Abstract—Significant attainment of sustainable rural development is heavily constrained by the lack of appropriate and up to date local information for planning and implementation of programs and project, this hinders efforts to monitor change in rural areas. Zambia Research and Development Centre (ZRDC) has developed, tested, and implemented the Community-Based Monitoring System (CBMS); and is now in the process of institutionalizing it in all Local Government Administrative Units (Councils) across Zambia. The main objectives of CBMS are: To diagnose the extent of poverty at the local level (Rural poverty), Formulate appropriate plans and programs in order to address under development, To provide the basis for rational allocation of resources, Identify eligible beneficiaries for targeted programs, and to Monitor and evaluate the impact of rural development programs and projects.

The distinctive features of CBMS are that: It is a census of households and not a sample survey, it is rooted in local government and promotes community participation, it uses local personnel and community volunteers as monitors, it has a core set of simple, well-established indicators and that it ultimate objective is to establish a data bank at all geopolitical levels within the for-decision makers. In actuality, this paper utilized the CBMS methodology in order to evaluate the effectiveness of the system in strategic enhancement of rural development.

CBMS has showed that good public policy choices for empowering and uplifting the poor and enhancing rural development are best made when local authorities and communities work together and are guided by sound data and evidence-based analysis. This is vital for ensuring effective public spending and greater public accountability. Enabling Conditions for CBMS implementation are: Decentralization which facilitates the adoption of CBMS, Political commitment is key to sustainability, Public participation is important for transparency, accountability and also determination of best choices in project prioritization, CBMS is cost-effective. CBMS empowers the community by building its capacity to participate in diagnosing the problem and offering solutions, CBMS improves the allocation of resources by making it easier to prioritize interventions, CBMS increases equity in resource allocation, CBMS helps to monitor the impact of projects and programs, thus contributing to poverty-reduction efforts.

The institutionalization of CBMS in Local Administrative Units (councils) is key to accurately determine the magnitude of local socio-economic problems and formulate appropriate programs and policies based on regular up to date information in order to provide practical solutions to local development based on empirical evidence. This enables decision makers to have sufficient up to date information in policy formulation and implementation, increase transparency and accountability of local government units in resource allocation, thereby improving governance.

Keywords—Review, Community-Based Monitoring System, Rural Development, Strategic Enhancement, Effectiveness.
1. INTRODUCTION
This paper seeks to demonstrate the effectiveness Community Based Monitoring System (CBMS) in strategic enhancement of rural development. To achieve this, a fair discussion and understanding of the CBMS concept is vital to this study as well as its application and the methodology used in order to arrive at the conclusion made.

Community Based Monitoring System (CBMS) is an organized way of collecting ongoing or recurring information at the local level to be used by local government agencies, NGOs, and civil societies for planning, budgeting and implementing local development programs as well as for monitoring and evaluating their performance (Celia Reyes & Evan Due, 2009).

Fundamentally, CBMS is a tool for improved local governance and democratic decision making that promotes greater transparency and accountability in resource allocation.

In order to attain meaningful and sustainable rural development, it is important to indicate that the implementation of the CBMS requires a strong partnership between researchers, local government officials, and communities within local administrative units and it is also important to indicate that enlisting and orienting the community determines success from the outset.

Sustainable rural development is a process of multidimensional change affecting rural systems (Polidori and Romano 1996). Rural areas tend to have similar characteristics and major ones include spatially dispersed populations, agriculture is the dominant economic activity and opportunities for resource mobilization are limited.

Initially CBMS was designed to be rooted (institutionalized) within local government administrative units. This was deemed vital for the sustainability of the system and this enables local communities to be trained by local researchers and increase community involvement and participation in local developmental programs.

CBMS creates partnership between local community members, local researchers, Local Government Units and civil society organizations to work together and improve the delivery of local development.

