Identifying the gap between the views of extension officers and members of farmers’ groups towards promoting sustained agricultural success in Trinidad, West Indies

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Received 27 May, 2015; Accepted 23 July 2015

Successful farmers’ groups can play a major role in the rural development and food security needs of Caribbean communities. The lack of permanency of these groups, however, has provided the basis for numerous challenges with respect to their effectiveness in promoting sustainable agriculture in the Caribbean. This study attempts to identify what may be one barrier to farmers’ group stability in Trinidad, namely a ‘disconnection’ between the thinking of group members and that of the extension officers who serve them. Two focus group sessions and two structured survey instruments, administered by the researchers, were used to capture the perceptions related to farmers’ groups from extension officers (N=123) and farmers’ group members (N=293) in Trinidad. The structured survey instruments captured responses on an interval scale which returned scores at 1-unit intervals from ‘0’ (no agreement) to ‘5’ (full agreement) for the intensity of a respondent’s agreement with several item statements. The study revealed that there are gaps between the levels and types of service extension officers believe they provide to farmers’ groups and the support and interaction farmers feel they receive from agricultural extension in Trinidad.

Key words: Extension officers, farmers, agricultural extension, group dynamics, focus groups, structured surveys.

INTRODUCTION

The Republic of Trinidad and Tobago had its classification as a developing country in the Caribbean region removed only recently, becoming a developed country in October 2011 (International Monetary Fund, World Economic Outlook, 2012). Agriculture in Trinidad and Tobago is confined generally to rural areas and is a primary source of revenue for farmers and agricultural laborers in rural households (Rosen, 2008). The
agricultural sector has performed relatively weakly in many countries as a result of constraints on productivity due to small scale operations, limited public and private investment and natural disasters (Bourne, 2008). Domestic food production has consistently been inadequate to satisfy domestic demand and, as a consequence, the Caribbean countries have grown increasingly dependent on food imports over time (Walter and Jones, 2012). The gap between domestic consumption and domestic production is quite significant, with consumption two to nearly four times greater than production (Mendoza and Machado, 2009).

Food and nutrition security are now important items on political agendas in the Caribbean region. The region must seek to find sustainable solutions to the challenges in the food and agriculture sector. Farmers in Trinidad and other Caribbean islands are becoming more collaborative in their farming activities and are organizing themselves into groups. This organization of farmers into groups, with the support from respective Caribbean governments, can possibly increase the food production potential of the Caribbean region, thereby reducing their reliance on food imports. Government support to farmers and farmers’ groups in Trinidad is conveyed currently through agricultural extension services.

There are several challenges faced by the extension services in attempts to support the sustainable development of farmers’ groups in the Caribbean. In Trinidad, it is estimated that an average of 568 farmers are assigned to one Extension Officer in an environment where there exists limited support for Extension work (Kissonsingh, 2005). There is a need to find ways in which the limited number of extension officers can serve a larger group of farmers with optimal results (Lwoga et al., 2011).

The formation of farmers’ groups is one such means of addressing the high farmer to extension officer ratio in Trinidad (The sister island of Tobago operates under a different structure). Farmers’ groups could release some of the strain of providing individual Extension support for so many, resulting possibly in more effective and better managed services.

Farmers’ groups are social structures and successful collective action initiatives are influenced by group asset configurations, composition, and characteristics (Barham and Chitemi, 2009). According to Markelova et al. (2009), collective action is defined as the “voluntary action taken by a group of individuals who invest time and energy to pursue shared objectives”.

The relationship between social capital and collective action among farmers has been well documented in the literature (Svendsen and Svendsen, 2000; Uphoff and Wijayaratna, 2000; Chloupkova et al., 2003; Megyesi et al., 2010; Mishra et al., 2013). The literature empirically supports that building social capital through farmers’ groups can help enable and sustain collective action. It has been postulated that groups with relatively high social capital will be more effective and efficient than those with low social capital (Gilson, 2003). Krishna and Uphoff (1999) assess the collective actions aspect as the benefits flowing from social capital. Social capital through group formation is not only useful for agricultural development but also for the holistic development of the rural communities (Aref, 2011).

Social networks throughout rural communities have been shown to play an indirect role in increasing agricultural productivity through knowledge sharing via networks (Liverpool and Winter-Nelson, 2010). According to Allahdadi (2011), this has been emphasized in the case of technology options such as watersheds, irrigation management, and integrated pest management strategies.

