



## Participatory Community-Based Management Information System: The Rural Enterprises Project in Perspective

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### ABSTRACT

Rural Enterprises Project (REP) is an integrated Micro and Small-scale Enterprise (MSE) development package aimed at involving beneficiary communities in monitoring and evaluating interventions supported by the district assemblies so as to make local people own and sustain these projects. This paper assesses the mediating role of a Participatory Community-Based Management Information System (PCBMIS) for the management of rural enterprises project in the context of assisting both project management and clients to monitor and evaluate business growth performance. The Asuogyaman District Assembly (ADA) was purposively selected for the study because it is a participating project district of the Rural Enterprises Project in the Eastern Region of Ghana. This permitted an assessment of the rural entrepreneurial poor as both object of poverty and agent of poverty reduction. 115 survey questionnaires were sent to REP clients and District Assembly staff. A sample size of 106 was used, given a margin of error of 7% and a population size of 219. The PCBMIS was used and this constituted software tools such as the Graduated Colour Evaluation (GRACE), the Rural MSE Growth (RUMSEG) application, and Geographic Information System (GIS). The study established that there was low level stakeholder participation in REP monitoring and evaluation activities, resulting from lack of a computer-based mechanism for generating adequate data for effective policy direction on growth performances of rural micro enterprises, and hence a negative effect on revenue mobilization. Thus, the PCBMIS is a recommended tool to support the planning and control functions of all stakeholders involved in rural micro enterprises project.

**Keywords:** *Rural Enterprises Project (REP), Micro and Small-scale Enterprises (MSE), technology transfer, poverty, Graduated Colour Evaluation (GRACE), Rural MSE Growth (RUMSEG) and Enterprise Monitoring Diary*

### I. INTRODUCTION

As part of the Government of Ghana's development program to create wealth and reduce poverty in rural Ghana, Rural Enterprises Project (REP) combines business development services, technology transfer, apprenticeship training, rural financial services, policy dialogue and institutional partnership building to encourage self-employment and the growth and development of small business enterprises. It is against this background that the Business Advisory Centre (BAC) comprising of the District Assembly, National Board for Small Scale Industries (NBSSI) and Rural Enterprises Project was setup on the basis of cost sharing on MSE projects in the areas of business counseling, community based skill training, small business management training, and financial support to project clients and among others. However, to build successful local rural micro entrepreneurial capacities for accelerated poverty reduction and economic growth, information resources on business growth performance must be available to policy makers (Domfeh and Bawole, 2009).

As monitoring and evaluation tools attempt to find out if project activities are implemented as planned and to achieving set objectives, Sauter (1997) explained that through Management Information Systems (MIS) communal data are organized, updated and applied for management decision making on development projects. In the same context,

O'Brien (2004) argued that MIS plays strategic role in monitoring social changes, assessing institutional strengths, and integrating internal and external data for better business growth performance. This explains the point that functional MIS captures data on activities and operations of rural micro enterprises and output information to inform policy decisions (Jawadekar, 2006). The potential benefits obtained from developing MIS applications to support management at the local and sub-local government administration is great. Thus, the greatest impacts are achieved when MIS applications are proactively created through a collaboration of all stakeholders and crafted as an administrative, monitoring and evaluation tool.

According to Gillenson and Stutz (1991) managers are hired to make effective decisions leading to efficient performance of activities. However, project beneficiaries must be allowed to make decisions about their own destinies (Sirpal, 2010). Domfeh (2006) argued that participatory, monitoring and evaluation provides an opportunity for development projects to focus better on their ultimate goal of improving poor people's lives by broadening their involvement in identifying and analyzing change. This means that the interest of business associations is to ensure that the number of entrepreneurial poor trained is executed as planned. Moreover, planning activities rely on the indicators for providing guidance. Litman (2009) defines indicators as variables used to measure and evaluate progress toward goals and objectives. It is for

this reason that Gudmundsson (2007) explained that an indicator does not only measure performances but also performs a number of important functions. Thus, indicators have informative, diagnostic, action, and communicative functions. Further, indicators help to identify trends, predict problems, assess options, set performance targets, and evaluate the success or failure of a business project. It must be noted that indicators are important tools for making decisions and measuring progress (Pretty *et al.*, 1995). According to International Fund for Agricultural Development (IFAD), the basic criteria used in most projects and programmes include accessibility, participation, availability (of service), transparency, quality, equity, relevance, utilization of service, efficiency and impact.

It is important to note that the use of GIS serves as a supportive information system within the organisational context of local government (Kushwaha, 2011). Thus, a combination of GIS and MIS as a unified system allow data to be generated, integrated, and presented in a predetermined spatial format. Hence, as pointed out by Argyris (1991) information becomes accessible to all decision and policy makers, and enabling management to focus on revenue collection strategies for specific areas. A typical case was the Chia Se Project of Vietnam that targeted alleviating rural poverty. In the monitoring and evaluation processes, collected data were stored for future actions, and to inform other stakeholders at an agreed forum to analyze and assess performance in terms of client, trade type and community level. Also, a set of qualitative and quantitative indicators were appropriately combined to explain the dynamism of rural poverty at the local level. Thus, the Chia Se project revealed that there were a number of impact indicators that could not be used for management decisions because there were no baseline data available. MIS was developed and this helped to report the implementation of project activities on recurrent basis. The success of the Chia Se Project explains

the need for the development and applicability of PCBMIS to monitor and evaluate of SMEs involved in the REP in a participatory manner. In effect, the use of PCBMIS provides access to relevant information in timely manner and can improve policy formulation to influence decision making at Asuogyaman District Assembly.