CBMS was developed in the Philippines with a design which was proposed by Florentino and Pedro under the Micro Impact of Macroeconomic Adjustment Policies (MIMAP) phase ii project in 1992. Reyes and Alba modified the proposed system in 1994, and it was initially designed to be established in sentinel areas and they recommended for it to be Local Government Unit-based to ensure its sustainability. Afterwards, the proposed system was pilot-tested in barangays and pandi, Bulacan in 1995 and 1996 and was further refined and documented in a paper by Reyes and Ilarde in 1996. CBMS was implemented in Puerto Princesa City in November 2001. The system was further simplified to enable all types of local government units (LGUs) to implement the system (MIMAP-Philippines, 2003).

CBMS evolved in the Philippines starting with the province of Palawan, one of the hurdles provincial officers faced when they began to plan the 1999 budget was lack of detailed municipal, village, household, and individual level information. Therefore, the provincial governor issued an executive order for the creation of CBMS technical working groups within local governments, setting the stage for its institutionalization throughout the province (Celia Reyes and Evan Due, 2009).

It was then noted in the 2004 review of the MIMAP program commissioned by IDRC that “Local officials acknowledged that the community based monitoring system made possible by the MIMAP helped depoliticize and strengthen the local government’s budget allocation process by providing an objective basis for budget prioritizing (Saumier, Habito, & Njinkeu, 2004). Development plans, based on an objective, needs driven assessment are vital for delivery of local development. The figure below illustrates the constituency development fund process in Zambia.
The administration of constituency development funds in Zambia has been characterized by low levels of community participation, lack of transparency and accountability (Forum for Youth Organizations in Zambia, 2012). In Zambia constituency development funds are disbursed from the central government through the ministry of local government and housing to local administrative units throughout the country (councils) in order for them to undertake the needed kind of development. *CDF Committee: only made up of 9 Members namely: 1MP, 2 Councilors, 1 Chief representative, 1 Council Officer, 4 Community Members -Selected by MP. Figure 1.1 (Evangelical Fellowship in Zambia, 2013)

The major problems with the Constituency Development Fund (CDF) process in Zambia include the following: lack of transparency, lack of community participation and undue political influence. Local people hardly participate in their local development plans, in most cases they are not consulted about what needs to be done in their locality in order to improve rural development and this makes local administrative units ineffective in performing their mandate.

The recent increase in emphasis on evidence-based policy is vital and can be easily achieved through the application of CBMS. The policy-making process for rural development needs to be developed by taking into account research findings and their implications to rural development. The failure of many rural development projects is as a result of excessive centralization of decision-making. To reverse this, there is need to; improve accountability of Local Government Units to their electorates; increase the participation of community members in the local development process; promote greater fiscal autonomy for local authorities; and to build social capital in communities.

1.2 Objectives of CBMS and applicability
The key specific objectives of CBMS are: To diagnose the extent of poverty at the local level, To formulate appropriate plans and programs to address problems, To provide the basis for rational allocation of resources, To identify eligible beneficiaries for targeted programs and to monitor and assess the impact of programs and projects. This paper seeks to demonstrate how these objectives can be integrated into the rural development agenda.

1.3 CBMS and Rural Development Model
As a development strategy, the primary objective of Community Driven Development (CDD) model is to stimulate the types of changes that will promote local development. The primary objective of communities in the CDD strategy is to provide a common base for decision making and action (North, D, 1981). York summarizes the foci of Community Development Theory to include the organization of community agencies, the developing of local competences, and political action for change. Paiva calls the theory’s’ tenets structural change, socioeconomic integration, institutional development, and renewal. Schiele summarizes...
the work of Community Development as collective problem solving, self-help, and empowerment. Pandey refers to the strategies of Community Development as distributive, participative, and human development. Payne refers to it as developing social capital, social inclusion and exclusion, and capacity building (York, Paiva, Sochile, Panday & Panay, cited in Alison, 2009).