Agrawal (2001), in his review, identified several conditions required for the successful outcomes of collective action, inclusive of: small group size, clearly defined boundaries, shared norms, past successful experiences, appropriate leadership, interdependence among group members, members with different material worth but common identities and interests, and low levels of poverty.

Challenges to farmers’ groups have made them prone to failure. Danida (2004) reported that such challenges existed due to: (a) Capacity building of farmers’ groups being a slow and uneven process, with outcomes often determined as much by factors of social behaviour and cultural norms as by economic logic; and (b) Farmers’ groups susceptibility to problems concerning the accountability of their leaders, as well as the group’s legitimacy as representative or membership organizations for poorer farmers, rural women, and other marginalized groups among the farming population. Therefore, the lack of success of farmers’ groups suggests that there is a need to better understand the conditions under which collective action is useful and viable (Markelova et al., 2009; Poulton et al., 2010). Additionally, it has been suggested by Liverpool-Tasie (2012) that the extents (both the nature and the intensity) of the impacts of intra-group dynamics have not been properly researched in developing countries and this lack of understanding may account for the failure of some groups. This is true of Trinidad, where the interest in the creation of farmers’ groups is not new.

Over time, many farmers’ groups have been formed in the Caribbean. However, they exist only for a short time, going out of existence for a host of reasons. Literature searches have not revealed any studies which have fully investigated this problem in the region. Some actions are being taken, however, to promote the sustainability of farmers’ organizations. Francis (2010) reported that the Caribbean Farmers Network (CAFan), the Technical Centre for Agriculture and Rural Cooperation (CTA) and the Caribbean Agricultural Research and Development Institute (CARDI) are working to build and sustain farmers’ groups and to establish clusters, a form of
farmers’ organization, for the sustainable development of agriculture. The Inter-American Institute for the Cooperation on Agriculture (IICA) is also working to promote the sustainable development of farmers’ groups in the Caribbean.

Study objectives

The study was conducted to investigate several key areas of farmers’ group sustainability in Trinidad, as perceived by both farmers and extension officers. The study investigates the divergent and convergent views between the extension officer work-force and the farmers they serve in an attempt to propose recommendations for moving forward to close this gap between the two groups. It is felt that this must be one of the first steps in promoting farmers’ group stability.

METHODOLOGY

Research approach

The information presented in this paper was gathered from two Focus Group (FG) sessions, one each conducted with extension officers and with farmers, and two structured survey instruments, one each administered to extension officers and to farmers.

The research is rooted in a study of the make-up of farmers’ groups. The instruments are constructed to explore farmers’ group dynamics, as observed/perceived by both extension officers and farmers themselves, including the reasons why farmers join groups, the benefits they receive, and the challenges they face as members. Information is also collected on the group members’ perceptions of their leadership, of the support received from and the operation of Extension services, of their satisfaction with group membership, and, most importantly, of the possibilities for the survival of their farmers’ group. Extension officers are also polled about what they believe they contribute to farmers’ groups.

Focus groups

The first Focus Group (FG 1) consisted of nine extension officers from selected Caribbean islands, including Trinidad, Grenada, and St Vincent while the second Focus Group session (FG 2) included eight farmers who belonged to farmers’ groups in Trinidad. The potential participants were either visited or telephoned to determine if they would be willing to participate in a Focus Group exercise. The non-Trinidadian extension officers who participated in the first Focus Group happened to be in Trinidad at the time, sent here for training in Agriculture by their respective Governments. The participants from Trinidad were extension officers who were involved in Extension services support to farmers’ groups.

Participation in both Focus Groups was voluntary. The recruitment strategy for participants incorporated both informal oral screening for eligibility and relevant background checks of the participants’ employment particulars and farming activities. To ensure participation, potential Focus Group members were contacted, again after the first time, via phone calls, e-mail messages, and/or personal visits prior to the date of the actual exercise.