## II. STUDY AREA AND METHODS

### Study Area

The Asuogyaman District was established by the local government instrument LI 1431 of 1988 under a government programme intended to enhance decentralization and promotion of participatory democracy and grassroots development. The District was created from the defunct Kaoga District, which had Somanya as the capital in the Eastern Region (Fig. 1). The name Asuogyaman is an Akan word which comes from the fusion of 'Asuogya' and 'Oman' which literally means 'river bank state'. This is because all the major towns in the district namely, Akosombo, Atimpoku, Gyakiti, Senchi, New Akrade, Akwamufie, Anum, Boso etc. are located on either banks of the Volta Lake (Fig. 2).

The district is a seat of important national infrastructure and architectural landmarks, the country's largest hydroelectric dam provides electricity for the nation and the suspension bridge over the Volta at Adomi which links the eastern parts of the country with the Volta region. The inland port at Akosombo facilitates transportation of goods and people to and from Akosombo and the northern regions of the country. The economy of Asuogyaman district just like any typical district in Ghana is agrarian, thus the district depends heavily on agriculture in terms of employment, food security and income.

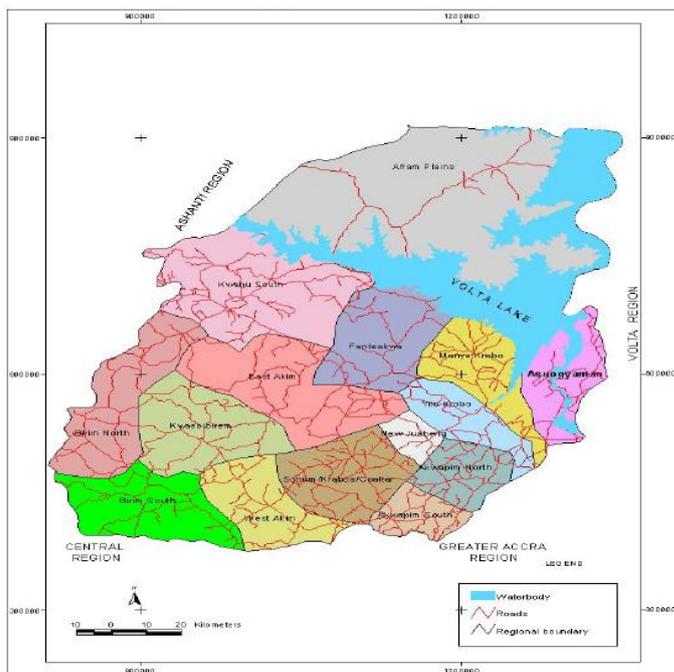


Fig. 1: Asuogyaman District in Regional context

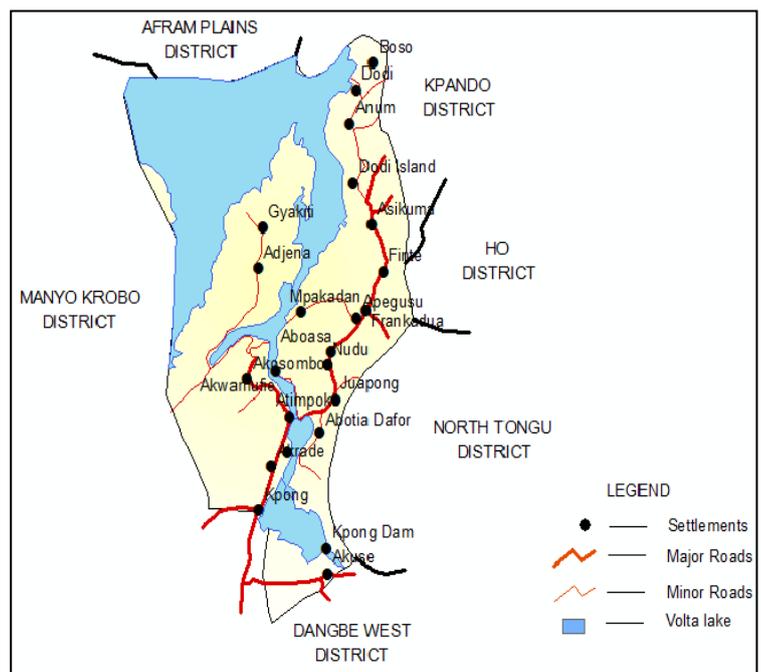


Fig. 2: Map of Asuogyaman District showing the major settlements

## Methods

The Asuogyaman District Assembly was used for the study. This case study strategy as described by Bryman and Bell (2007) permitted an in-depth assessment of the applicability of digital technology to manage information on micro and small scale enterprise development projects in relation to Rural Enterprises Project (REP). All the five main trade categories namely, agro-processing, primary fabrication and repair, traditional crafts, service enterprises, and agricultural and service products under the REP were examined. 13 out of 15 communities, according to the BAC database that had received project intervention were randomly selected for the study. 209 active businesses from the five categories were found in the BAC client database and 10 principal officers from the District Assembly together constituted the population. Out of this number, 106 were sampled for the study with a margin of error of 7% and this comprised of eight from the District Assembly and 98 from project clients. Thus, a total of 115 structured questionnaires were administered and the officers were interviewed because of their various institutional roles on growth performances of MSEs.