The community driven development model is the most suitable framework for enhancing rural development because it is consistent with the philosophy of CBMS. This provides an effective framework for enhancement of rural development and can be easily implemented in the rural development process.

Local communities should be helped to identify their needs and viable solutions. At the same time, they should be encouraged and enabled to contribute to the planning and implementation of the development process (Galston and Baehler, 1995). The relevance of ‘interactive participation’ in rural development is clearly stated by the European Conference on Rural Development, which announces that: “the emphasis must be on participation and a bottom-up approach, which harnesses the creativity and solidarity of rural community, rural development must be local and community-driven”. Rural development policy must be multidisciplinary in concept, and multi-sectorial in application, with a clear territorial dimension (Cork declaration 1996).

The involvement and participation of local community members is paramount for enhancement of rural development, this entails that local people are to be at the center of the local development process.

1. RESEARCH METHODOLOGY

This section discusses the methodology used in this study and how it was applied and implemented in this study. To begin with, it is worth noting that Zambia Research and Development Centre (ZRDC) developed, tested, and implemented CBMS in Zambia. Further, because of the nature of this study, the methodology used in this study is the very one that the proponents of CBMS proposed, developed and refined as stated in the introduction of this paper. This is the same methodology that ZRDC used in the development, testing and implementation.

On account of the fact that CBMS is a census of households and not a population survey, and that it has its established core set of indicators, this makes CBMS to have its unique distinctive methodology which does not in any way violets the principles reliability and validity which are very vital in any research project.

The distinctive features of CBMS are that: It is a census of households and not a sample survey, it is rooted in local government and promotes community participation, it uses local personnel and community volunteers as monitors, it has a core set of simple, well-established indicators and that it establishes data-bank at all geopolitical levels within the country.

CBMS implementation is an Eight-Step Process:

Step 1: Advocacy/organization,
Step 2: Community Capacity Building,
Step 3: Data collection and field editing,
Step 4: Data encoding and map digitization,
Step 5: Processing and mapping,
Step 6: Data validation and community consultation,
Step 7: Knowledge (database) management,
Step 8: Dissemination.

This project was carried out in line with this methodology in about thirty-five Local Administrative Units (councils) across Zambia and set of indicators were formulated for data collection tools (household questionnaires). Focus group discussions were also used in order to authenticate data which was collected using questionnaires.

Below is the summary of the CBMS methodology and its implementation:

Advocacy and organization: Firstly, data requirements were identified and it was clear that there were gaps in information intended for planning and decision making based on the challenges of census and surveys data needs for policy makers in terms of rural planning, implementation and development. It was clear that both census and survey data were not
sufficient, up to data and readily available to policy and decision makers.

As a result, a work plan was developed which detailed the commitments of all parties and involvement of key human resources at all levels, as well as financial and physical for training, data collection, processing, validation, database management and dissemination. Local government units were highly committed and ensured to use the data generated, they provided directives and approved ethical clearance letters for the enumerators.

Data collection: Questionnaires consistent with the core CBMS indicators were developed for households and enumerators were identified and trained to collect data in 35 wards (for this study). These enumerators targeted 100 households in each of the thirty-five wards that were randomly selected. Data was collected through household interviews and focus group discussions were also used for field data validation and verification. Community members were sensitized and participated in this process.

Data encoding and map digitization: Digital Maps and photographs of rural areas or specific location were generated and used to illustrate how community members view their local areas: to indicate what they liked or dislike and suggest improvements they would like to see.

Data from the questionnaires was then encoded and excel data files were built for analysis in statistical tools. Processing and mapping: processing is very vital since the results form the basis for local planning and program implementation. Before processing the results, CBMS data was interrogated for its consistency, accuracy and completeness.

Data validation and community consultation: the results were presented in report form and shared with the local administrative units. Critical results were shared in some community forum showing the extent of poverty in its different dimensions was assessed and discussed, the cause of poverty was diagnosed and discussed and explained, and appropriate interventions were also identified.