Both focus group sessions (FG 1 and FG2) were conducted during a morning period at the main conference room of the Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) campus of the University of Trinidad and Tobago. The site was selected because of its accessibility to participants. The room was comfortably air conditioned and conducive to discussion. The circular nature of the table allowed all participants to see, hear, and interact with each other. There were two note-takers, one of whom recorded the non-verbal expressions of the participants during the 1½ to 2 h of the meeting. Additionally, the entire session was audio recorded (Olympus Digital Voice Recorder). Verbatim notes were taken throughout the session as a back-up to the audio recording. Participants completed a data capture form to provide basic demographic details. They were all informed that their anonymity would be preserved with the use of pseudonyms. They were reminded that their participation was strictly voluntary and that, at any point, if they felt uncomfortable they could discontinue their involvement with the exercise. It was emphasized too that there were no right or wrong answers and that each should feel free to express his/her own opinion.

Refreshments were provided for all participants after the session. The note takers and facilitator met immediately after each Focus Group session to review the notes and compile and summarize the three streams of information. This promoted a more reliable extraction of main and sub-themes from the information collected during the session. The Focus Group sessions elucidated several themes which were built into the structured surveys, later administered to extension officers and farmers.

Samples of survey respondents

The number of extension officers (123) surveyed was almost (93%) the entire population of those who service farmers throughout Trinidad. The survey was a cross-sectional study of extension officers in Trinidad (as of April 2012). The survey took on average fifteen minutes to complete.

The formation of farmers’ groups in Trinidad and Tobago is based either on geographic proximity or on the main agricultural commodity of the group members. The sample of farmers used was obtained from the membership of a cross section of these groups, extracted from a list provided by the Agricultural Society of Trinidad and Tobago.

For the farmers’ survey, some 293 farmers overall were randomly selected, using proportional stratified sampling. It should be noted that, although members can belong to more than one farmers’ group, none of the respondents in this sample did. The decision to use 20% from each of 22 farmer’s group across Trinidad was based on expediency not on probability theory, although the percentage is above that demanded by basic sample size calculations, which really cannot rigorously estimate the correct sample size for a quantitative survey of 133 questions, each with its own unknown variance.

Data was collected through face-to-face administration and telephone interviews. When respondents could not fill out the survey on their own, the researcher administered it. The farmers’ survey required an average of twenty-five minutes to be completed. Data collection, for this instrument, was effected during the period August 28th 2012 to December 19th 2012.

Survey instruments

The extension officers’ survey instrument was designed with two scale components. The first scale was meant to capture the views of the extensions officers on farmers’ groups and the second scale explored the perceived extent of the extension officers’ group development efforts with farmers’ groups in Trinidad.
Table 1. Scales used in the farmers’ survey instrument (N= 293).

<table>
<thead>
<tr>
<th>S/N</th>
<th>Interval scales (perceptions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Your general beliefs ( 11 Items) Interval agreement scale</td>
</tr>
<tr>
<td>2</td>
<td>Why you joined your Farmers’ Group? ( 10 items) Interval agreement scale</td>
</tr>
<tr>
<td>3</td>
<td>Your satisfaction with your Farmers’ Group.( 15 items) Interval agreement scale</td>
</tr>
<tr>
<td>4</td>
<td>How do you see the continued survival of your group? ( 19 Items) Interval agreement scale</td>
</tr>
<tr>
<td>5</td>
<td>How much trust is there between group members? ( 11 Items) Interval agreement scale</td>
</tr>
<tr>
<td>6</td>
<td>Leadership ( 19 items ) Interval agreement scale</td>
</tr>
<tr>
<td>7</td>
<td>Extension Support ( 10 Items) Interval agreement scale</td>
</tr>
<tr>
<td>8</td>
<td>Benefits ( 14 Items) Interval agreement scale</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Nominal scales (factual)</th>
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<tr>
<td>1</td>
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<td>2</td>
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</table>

The first scale in the extension officer survey comprised twenty-two statements requiring closed responses. It utilized an interval data scale to score the intensity of agreement (with each statement) from ‘0’ (no agreement) through to ‘5’ (total agreement). On this scale, only the two ends of the scale are given levels of ‘agreement’. The scores in-between (1,2,3,4) are not identified by named levels of agreement so that the respondents are left to split the entire range from ‘0’ to ‘5’ into equal intervals and to return an answer in the form of the appropriate numerical score to match the intensity of their agreements. Because of the absolute ‘0’, the scale is actually stronger than an ordinary interval scale (in which intervals are equal and known, as they are here, but there is no absolute zero) and is closer to the ratio scale. It was developed by one of this study’s authors to produce a measure which allows parametric statistical tests of significance to be used without defying the assumptions of the matrix algebra underpinning those tests.