For consistency and easy comparison of results, a common scoring system was developed for the assessment of output, outcome and impact performance of project clients based on the agreed set of indicators. The scoring level proposed has five levels of grading. These were significant improvement 2, improvement 1, No Change 0, deterioration -1, and need serious attention -2. Thus, the study introduced feedback mechanism in which the aggregate score produced a business growth performance of the concerned client and the outcome determining the kind of business counseling that needed to be given to the client.

Based on the information gathered through questionnaires and interviews with stakeholders of REP in the District, the PCB MIS was developed. This is an integrated M&E application software package made up of the GRACE tool, RUMESG and a desktop GIS application. The Graduated Color Evaluation (GRACE) tool monitors and evaluates client growth performance. The Rural MSE Growth (RUMSEG) application informs management decisions and the supported Geographic Information System (GIS) monitors clients and their activities at their physical locations.

Thus, on the basis of clients' information RUMSEG application software was used to create information database on all clients through an input interface screen. Enterprise growth performance was measured based on indicator score that was recorded with the Enterprises Monitoring Diary. Scores assigned to each level of indicator performance ranged from integers between -2 and 2 inclusive. Aided by the Enterprise Monitoring Diary, scores recorded against each indicator by each client were entered into the system using this input interface. The aggregate score produced a business growth performance of the concerned client. In effect, RUMSEG produced reports of various forms such as client information report, associations' performance report, etc. for management decisions on overall growth performance.

The GRACE tool, on the other hand, was used to accumulate and aggregate information on performance of project clients. This tool captures baseline information on clients and at a later date capture data on performance results using the Enterprise Monitoring Diary. It produces an indicator performance chart necessary to explain situations at a particular point in time. The aspect of the GIS analyzes spatial data on a cost effective manner for effective planning and management. However, its application at the local government level for participatory planning and management is highly limited.

## III. RESULTS AND DISCUSSION

For the management of a development agenda, decision making areas are importantly identified and within them the management decision areas delineated. Information needs at each level have to be appreciated in the context of defined roles.

### Information Needs at Enterprise and Management Levels

Target project beneficiaries, planners, policy makers and resource allocators have to determine the type of information system that can produce what they need. The study revealed that management at various levels needs different kinds of information from the trade associations of rural MSE levels to the decentralized departmental levels. Such information was mostly needed for administrative tasks and this represented 75% (Table 1).

**Table 1: District Management Level Information Needs**

| Primary Information Needs                               | Frequency | % of Respondents |
|---|-----------|------------------|
| Community development                                   | 4         | 50%              |
| Illiteracy rate   | 3         | 38%              |
| Development Projects                                    | 3         | 38%              |
| Disbursement of District Assembly Common Fund           | 4         | 50%              |
| Revenue generation                                      | 4         | 50%              |
| Community Based Skill Training                          | 2         | 25%              |
| Small Business Management Training                      | 2         | 25%              |
| Support to MSE Organization & Partnership Building      | 2         | 25%              |
| Rural Financial Services                                | 3         | 38%              |
| Co-operative society development                        | 2         | 25%              |
| Technology Promotion and Support to Apprentice Training | 2         | 25%              |
| Sub-district structural developments                    | 2         | 25%              |
| Traditional authorities                                 | 1         | 13%              |
| Administrative issues                                   | 6         | 75%              |

The rural entrepreneurial poor also always think of the supply of raw materials, reliability, quality, pricing and whether suppliers offer credit terms or not. For instance, 36 of the local micro enterprise operators representing 41.3% emphasized that as managers of their own businesses their

two primary information needs were raw materials and market facilities (**Table 2**). In essence, this lack of information explains the market challenges that local products faced with cheap imported ones, especially the soap and batik and the tie and dye producers.

**Table 2: Enterprise Level Management Information Needs**

| Primary Information Needs   | Number    | Percentage     |
|-----------------------------|-----------|----------------|
| Customers and Market        | 34        | 39.08%         |
| Raw Materials and Market    | 36        | 41.38%         |
| Customers and Raw Materials | 17        | 19.54%         |
| <b>Total</b>                | <b>87</b> | <b>100.00%</b> |

### IT Equipment and Information Dissemination

There was inefficiency in MSE information management at the District Assembly in which majority 75% agreed that lack of integration among departments especially the BAC was a key factor affecting MSE information dissemination. The study established that 13 laptop computers required for field work were simply unavailable, and also none of the decentralized departments was connected to the Internet. Thus, the basic IT equipment in the individual departments and units of the Assembly were simply inadequate to enhance efficient MSE information dissemination (**Table 3**). As regards the means of information dissemination, staffs exchange information mainly by personal delivery in the form of hardcopy representing 88% as compared to the use of pen drives and telephone representing 50% and 38% respectively (**Table 4**).