Knowledge (database) management: Based on the fact that CBMS regularly collects data unlike census and surveys, it therefore collected so much information and this leads to creation of a databank at all geo-political levels. ZRDC is in the process of setting up a CBMS databank. Formulation of plans: based on the information established through CBMS, it was easier to set up development plan for each local community.

CBMS makes decision making more logical because it is based on empirical evidence, it calls for community involvement, rational allocation of resources and greater transparency and accountability in the development.

The results obtained were digitalized on local maps to show variations among regions. Data validation and community consultation: the results were presented in a community forum where the extent of poverty in its different dimensions was assessed and discussed, the cause of poverty was diagnosed and discussed and explained, and appropriate interventions were also identified.

Knowledge (database) management: Based on the fact that CBMS regularly collects data unlike census and surveys, it collected so much information and this leads to creation of a databank at all geo-political levels. ZRDC is in the process of setting up a CBMS databank.

Formulation of plans: based on the information established through CBMS, it was easier to set up evidence based development plan for each local community. CBMS makes decision making more logical because it is based on empirical evidence, it calls for community involvement, rational allocation of resources and greater transparency and accountability in the development process. These are vital for success of any rural development program.

Dissemination, implementation and monitoring: after data collection, interrogation of data followed and analysis of results was computed using the Data Analysis Software (STATA) thereafter.

Processed results were then interpreted and reports were compiled for each local administrative unit and well as compiling all the findings in one report. The CBMS teams involved in the project reported back to the local administrative units as well as communities.
through fora and some reports were generated and shared with the councils.

The institutionalization of CBMS in local government administrative units will enable researchers to create a reliable and up to date data bank at all geo-political levels in order to help enhance the delivery of rural development projects and programs.

2. RESULTS AND DISCUSSION

3.1. Results / Research Findings
This section presents the results of the study which was undertaken as explained in the methodology, and based on primary data which was collected to test and review the effectiveness of CBMS in Zambian Local Government Units (Councils) in some selected wards as a tool of improving Local Government Administration.

The CBMS methodology was consistently applied as indicated in the research design, this study provides information based on the data which was collected from the 35 wards randomly picked throughout Zambian wards around the year 2013-2016.

Sample demographics: This project collected data from a total of 3,478 households, sample population in the households was 15,957 and based on these statistics, the average household size was found to be 4.59; meaning in each household interviewed, there was an average of about 5 members.

Average household size was low because over 82.28% of the wards were based in urban areas. This project found that the majority of the head of households were male making 71.1% while females made up 28.9% of the sample. It was also evident also that there were slightly more females than males making 50.89% and 49.11% in the households respectively. Below are the aggregated results for diagnosis of poverty situation;

<table>
<thead>
<tr>
<th>Main Profession of the head of households</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>15%</td>
</tr>
<tr>
<td>Trader</td>
<td>21.50%</td>
</tr>
<tr>
<td>Civil Servants</td>
<td>15%</td>
</tr>
<tr>
<td>Private sector employee</td>
<td>31.50%</td>
</tr>
<tr>
<td>Other</td>
<td>17%</td>
</tr>
</tbody>
</table>

Table 1.2 Main profession of the head of households
In this study it was clear that the majority were private sector employees making 31.5% of all the head of households who were interviewed and these included both formal and informal while 15% of the head of households reported that they were civil servant employees.

b) Monthly budgetary allocation for food

<table>
<thead>
<tr>
<th>Monthly budgetary allocation for food by Households</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>K100-300</td>
<td>28%</td>
</tr>
<tr>
<td>K300-500</td>
<td>34%</td>
</tr>
<tr>
<td>K500-1000</td>
<td>29%</td>
</tr>
<tr>
<td>Above K1000</td>
<td>9%</td>
</tr>
</tbody>
</table>