The scale uses numerical scores, given by the respondents themselves, to represent from none to maximum their intensity of emotion (agreement, satisfaction, usefulness, functionality, appeal, effectiveness, importance etc.). It differs from the Likert scale in 2 important ways: (a) It is interval and not nominal or ordinal and (b) It does not have negative and positive scores as are used by some researchers to code the categories of the Likert scale. It has been used in data-gathering instruments developed at UTT since 2010 and first appeared in publication in 2012 (Ali, 2012).

The second scale, Group Development, in the extension officer’s survey instrument consists of nine (9) closed-ended questions used to capture the frequency with which extension officers believe they carry out certain actions/tasks. The responses required for the statements on this component are designated as “Never”, “Once a year”, “Every 5 to 6 months”, “Every 2 to 3 months”, “Once per month” and “As needed”. (Note, though, that the frequency of “As needed” is indeterminate. Without this category, the scale becomes essentially interval or even higher order, having a true zero in “Never”). Means were not calculated for the responses to the Group Development statements.

In addition to the standard demographics, the farmers’ instrument was designed with 8 interval and 2 nominal scales (Table 1). The interval scales were meant to capture the respondents’ perceptions about certain aspects of farmers’ group dynamics, namely the respondents’ General Beliefs and Reasons for Joining; the quality of the Leadership, Member’s Values; the Trust members have in each other; their Satisfaction with membership; the Benefits they receive from membership; the Potential for Group Survival; and the role and contribution of the Extension Services they receive. The Reasons for Joining scale was meant to capture the initial motivation for pursuing membership. This, along with the General Beliefs scale, focuses on the qualities of the individual member. Both scales show considerable variability and, in fact, the Reasons for Joining scale statements should probably be considered as forming a list of options rather than being illustrative of a single latent construct. This is discussed later, when the results of reliability analysis of the scales are given.

The Trust, Group Benefits, perception of Leadership scales cover the internal Group Dynamics, while the interval Extension Services Support and the categorical External Linkages scales describe the dynamics of the Group’s outreach. Individual member Satisfaction and the perception of potential Group Survival map the results or outcomes of group membership and the associated interactions which forge the views of existing members.

Data analysis

The themes built into the discussions of the Focus Groups and the structure of the surveys (closed categories of responses) to provide insight into the perceptions of extension officers and farmers are summarized in Table 2. Thematic Analysis of the information from FG1 and FG2 gave the broad views of the two groups in these areas. These views are concretized by the results of the statistical analysis of the survey data. This was carried out using the Statistical Package for the Social Sciences (SPSS), Version 17. Responses to scale questions are summarized using statistics (means and standard deviations). Each mean reflects the respondents’ average intensity of agreement to each question on a scale. The bigger the mean, the better is the agreement of the respondents in their responses to each scale statement. The smaller this value, the better is the consensus.

The Cronbach alpha value was estimated for each interval scale as a measure of its internal consistency. Exploratory Factor Analysis (EFA), with Principal Components extraction of factors (eigen values >1.0), followed by Varimax rotation, was used to obtain the latent multidimensional themes underpinning the respondents’ manifest responses to the survey interval scale items. Correlations between demographics and outcomes from the nominal scale were estimated by chi square tests and those between scale items or scales themselves by Pearson Product Moment correlation coefficients. The impacts of demographic variables are explored in ‘t’ and ANOVA tests in which they are used as grouping variables for the scale scores and/or the scale.
Table 2. Summary of themes investigated and data/information collection approach.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Instrument where explored/measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Focus Group, Questionnaire</td>
</tr>
<tr>
<td>Trust</td>
<td>Focus Group, Questionnaire</td>
</tr>
<tr>
<td>Member benefits</td>
<td>Focus Group, Questionnaire</td>
</tr>
<tr>
<td>Member beliefs</td>
<td>Focus Group, Questionnaire</td>
</tr>
<tr>
<td>Member satisfaction</td>
<td>Focus Group, Questionnaire</td>
</tr>
<tr>
<td>Group survival</td>
<td>Focus Group, Questionnaire</td>
</tr>
<tr>
<td>Extension services/government support</td>
<td>Focus Group, Questionnaire</td>
</tr>
<tr>
<td>(a) Reasons for Joining (list)</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>(b) Group formation</td>
<td>Focus Group</td>
</tr>
<tr>
<td>General beliefs (list)</td>
<td>Focus Group, Questionnaire</td>
</tr>
<tr>
<td>Women’s groups</td>
<td>Focus Group</td>
</tr>
<tr>
<td>Role of agricultural society</td>
<td>Focus Group, Questionnaire</td>
</tr>
<tr>
<td>Challenges/barriers</td>
<td>Focus Group</td>
</tr>
</tbody>
</table>

factor scores, when applicable. The step-wise linear regression analysis routine of SPSS, V.17 is used to fit a model for Potential for Group Survival from the scores of the other interval scales.