**Table 3: IT Equipment Situation in the Assembly**

| Type of Equipment    | Quantity that meets Requirement | Required no. but not available |
|----------------------|---------------------------------|--------------------------------|
| Computer             | 13                              | 6                              |
| Internet (not modem) | 8                               | 5                              |
| Photocopier          | 6                               | 5                              |
| Printer              | 7                               | 4                              |
| Digital Camera       | 6                               | 5                              |
| Projector            | 5                               | 4                              |
| Telephone (intercom) | 6                               | 4                              |
| <b>Total</b>         | <b>51</b>                       | <b>33</b>                      |

It must be however stressed that the Internet was used only by the BAC to disseminate information to the Project Head office, whilst the standard telephone systems typically analog in nature had been put into intercom connectivity to facilitate voice communication only within the main Assembly.

At the enterprise level, lack of adequate information and the nature of information flow either vertical or horizontal were identified to hamper information flow between the Assembly and the association leaders including master-craft persons. It was no surprise that 88% of the clients' concerns had never

**Table 4: Means of Information Dissemination by Assembly Staffs**

| Facility                       | Frequency | Percentage of Respondents |
|--------------------------------|-----------|---------------------------|
| Intranet (LAN)                 | 0         | 0%                        |
| Internet (WAN)                 | 1         | 13%                       |
| Telephone                      | 3         | 38%                       |
| Personal delivery (Hardcopy)   | 7         | 88%                       |
| Personal delivery (Pen drives) | 4         | 50%                       |

been addressed by the General Assembly. However, only 12% of the clients' concerns were addressed through BAC, and it involved the distribution of start-up kits by REP through the assembly and the fixing of income tax. Also, project clients mostly used mobile phones for business activities such as obtaining orders and receiving calls from customers about their availability at shops and this represented 89%. This is perhaps because of its affordability and network availability extended to many rural communities by telecommunications service providers in the country. The use of computer for similar purposes accounted for only 1%,

and this was an indication of low appreciation and ignorance of the extent of support computers offer to such businesses. Access to banks through Automatic Teller Machine (ATM) card only accounted for 10% (Table 5), probably because ATM technology was not available at most rural and community banks. Further, unavailability of IT professionals to manage the few IT facilities, lack of technical know-how and staff not ready to learn new ways with digital technology represented 63%, 50% and 38% respectively (Table 6).

**Table 5: IT Equipment Used by Project Clients**

| ICT tool                | Frequency | Percent |
|-------------------------|-----------|---------|
| Mobile Phone only       | 62        | 89%     |
| Mobile Phone & ATM      | 69        | 99%     |
| ATM Card only           | 7         | 10%     |
| Computer only           | 1         | 1%      |
| Computer & Mobile Phone | 63        | 90%     |

**Table 6: Causes of Inefficiency in MSE Information Management at the District Assembly**

| Causal factor              | Frequency | Percentage of Respondents |
|----------------------------|-----------|---------------------------|
| Lack of IT professionals   | 5         | 63%                       |
| lack of IT equipment       | 6         | 75%                       |
| Lack of technical know how | 4         | 50%                       |
| Staff not ready to learn   | 3         | 38%                       |

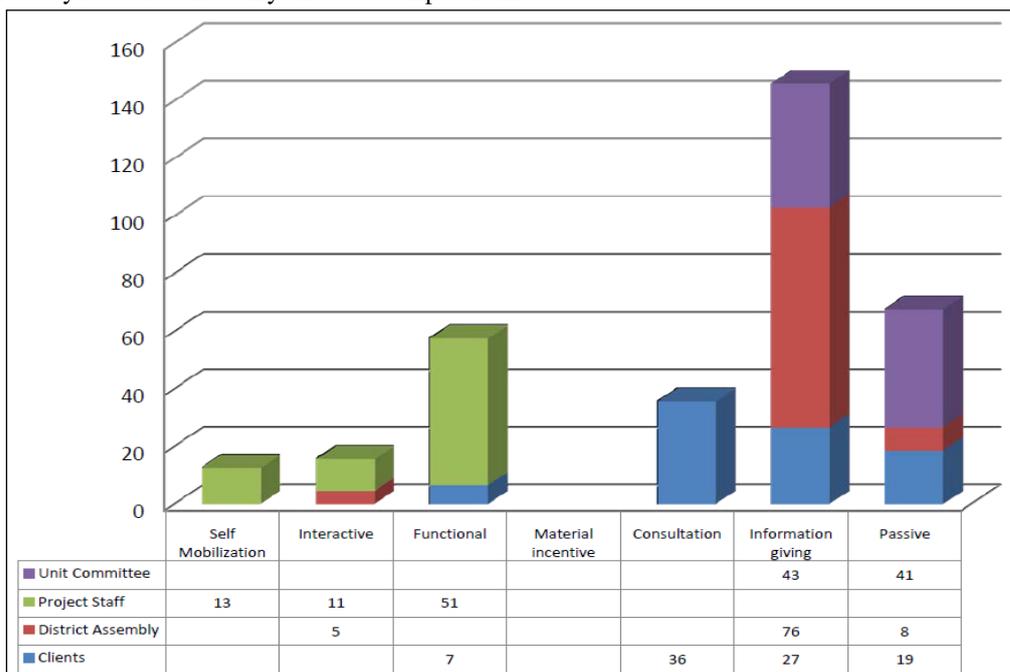
In the context of network and database facilities in the Assembly, the study revealed that only the two computers in

the Planning Unit had been networked, and this accounted for only 13%. This further aggravated the problem of information dissemination both within and outside the Assembly including MSE. Also, only the Planning Unit used relational database representing only 14%.