Table 1.2: Monthly budgetary allocation for food

The results showed that majority of households allocated about K300-K500 for food on monthly basis making 34%, 29% of the head of households reported that they allocated between K500-K1000 while 9% of the households had above K1000 allocated for food on monthly basis. These were predominantly in the urban areas while 28% of the households that reported allocating K100-K300 were predominantly in rural areas.

c) Average number of meals per day

<table>
<thead>
<tr>
<th>Average number of meals per day reported by households</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>One meal</td>
<td>1.70%</td>
</tr>
<tr>
<td>Two meals</td>
<td>26%</td>
</tr>
<tr>
<td>Three meals</td>
<td>70.10%</td>
</tr>
<tr>
<td>Four meals</td>
<td>2.30%</td>
</tr>
</tbody>
</table>

Table 1.3: Average numbers of meals per day
The results on the average number of meals per day showed that the majority had three meals per day, making 70.1% of the households interviewed. These were followed by those who reported having two meals per day and these made up 26% of the households. It was also found out that 2.3% of the households had four meals per day and these were predominantly in urban areas while 1.7% reported having one meal per day and these were predominantly from the rural areas.

This information is vital for determination of the magnitude of households affected by poverty and hunger and also for policy makers to target the appropriate beneficiaries when the in certain programs that seek to reduce hunger and poverty in targeted households.

d) Main sources of water for the households

<table>
<thead>
<tr>
<th>Main Sources of water for the households</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>River / Stream</td>
<td>3.60%</td>
</tr>
<tr>
<td>Borehole</td>
<td>18%</td>
</tr>
<tr>
<td>Well</td>
<td>15.30%</td>
</tr>
<tr>
<td>Tap water</td>
<td>63.20%</td>
</tr>
</tbody>
</table>

*Table 1.4: Main sources of water for the households*

When asked to reveal their main source of water, for household consumption, 63.2% of the households reported that they had access to tap water, 18% reported having a borehole, 15.3% reported having a well and 3.6% reported that they accessed their water for consumption from a river or stream.

e) Methods used by households to prevent diseases

<table>
<thead>
<tr>
<th>Methods used by households to prevent diseases</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better hygiene</td>
<td>44.00%</td>
</tr>
<tr>
<td>Boiling water</td>
<td>18%</td>
</tr>
<tr>
<td>Sleeping under a treated mosquito net</td>
<td>24%</td>
</tr>
<tr>
<td>Spraying of mosquitoes</td>
<td>14.00%</td>
</tr>
</tbody>
</table>

*Table 1.5: Methods used by households to prevent diseases*

The figure above shows the results of the methods used by households to prevent diseases. These were the methods used by households as preventive measures to avoid diseases. This information is vital to policy makers for monitoring and evaluation of community programs and determining the effectiveness of community projects as well as determination of projects to be undertaken to address specific needs.

f) Methods of garbage collection

<table>
<thead>
<tr>
<th>Methods of garbage disposal</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pit</td>
<td>64.50%</td>
</tr>
<tr>
<td>Burning</td>
<td>11.50%</td>
</tr>
<tr>
<td>Dumping into drainages</td>
<td>1%</td>
</tr>
<tr>
<td>Road side dumping</td>
<td>3%</td>
</tr>
<tr>
<td>Collected by cobs</td>
<td>20%</td>
</tr>
</tbody>
</table>

*Table 1.6: Methods of garbage disposal used by households*

When asked about the garbage collection methods used by households, 64.5% reported that they were using a pit to bury garbage, 11% reported burning, and 20% reported that their garbage was collected by the cobs. Roadside dumping and dumping into drainages were reported to be 3% and 1% respectively.

To summarize the results obtained this study; facts which were brought to light include the following findings: 70.1% of the households reported having three meals per day, 63.2% had tap water, 57.2% had access to hydro-electricity, 34% allocated K300-500 for food on monthly basis, 32.5% of the head households had tertiary education and 15% were employed by the government.