RESULTS AND DISCUSSION

Extension officers’ demographics and perceptions

The survey was administered to 123 individuals, all of whom had direct interactions with farmers’ groups in Trinidad. Most respondents were male (89%) and within the age range of 30 to 50 years (55%). Officers from The Ministry of Food Production constituted the highest percentage of respondents (80%) in the survey sample. Some 54% of all respondents had greater than 10 years’ service as an extension officer.

The extension officers in the sample serviced the North (33%), Central (20%), and South (41%) of Trinidad, with a small percentage (6%) covering the entire island. Most of the respondents were qualified up to the Diploma (53%) or the Bachelor’s (29%) level. A substantial percentage (33%) of the officers in the sample interacted with more than 3 farmers’ groups.

The extension officers’ large interval scale of 22 items had a Cronbach alpha value of 0.71, suggesting that it is capturing a single complex construct. The strongest agreement (highest item mean values) were noted with statements about the farmers’ groups as political tools (mean = 4.04); the need for monitoring the operations (3.90) and performance (3.90) of farmers’ groups; poor leadership styles in farmers’ groups (3.90); and the reality of members reaping disproportionate benefits (3.90), all of which had mean agreements of approximately 4.0 out of a possible 5.0. The statement that “farmers’ groups exist only for existence sake” elicited the least agreement (mean = 1.8).

In the Group Development scale, most extension officers sampled seem to believe that helping farmers’ groups get organized (68%), updating their own technical skills (68%), and arranging meetings with farmers’ groups (67%) were the efforts most necessary to do ‘as needed’.

The latent orthogonal multidimensional themes obtained by Factor Analysis of the extension officers’ survey scales support what had been observed with their Focus group discussion. These included themes of ‘politics, conflict, and competition’ in farmers’ groups; of ‘dictatorial or poor leadership’ in whom members place no ‘trust’; of ‘disproportionate member benefits’; of the need for ‘monitoring’ performance and operations (as seen too with the high means); and of the ‘satisfaction’ of the extension officers with farmers’ groups.

The statement items (not themes) of ‘satisfaction’ and ‘dictatorial leadership style’ show some significant correlations. ‘Satisfaction’ of the extension officers with farmers’ groups is significantly and directly correlated with all of the positive items on the scale – namely, the beneficial impacts of farmers’ groups on agriculture, on food security, and agricultural extension itself – and indirectly correlated with perceptions of member selfishness or indolence. The view on ‘dictatorial leadership style’ trends directly with 12 of the most negative items on the scale – namely, those reflecting lack of trust, selfishness, conflict, competition, politics, opportunistic behaviour, and member inertia. Perceptions of the abilities of the farmers’ groups to improve food security, agriculture, and extension services are all tied in with each other and with the perception that farmers in farmer’ groups assist each other.

Farmers’ demographics

The extension officers’ study allowed an external, but experienced, view of the dynamics of farmers’ groups. These officers, however, cannot identify as clearly as the
Farmers themselves do the elements of group interactions which are important to members' satisfaction and which could sustain the group and so promote its survival. The Focus Group elucidated several themes which were built into the structured survey administered to farmers. As outlined before, this instrument, with its 9 scales - 8 of which are interval, with one categorical - was designed to follow all the phases from the time of the individual's joining the group along the progression to a mature member.

The farmers surveyed were predominantly male (73%), between 31 and 50 years old (52%), with most of the sample individuals belonging to geographic groups (64%), especially in the North (29%). The majority of the respondents belonged to farmers' groups of 51 to 100 members (70%), which had been in existence for 10 years or less (61%), although many respondents were members for 5 years or less (52%). The group membership was usually closed (98%), with crop farming (71%) being the main farming activity. Most groups met once per month (66%) and the members mostly attended about 50% of the meetings called (31%).