**Revenue Mobilization**

Revenue mobilization is one major contributing factor to local economic development, and thus an effective policy and efficient mechanism to address this concern (Kuppusamy *et al.*, 2009). The study established that inappropriate data collection mechanisms, unreliable data, unreliable revenue collectors, financial leakages, lack of cooperation from unit committees and unavailability of monitoring and tracking mechanisms were the major inhibiting factors that affected revenue mobilization in the district. This made it difficult for revenue officers to store revenue data and update them accordingly for effective collection exercises. Further, it was clear from the study that 75% of officers in the Assembly admitted the integral role of Geographic Information System (GIS) in the planning activities of the Assembly especially in monitoring and tracking potential sources of revenue generation from the MSE sector in the district. This suggests that its application would greatly improve revenue mobilization of the Assembly because physical location of potential revenue zones could be easily identified.

The level of participation of project clients, District Assembly staff, Project staff and Unit committee members on REP monitoring and evaluation activities ranged from passive participation to consultative participation. It was evident that high level of participation in project monitoring and evaluation was performed by project staff in the district, and this did not promote project sustainability and community ownership (Fig. 3).



**Fig. 3: Stakeholders' Level of Participation**

## Monitoring and Evaluation: Performance Indicators

On the recognition that monitoring and evaluation was necessary and a key success factor to determining whether or not the Rural Enterprises Project had impact on local economy of the Asuogyaman District in the Eastern Region of Ghana could be ascertained based on some measurable indicators that demonstrate the achievement of the outcome. Thus, 70.4% of the project beneficiaries did not understand the indicators used by BAC to check their performance, and

this top-down approach to M&E favoured the interest of donors, funders and project management without the concern of beneficial communities. It was obvious from the study that REP performance indicators were much relevant to project clients' businesses such that the indicator '*Clients adopting new technology*' ranked higher on the "Moderately Relevant" category representing approximately 69%. This means that it is a good outcome indicator that can be used to assess performance of a client. In general, there is relevance in the outcomes towards the achievement of REP goals (**Table 7**).

**Table 7: Clients' Views on Current REP Indicators**

| Indicators   | Very relevant (%) | Relevant (%) | Moderately relevant (%) | Not relevant (%) | Indifferent (%) |
|--|-------------------|--------------|-------------------------|------------------|-----------------|
| Clients adopting New Technology  | 10.4              | 12.5         | 68.8                    | 7.3              | 1.0             |
| New Business Established   | 12.2              | 35.7         | 49.0                    | 3.1              | 0.0             |
| New Jobs Created   | 13.4              | 54.6         | 26.8                    | 1.0              | 4.1             |
| Clients Recording increased Production                                       | 7.2               | 21.6         | 35.1                    | 30.9             | 5.2             |
| Clients Diversifying Product   | 13.4              | 30.9         | 37.1                    | 16.5             | 2.1             |
| Clients Diversifying Business  | 7.4               | 30.5         | 43.2                    | 5.2              | 13.7            |
| Clients Adopting Improved Packaging  | 3.8               | 13.2         | 46.2                    | 20.8             | 16.0            |
| Clients Recording Increasing Sales   | 34.0              | 28.9         | 30.9                    | 2.1              | 4.1             |
| Clients Keeping Business Records   | 10.3              | 26.8         | 51.5                    | 5.2              | 6.2             |
| Clients Selling Outside Home District  | 9.5               | 23.2         | 37.9                    | 17.9             | 11.6            |
| Clients Having Access to MSE Information                                     | 2.2               | 37.6         | 44.1                    | 5.4              | 10.8            |
| Clients Operating Active Bank Accounts                                       | 8.3               | 22.9         | 66.7                    | 1.0              | 1.0             |
| Clients Supplying Products to Larger Enterprises                             | 10.2              | 25.5         | 43.9                    | 6.1              | 14.3            |
| Enterprises Established by Graduate Apprentice/Unemployed                    | 10.9              | 53.5         | 30.7                    | 5.0              | 0               |
| Clients adopting good workshop safety and environmental management practices | 10.2              | 28.6         | 39.8                    | 13.3             | 8.2             |
| LBAs with improved leadership  | 10.8              | 50.5         | 35.5                    | 1.0              | 2.2             |
| LBAs networking with others  | 18.6              | 38.1         | 37.1                    | 4.1              | 2.1             |
| MSEs development issues forwarded to relevant authorities for consideration  | 19.4              | 29.6         | 42.9                    | 7.1              | 1.0             |

It must be pointed out however that collecting information on the same indicators across different trade areas does not produce clear growth performance of beneficiary clients (Kotelnikov, 2007) since for example, the same indicator cannot be used to measure the turnover of the honey producer and the soap maker.

