
| Medium (2-3) | 38 | 63.3 |
|  | High (4 and above) | 6 | 10.1 |
| Trainings attended | Low (upto 1) | 1 | 1.67 |
| Medium (2) | 19 | 31.7 |
| High (3 and above) | 40 | 66.63 |
| Information need perception | Low (upto 19) | 36 | 60 |
| High (20 and above) | 24 | 40 |
| Credit orientation | Low (upto 11) | 20 | 33.33 |
| Medium (12-15) | 25 | 41.67 |
| High (16 and above) | 15 | 25 |
| Risk orientation | Low (upto 18) | 1 | 1.66 |
| Medium (19-25) | 37 | 61.67 |
| High (26 and above) | 22 | 36.67 |
| Economic motivation | Low (upto 20) | 30 | 50 |
| Medium (21-23) | 27 | 45 |
| High (24 and above) | 3 | 5 |
| Innovativenes | Low (upto 2) | 4 | 6.67 |
| High (3 and above) | 56 | 93.33 |
| Achievement motivation | Low (upto 7) | 46 | 76.67 |
| High (8 and above) | 14 | 23.33 |
| Attitude | Unfavourable (upto 12)  | 0 | 0 |
| Neutral (13-18) | 24 | 40 |
| Favourable (19 and above) | 36 | 60 |

**Table 3. Relationship between independent and dependent variables of beneficiaries of ‘Samagra’ project**

 **(n = 60)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SI. No** | **Name of the independent variable** | **Correlation coefficient****(Y1-****Perception about innovative procedures)** | **Correlation coefficient****(Y2-****Perception****about innovative processes)** | **Correlation coefficient****(Y3- Perception about innovative institutions)** |
| 1 | Age | -0.1006  | -0.0962  | -0.0736  |
| 2 | Area under cultivation: | 0.0661 | 0.2166 | 0.1320 |
| 3 | Experience in banana cultivation | 0.4778\*\*  | 0.5846\*\* | 0.5390\*\* |
| 4 | Annual Income | 0.1580 | 0.1775 | 0.1703 |
| 5 | Educational status | 0.3708\*\*  | 0.4110 \*\*  | 0.3370\*\*  |
| 6 | Cosmopoliteness | 0.2309  | 0.0574  | 0.1580  |
| 7 | Social participation | 0.0165 | 0.1572  | 0.1215  |
| 8 | Training attended | 0.0433  | 0.0532  | 0.1335  |
| 9 | Information need perception | 0.1300 | 0.1263 | 0.1987 |
| 10 | Credit orientation | 0.6524\*\* | 0.7443 \*\*  | 0.5983 \*\* |
| 11 | Risk orientation | 0.0379  | 0.1763  | 0.0019  |
| 12 | Economic motivation | 0.4617\*\*  | 0.2402  | 0.4165 \*\*  |
| 13 | Innovativeness  | 0.1309 | - 0.2507\* | - 0.1592 |
| 14 | Achievement motivation | 0.3451\*\*  | 0.4074\*\*  | 0.3423 \*\*  |
| 15 | Attitude  | - 0.1320 | 0.2285 | 0.0873 |

\*\* Significant at 0.01 level

\*Significant at 0.05 level

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