### Reliability analysis

All interval scales were subjected to reliability analysis, by estimating the Cronbach alpha measure of internal consistency and the alpha values if each item, one at a time, is deleted from the scale. This latter step reveals if a particular item is harming the scale (the alpha value increases after deletion of the item). In Table 3 are given the alpha values for the farmers' survey interval scales. It can be seen that two scales, Reasons for Joining and Perception of Extension Support, have very low alpha values.

These have little internal consistency because they are actually lists. For example, with the 10-item Reasons for joining scale, there are numerous (10!) ways in which a respondent can prioritize these reasons. No two respondents need have the same priority list so it is not possible to get consistency (Note that this does not prevent EFA from being applied to these two scales, along with the others).

### Farmers' Perceptions

Farmers appear to join groups principally 'to improve the agricultural sector' (mean = 4.94), believing that 'it is better to work together than to compete against each other' (mean = 4.93). Additional prevalent reasons for this sample are to get benefits, such as better organized ways of selling their products (mean = 4.87), and to protect their land rights (mean = 3.97). Most farmers were encouraged to join the group by other farmers (mean = 4.91) and not by Extension Officers (mean = 1.94).

The relative magnitudes of the mean agreement (of all respondents) to the statements on each of the General Beliefs, Trust, Group Benefits, and Leadership scales give the initial clues as to what obtains internally in farmers' groups. Farmers continue to believe, once they are in the Group, that one of the reasons why they joined is still valid - namely that they can increase food production (via collective action) - mean = 4.66. They believe too that 'farmers' groups can be used as a political force' (mean = 4.53), that members obtain disproportionate benefits (mean = 3.97), and that there is a need for some 'external monitoring mechanism' (4.49).

Although they agree little that 'members willingly share resources' (mean = 1.74), they trust that group members will 'work together without competition' (mean = 2.58), that both members (mean = 3.65) and the group leader (mean = 3.72) are "interested in each member's success". They perceive the group leader as both assertive (mean = 4.29) and beneficial to the group (mean = 3.39), communicating respectfully with members (mean = 3.23) and sharing knowledge with them (mean = 3.22).

They expect that members would act as a network (mean = 4.62) via which benefits could be obtained such as shared knowledge, access to discounted resources (mean = 3.47) and to markets, and protection in the event of threats to their land rights (mean = 3.07). Finally, a sense of security, of belonging, and of importance (means = 3.29 to 3.57) all form part of what leads to 'member satisfaction'. Potential group survival is

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**Table 3. Cronbach alpha values for interval scales on farmers' survey**

<table>
<thead>
<tr>
<th>Scale</th>
<th>No. of items on scale</th>
<th>Cronbach alpha</th>
<th>Alpha if one item is deleted from scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>General beliefs</td>
<td>11</td>
<td>0.65</td>
<td>0.71 for 10 items</td>
</tr>
<tr>
<td>Reasons for joining</td>
<td>10</td>
<td>0.25</td>
<td>0.37 for 9 items</td>
</tr>
<tr>
<td>Member satisfaction</td>
<td>15</td>
<td>0.97</td>
<td>No large change</td>
</tr>
<tr>
<td>Group survival</td>
<td>19</td>
<td>0.93</td>
<td>No large change</td>
</tr>
<tr>
<td>Trust</td>
<td>11</td>
<td>0.89</td>
<td>No large change</td>
</tr>
<tr>
<td>Perception of leadership</td>
<td>19</td>
<td>0.93</td>
<td>No large change</td>
</tr>
<tr>
<td>Group benefits</td>
<td>14</td>
<td>0.66</td>
<td>0.68 for 13 items</td>
</tr>
<tr>
<td>Perception of extension support</td>
<td>10</td>
<td>0.18</td>
<td>0.26 for 9 items</td>
</tr>
</tbody>
</table>
perceived to be contingent on the group’s having as members enough experienced farmers (mean = 4.77) to guide and enough young farmers to sustain group development and ensure continuity.

Extension services support is not rated highly in general by farmers. The farmers believe that they themselves can ‘improve delivery of Extension services’ to the farming community (mean = 4.55). They prefer to receive advice from other farmers than from extension officers (mean = 3.89) and they do not think that these officers are genuinely interested in them (mean = 0.70), support them with Training (mean = 0.09), or that they attend enough (mean = 0.58) or participate sufficiently (mean = 0.32) in Group meetings. These last opinions comment on the services provided by extension officers and diverge considerably from what the extension officers perceive they provide.