On the basis of the need to manage M&E, 82% of project clients supported the formation of a dedicated team to manage the M&E system in the district. Hence, about 58% of these clients saw the relative importance of the monitoring team whereby the use of unpaid volunteers would be trustees of development projects (**Table 8**). This obviously is a way to

greatly improve performance of development programmes and projects in the district. To augment the activities of M&E, 67% of District Assembly staff supported the view on the new proposed computerized MIS that was intended to reduce the time spent in processing data, ensuring safe data storage and communication, speeding decision making processes and quick report generation and delivery (**Table 9**). Ultimately, this strengthens the District Assembly to become efficient and effective in pursuing its MSE developmental goals towards poverty reduction in the district.

**Table 8: Importance of Monitoring Team**

| Item                 | Frequency | % of Respondents |
|----------------------|-----------|------------------|
| Very important       | 9         | 9%               |
| Important            | 47        | 49%              |
| Moderately important | 19        | 20%              |
| Not important        | 11        | 11%              |
| Indifferent          | 10        | 10%              |
| <b>Total</b>         | <b>96</b> | <b>100%</b>      |

**Table 9: Views on the Type of System to Adopt**

| Item                   | Frequency | % of Respondents |
|------------------------|-----------|------------------|
| Computerized MIS       | 66        | 67%              |
| Manual (paper & pen)   | 8         | 8%               |
| Both Manual & Computer | 5         | 5%               |
| Focus group discussion | 20        | 19%              |
| <b>Total</b>           | <b>99</b> | <b>100%</b>      |

The implementation of any development plan depends largely on accurate and reliable information for better decision making purposes (Braumah and King, 2006). The study established that the District Assembly has a good understanding of the most important needs of the beneficiary community groups and that there is the need for a high level community participation in the M&E process to identify a number of performance indicators for tracking progress and to support business growth performance. Thus, the District Assembly needs to keep development efforts on track for project sustainability and community ownership to enable them achieve MSE development project goals. It is on these bases that the study came out with the integrated M&E application software package to effectively monitor and evaluate client growth performance.

**Implemental Role of RUMSEG, GRACE TOOL and GIS**

The desired outputs targeted by the study were the reports generated from the model developed which included the graphical representation of growth performances of micro and small scale enterprises and local business associations. Detailed information on micro enterprises operations in the district was also generated.

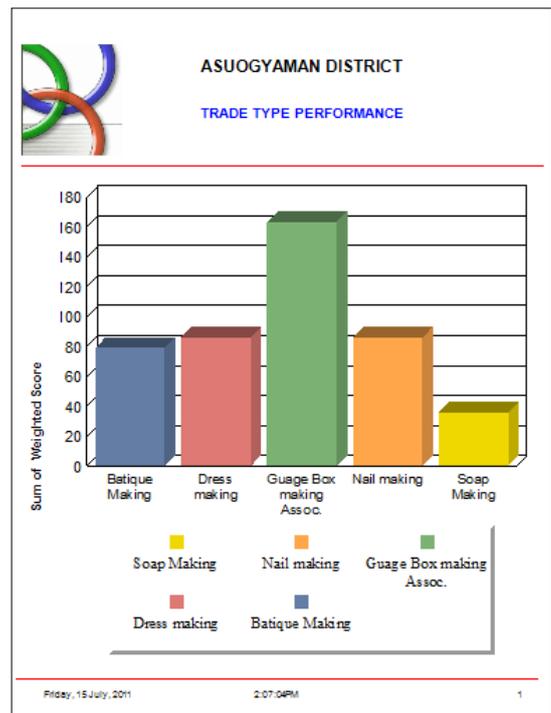
Enterprise growth performance was measured based on indicator score that has been objectively recorded with the Enterprises Monitoring Diary (Fig. 4). Scores assigned to each level of indicator performance ranged between -2 and 2 inclusive. Aided by the Enterprise Monitoring Diary, scores recorded against each indicator by each client were entered into the system. Central to its monitoring and control roles, the RUMSEG produced important reports such as report on performance based on trade type (Fig. 5), and other reports on project clients and cost of training programmes. As result, healthy competition among the Local Business Associations promotes local economic growth. This was indeed what

district authorities perceived about an MIS as tangible outputs.

The form is titled 'Enterprises Monitoring Diary'. It is divided into three main sections:
 

- General Information:** Fields for Name, Trade(s), Village/Town, and Date of Birth/Age. It also asks for the type of project assistance received with dates.
- Social Situation:** Fields for Highest level of education, Marital status (Single, Married, Divorced), Number of children/dependents, and Number of children/dependents attending school. It also includes questions about electricity and pipe-borne water at home, and the distance to the nearest water source if none is available. A field for Monthly average Income (estimate) is also present.
- Performance Indicators:** A grid with 4 rows (1st, 2nd, 3rd, 4th Visit) and 12 columns (Jan to Dec). Each cell contains 'Indicator ID' and 'Indicator Score'. A legend at the bottom indicates that scores are color-coded: Blue for -2, Green for -1, Yellow for 0, Orange for 1, and Red for 2.