This information is vital for improving the effectiveness of local government administrative units for purposes of planning, monitoring and evaluation of community project, targeting of the appropriate beneficiaries since CBMS is a census of households and many other uses for that the current local administrative system which are lacking in terms of data needs.

3.2. Discussion and Implication of Findings
Apart from being a tool for improved local governance and greater transparency and accountability in local resource allocation, CBMS also collects data ongoing and recurring data in order to fill information gaps. It is also effective in diagnosing the extent of poverty at the local level, determining the causes of poverty, formulating evidence based policies and programs, identifying eligible program beneficiaries and assessing the impact of policies and programs at local level.

The benefits of institutionalization of CBMS include the empowerment of the local population, improved performance in local government administration, rise in team work and expertise, coordinated future developments, protection of resources, promote healing and reconciliation and creation of economic opportunity.

In theory, the role of the central government and other outside agents should be to inspire local initiatives that improve community welfare (Passmore, 1972). Where there is a lack of up to date, robust information, local authorities should consider commissioning surveys and assessments of rural economic and social conditions and needs, including local housing needs (Planning Policy Statement 7; Government of Britain, 2004).

The participatory approach, is an innovative key element of current rural policies, designed to react to rural underdevelopment. To ensure the effectiveness and relevance of these policies local planning authorities should be aware of the circumstances, needs and priorities of the rural.

3.3 CBMS case studies; achievements and lessons learned

CBMS research work has been undertaken in Burkina Faso, Bangladesh, Cambodia, Nepal, Pakistan, the Philippines, Senegal, Sri Lanka, and Vietnam. However, the extent of CBMS work varies across these countries in terms of level of research development and implementation, methodology, and indicators being monitored (CBMS Network Coordinating team, 2003).

Focusing on basic needs in communities, identifying the poor for socio-economic programs and evaluating their progress and success require reliable information (Vu, 2007). In a commune Lam Dong province, researchers found that only half of the poor households were receiving the credit to which they were entitled under the poverty-alleviation program (Asselin and Vu, 2005).

The lessons from Bangladesh were consistent with those from Philippines and Vietnam. Local authorities also noted that the information gathered helped to identify those who needed to benefit from the public programs such as government issued vulnerable group feeding cards (Guha, 2006).

In Cambodia it was found that, Commune councils needed adequate information gathered in a systematic and reliable way in order to effectively conduct needs assessments, planning, monitoring and evaluation of developmental projects (Sothearith, et al, 2006). In Indonesia, subsequent efforts by the local government proved costly and unsatisfactory largely because of weak methodology and training of personnel (Suryadama et al, 2005).

In Sri Lanka, the project recommended concerted effort to change the status quo with respect to lack of capacity and empowerment within local governments (Hettige, 2005). In Benin, it was noted that the census highlighted great disparities in the communities. This Cotonou’s municipal council took to heart “This survey made it possible for the town council to give this district a real face” (CBMS, 2008).

The case studies provided in this paper provides details of the success attained and reported in various nations that implemented CBMS in order to enhance their local administrative units as well as the lessons learned. From the case studies given, we see that there is consistency in the findings that were reported and it is undoubtedly clear that CBMS managed to successfully enhance the local development processes and there were positive recommendations made in order for it to be institutionalized in the local administrative units.

CONCLUSIONS

This paper has demonstrated the effectiveness of CBMS in diagnosing poverty which is key in the
delivery of rural development; it has demonstrated how CBMS basis is capable of accurately measuring the magnitude of poverty as well as generating up to date information for sustainable rural development planning and decision making. Institutionalization of CBMS in local administrative units enables the creation of a reliable databank at all geo-political levels which is vital for planning and implementation of rural development because it forms the basis for; rational allocation of resources, monitoring and evaluation of community development programs and assessment of their viability, setting priorities. CBMS is a significant tool to revamp the local government administrative system by; building its integrity and credibility and providing transparency and accountability in the local developmental process.

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