Correlations

Several significant correlations are found between the demographics of farmers’ groups and the External Linkages forged by these groups. Whether or not the group has a permanent meeting venue or has a constitution, or links with Research and Development Organizations are three (3) Group ‘behavioural features’ which correlate with all the standard group demographics such as location, type of farmers’ group, years in existence, category of farming, and the size of the Group, among others. Groups associated with the Agricultural Society of Trinidad and Tobago (ASTT) seem to be disproportionately smaller, younger, and of the Geographic type.

Individual and group impacts

Scale scores for every individual respondent were obtained from a weighted average of factor scores using the variance explained by the factors as the weights. These scale scores were used as dependent variables in the ‘t’ and ANOVA tests conducted to estimate individual and group impacts.

The demographics (such as sex, age, education, years farming) of individual group members had little or no impact on the scale scores for any of the 8 interval scales. Almost every group demographic, however, impacted significantly (as estimated via ‘t’ or ANOVA tests) significantly on the value of the General Beliefs scale score, on the feelings of Trust and Member Satisfaction and on the perceptions of Leadership, Group Benefits, and potential Group Survival. In every case the commodity- specific farmers’ groups, those which engaged in livestock farming, and those with members who attend meetings ‘usually or always’ had significantly higher means on all scales than the geographic groups, than those who carried out mixed or crop farming, and than those whose members did not attend meetings as often.

Whenever ‘Location’ was significant (as with its impact on the Trust, Member Satisfaction, and Group Survival scale scores), groups from the North had the highest means. Groups which were in existence > 20 years showed the highest means on the four (4) scales for which there were significant tests with this demographic (impacts on Group Survival and Leadership were not significant). Larger groups showed higher means (than those with ≤ 50 members) for 5 of the 6 scales on which group size impacted significantly (The effect on the Member Satisfaction scale was not significant). Groups which meet every 2 to 3 months have significantly higher mean values (than both those which meet less regularly and those which meet every month) for every scale except Member Satisfaction.

The perceived potential for group survival is estimated from a regression model in which the Group Survival scale scores are values of the dependent variable with the other scales used as predictors. Using the step-wise linear regression analysis routine of SPSS, V.17, the model obtained had 4 significant predictors - Group Benefits, General Beliefs, Member Satisfaction, and Leadership. This model, whose development was one of the main objectives of the research, met all the regression assumptions (of multivariate normality, little collinearity, homoscedastic residual and predictors) and explained a substantial 72% of the variance in the scores on the Group Survival scale (R² = 0.72). (Possibly here too some group demographic impacts may explain the rest). The Group Benefits scale is the main predictor of Group Survival, with a relatively large beta value (0.583). It is important to note that the Extension Services Support scale, which captures the farmers’ perceptions of benefits supplied to farmers’ groups by Agricultural Extension, does not impact on the potential for Group Survival in any way whatsoever. This is perhaps the strongest evidence that farmers’ group members do not perceive Extension, in its current form, as important to their group survival.

Convergent and divergent views of extension officers and farmers

This research was designed not just to assess and map the landscape of Extension Services in Trinidad and Tobago and its importance to farmers’ group development and support but to give projections for the future based on the information garnered from the data collected. To this end, an initial comparison is made between what extension officers believe they bring to the relationship (Group Development scale in extension officers’ survey) and how members of farmers’ groups view the Extension Services Support (specific scale in the
This discussion will focus on those scales of the farmers’ survey which represent elements of farmers’ group existence on which the quality and nature of Extension services may impact. These are the Group Survival, Satisfaction, and Group Benefits scales. The assessment of important statements in these scales should give insight into what farmers believe is/is not important to the sustainability of farmers’ groups. The Extension Services Support scale in the farmers’ survey is separated into independent multivariate themes by Factor Analysis. The main theme of this scale, labeled “Extension Officers’ Presence and Support”, is a wish list for the Extension services farmers probably want or need. These services are captured by statements which relate to extension officers (i) showing interest in farmers’ groups (ii) attending and (iii) actively participating in group meetings, while (iv) offering group training. The means of agreement with these statements are indicators of whether there is agreement among the respondents that these services are currently being provided. The actual mean values (whose possible maximum is 5.0) are all extremely low, ranging from 0.09 for the statement on ‘Training’ to 0.58 for extension officers attending group meetings regularly. This suggests that farmers do not believe that extension officers are delivering the named services.