**Fig. 4: Enterprises Monitoring Diary**



**Fig. 5: Performance Based on Trade Type**

The GRACE tool captures clients’ data on performance results based on a two point situational analysis and interventions introduced. It exercises automatic format whenever a total score is obtained, and the appropriate colour projected. Thus, a total score of less than 0, between 0 and 5 inclusive, between 6 and 10 inclusive, and between 11 and 15

shows colours **RED**, **YELLOW**, **BLUE** and **GREEN** indicating performance needs more improvement, there is a marginal improvement, performance is above average and performance is satisfactory respectively (Fig. 6). It must be emphasized that the GRACE tool automatically determines a particular indicator performance within a period, and this provides a basis for celebrating successes and learning from failures so as to have an early warning to prevent economic, social and environmental setbacks as well as re-appraising the indicators where necessary. Thus, it becomes much clearer when an individual client performance against a baseline score is generated automatically after the indicator performance score has been entered. For instance, the

performance of the client with the ID Number *MYK0001* shows no change in performance between the time of intervention and the time the second data were collected (Fig. 7).

Also, a consolidated trade type performance shows the baseline situation and the second time measure after the introduction of interventional performance indicators (Fig. 8). This is in contrast to the top-down approach to project management that makes indicator selection more rigid and sometimes tailored to suite donor communities, hence the need for indicator selection to be reviewed periodically.

| F                                |          |                   |        |              |                       |             |                         |       |                          |       |                 |       |                                |       |                                |       |                            |       |                          |       |                                |       |
|----------------------------------|----------|-------------------|--------|--------------|-----------------------|-------------|-------------------------|-------|--------------------------|-------|-----------------|-------|--------------------------------|-------|--------------------------------|-------|----------------------------|-------|--------------------------|-------|--------------------------------|-------|
| Graduated Colour Evaluation Tool |          |                   |        |              |                       |             |                         |       |                          |       |                 |       |                                |       |                                |       |                            |       |                          |       |                                |       |
| ID Number                        | Surname  | Other Names       | Gender | Village/Town | General Business Type | Trade       | Adopting New technology |       | New Business Established |       | New Job Created |       | Recording Increased Production |       | Operating Active Bank Accounts |       | Recording Increasing Sales |       | Keeping Business Records |       | Clients' Performance Indicator |       |
|                                  |          |                   |        |              |                       |             | Before                  | After | Before                   | After | Before          | After | Before                         | After | Before                         | After | Before                     | After | Before                   | After | Before                         | After |
| ASU0001                          | HARGOE   | GRACE             | F      | ODUMASE      | Agro Proceaaing       | SOAP MAKING | 1                       | 2     | 0                        | 2     | 1               | 1     | -1                             | 1     | 2                              | 1     | 0                          | 2     | 0                        | 1     | 3                              | 10    |
| ASU0002                          | ODONKOR  | N.COMFORT         | F      | ODUMASE      | Agro Proceaaing       | SOAP MAKING | 0                       | 1     | 0                        | 2     | 1               | -1    | 0                              | -1    | 0                              | -1    | 0                          | -1    | 0                        | 0     | 1                              | -1    |
| ASU0003                          | KUBI     | AKLAR TERESSA     | F      | AGORMANYA    | Agro Proceaaing       | SOAP MAKING | 1                       | 1     | 0                        | 1     | 0               | 1     | 0                              | 1     | -1                             | 0     | 0                          | 1     | 1                        | 0     | 1                              | 5     |
| ASU0004                          | MENSAH   | MARY              | F      | ODUMASE      | Agro Proceaaing       | SOAP MAKING | 0                       | 1     | 0                        | 2     | 1               | 2     | 0                              | 2     | 1                              | 2     | 1                          | 2     | 1                        | 1     | 4                              | 12    |
| ASU0005                          | TETTEH   | DJABATEY HUMPHERY | M      | ODUMASE      | Agro Proceaaing       | SOAP MAKING | 0                       | 2     | 0                        | 2     | 0               | 1     | 0                              | 1     | 1                              | 1     | 0                          | 2     | 1                        | 1     | 2                              | 10    |
| ASU0006                          | SACKITEY | MATEY SAMUEL      | M      | ODUMASE      | Agro Proceaaing       | SOAP MAKING | -1                      | 1     | 0                        | 1     | 0               | 1     | 0                              | 1     | -1                             | 1     | 0                          | 1     | 0                        | 1     | -2                             | 7     |
| ASU0007                          | KODJO    | ESTHER            | F      | AGORMANYA    | Agro Proceaaing       | SOAP MAKING |                         |       |                          |       |                 |       |                                |       |                                |       |                            |       |                          |       | 0                              | 0     |
| ASU0008                          | KORTEY   | JOYCE             | F      | AGORMANYA    | Agro Proceaaing       | SOAP MAKING | 1                       | 2     | 2                        | 1     | 2               | 2     | 1                              | 2     | 0                              | 2     | 1                          | 2     |                          |       | 7                              | 11    |
| ASU0009                          | KWAO     | REBECCA           | F      | NEW NUASO    | Agro Proceaaing       | SOAP MAKING | -1                      | 1     | 0                        | 0     | -1              | 1     | 0                              | 1     | -1                             | 1     | 0                          | 0     | 0                        | 1     | -3                             | 5     |
| ASU0010                          | ABBEY    | MARY              | F      | NEW NUASO    | Agro Proceaaing       | SOAP MAKING | 1                       | 1     | 0                        | 2     | 0               | 1     | 1                              | 2     | 1                              | 1     | 1                          | 2     | 1                        | 2     | 5                              | 11    |
| ASU0011                          | TETTEY   | FLORENCE          | F      | NEW NUASO    | Agro Proceaaing       | SOAP MAKING |                         |       |                          |       |                 |       |                                |       |                                |       |                            |       |                          |       | 0                              | 0     |