In the area of statements reflecting the theme “Extension Officer - Farmer Interaction”, two statements stand out. These are “I prefer to interact with extension officers one-on-one” and ‘Farmers’ groups can improve delivery of Extension Services to farmers’. The means for the statements are 4.29 and 4.55 respectively. These confirm that farmers believe that their input into the services they receive will improve the quality of what they receive. They also seem to be calling for more individual versus group attention, perhaps the other side of the coin to what the extension officers consider “as needed” or ad hoc service (This is obtained from the Group Development scale on the extension officers’ survey). The sample mean of agreement (1.88) for the statement, in the factor ‘Conflict Resolution’, which pertains to the extension officers’ role, suggests that farmers do not agree very much that extension officers provide any service or have any real role in conflict resolution.

The Group Development scale in the extension officer’s survey incorporates several statements about extensions officers’ efforts, similar to those above in the parallel scale from the farmers’ survey. The theme includes statements on the extension officers’ role in ‘arranging meetings with farmers’, ‘attending meetings’, ‘participating actively in meetings’, ‘training farmers’ groups on good governance’, and ‘actively working to resolve conflicts’. Obviously then, the main areas of communal thought with regard to Extension services are essentially the same for farmers and for extension officers. However, there is a distinct perception gap between the two.

The Group Development scale is not based on fully interval data so no means are calculated. In lieu of means, it can be argued, however, that a good indication of how extension officers view the quality of the services they provide to farmers’ groups can be given by the frequencies of the “as needed” category. For each of the statements on this scale, the ‘as needed’ category has the largest percent frequency. These are 67% (arranging meetings), 63% (attending meetings), 61% (actively participating in meetings), and 59% (resolving conflicts). The very activities/services which extension officers believe they provide to farmers, farmers do not agree that they receive. There is a striking disparity between the views of these two stakeholders which needs to be reduced or eliminated.

The services which dominate the thinking of both groups are the same but the divergence in evaluation between the benefits provided and the benefits received must be reduced if extension services are to provide optimum value to farmers.

CONCLUSION AND RECOMMENDATIONS

Two issues stand out from the information and data gathered from the extension officers and farmers in Trinidad. These are issues related to group survival/failure and to leadership. Both sets of participants felt that issues such as mistrust of leaders; associated greed; the inexperience of leaders; the aged membership; members’ perceptions of corruption and bias existing among leaders; lack of transparency in procedures; poor communication; and the prevailing expectation of entitlement by group founders are some of the major reasons that set groups at serious risk of failure.

Issues such as lack of transparency and accountability require some re-organization of governing principles as well as training. Perceptions of corruption and bias can be treated with monitoring mechanisms. Inexperience can be addressed through directed continuous training. The aged membership suggests that there is the need to promote group development much more among the emerging cadre of young farmers. Extension would have an important role in this regard since a prime role of Extension is group development. Communication would have to be improved and technology introduced and/or updated and utilized if younger persons are to be encouraged to join groups. The way meetings are conducted should be modernized to appeal to young farmers.

The sense of entitlement by group founders has to be addressed if young persons are to become active members of the group. The introduction of pathways for participation in the group decision-making process could go a long way toward lessening the hold of the older farmers’ survey).
members while at the same time giving more active roles to the younger members.

The entire group governance process needs attention. This may require government intervention or even external assistance to reorganize governance procedures and make them up to date with modern best agricultural extension practices from around the world.

Concerns were articulated regarding the strength of the group leaders, the extent of the training in governance they receive, whether the leader is an active farmer or not, the role of the leader under the constitution, and the assigned powers of the leader. Leadership makes or breaks an organization. As such, clear roles and responsibilities must guide leadership.

For the proper governance of groups, leaders must be trained in correct procedures and management. The strength and power vested in leaders must be rationalized. There should be opportunities to provide management training to leaders and communication skills must be an important module in such training. It is highly recommended that training should be provided to agricultural extension officers in the area of farmers' group formation.

This training should be done pre-service as part of their formal agricultural extension training at the University of the West Indies and at the University of Trinidad and Tobago. Additionally, in-service training in good governance practices, negotiation and conflict resolution, group training, and public speaking among other areas should be incorporated as a component of a programme for the continuous training and development of extension staff.

Conflict of Interest

The authors have declared no conflict of interests.

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