Fig. 6: The Graduated Colour Evaluation (GRACE) Tool

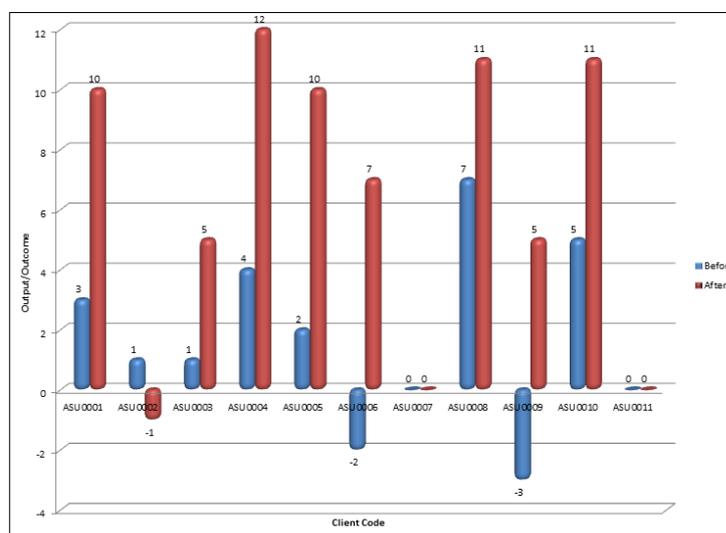


Fig. 7: Representation of Individual Client Performance

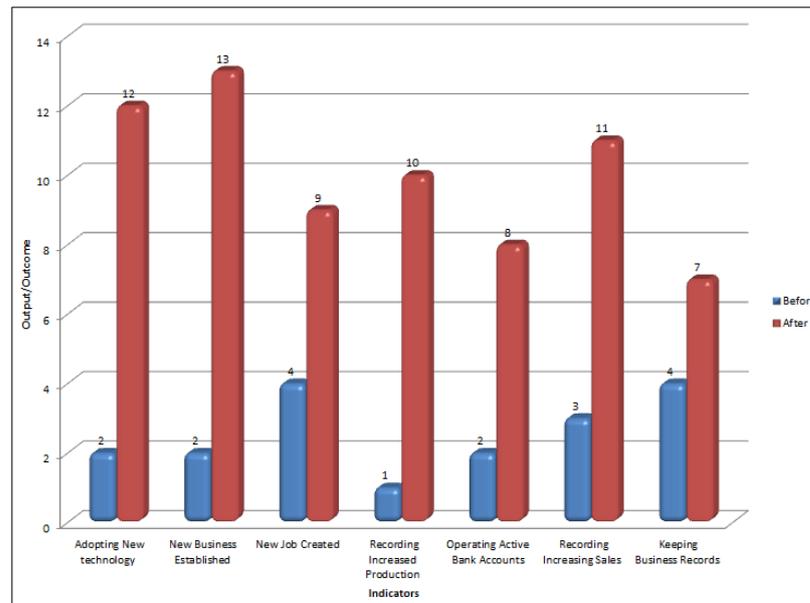


Fig. 8: Indicator Performance Chart

## CONCLUSION AND RECOMMENDATIONS

Information management at the district level by local authorities in Ghana is necessary but not sufficient to manage Micro and Small Scale Enterprises to promote Private Sector development. Digital technologies have the capacity to change the way district assemblies operate in most of their functions ranging from basic administrative functions through revenue mobilizations to community-based projects management.

In an attempt to reduce costs involved in administrative functions, projects supervision and management as well as wastage, errors and time spent on processing paper work in the Asuogyaman District Assembly, the Participatory Community Based Management Information System (PCBMIS) is recommended to help decision makers have access to tactical information at different levels of local government and to respond effectively to rural MSE development. This is to enhance decision making process of the Assembly in times of monitoring and evaluation of development projects especially when it becomes necessary to assist both project management and clients to assess, monitor and evaluate business growth performance with special emphasis on input, output and outcome indicators. Besides, stakeholders involved in revenue mobilization activities could be well organized to aid the tracking of project clients in the district.

The use of the GIS offers the capacity to analyze spatial data on a cost effective manner for effective planning and management though its application at the local government level for participatory planning and management had not yet received much recognition. In effect, the PCBMIS improves efficiency in administration, resource mobilization and help

to easily identify and evaluate performance indicators for optimal business growth performance.

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