

# “An evaluation of South African low-income housing delivery process: from project quality management perspective”

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## An evaluation of South African low-income housing delivery process: from project quality management perspective

### Abstract

In South Africa, citizens have a right to housing. The government of South Africa has endeavored to provide for this right amid many challenges. However, the results of the government's effort in the delivery of houses for the underprivileged are a mix of houses with good quality in terms of workmanship and other houses that are not habitable under any given standards. Who is to blame? Is it the contractors, the professionals, the government officials or the procurement process itself? Apportioning the blame is not the essence of this work. The research intends to review the project management processes and the applicable principles to direct and manage project execution to bring out the key elements that produced the type of unacceptable quality scenarios as seen in many parts of South Africa. The study was conducted in 2011. Findings reveal that the concepts of project quality management were not adequately applied during housing project execution in delivering Reconstruction and Development Program (RDP) houses (or low-income houses) in the area of our focal municipality (i.e. Bushbuckridge Local Municipality). However, in the light of the current obstacles and short comings of the department in delivering quality housing within housing policy framework, the study recommends that the policy directives of both National Home Builders Registration Council (NHBRC) and the Department of Human Settlements' objectives, towards housing delivery processes, should be integrated.

**Keywords:** project management, quality planning and control, housing delivery, South Africa.

**JEL Classification:** O18, R21, R28, R38.

### Introduction

South Africa is historically a racially biased country. The majority of the people in South Africa are still at the receiving end of skewed incomes and development. The notion of rights of citizens remains substantially more a lip service than a reality. Currently, policies are aiming at ensuring that every citizen enjoys the rights as enshrined in the Constitution of the Republic of South Africa. All citizens have a right to shelter. The concept of shelter is synonymous with housing. Therefore, a citizen in South Africa has supposedly a right to housing. The historical factors indicate that the majority of people, especially black Africans, do not enjoy this right. Since the dawn of democracy, the government of South Africa has endeavored to address the abovementioned historical factors, prioritising black communities as beneficiaries of the right to shelter. Despite the government of South Africa's sound and articulated housing policy frameworks, the country has a huge housing backlog and most of the houses built in the process are of low quality and not habitable. Consequently, it has been observed that in our focal municipality (i.e. Bushbuckridge Local Municipality), just as seen in many other municipalities in South Africa, some houses have been demolished or rebuilt because of poor quality of workmanship.

In South Africa, the most of the low cost houses built for the low income group of South Africans or the poor households. Housing departments country-wide have been embroiled in controversies of sub-quality housing products; Reconstruction and Development Program (RDP) houses (or low-income

houses) built lack required standards and fail to meet technical criteria and unsustainable. As such, the project products of the RDP houses are sub-standards reducing the interest of beneficiaries to occupy the houses as the results of the poorly built product. The current state of affairs and tendency is that the construction of the RDP houses does not reflect the urgency in which government policies on housing prioritise these houses. The development of RDP houses are unable to meet basic technical requirements which results in inhabitability because the project product or the house itself is of low standard and or in poor quality condition. When beneficiaries are not satisfied with the standards and conditions of the product, they therefore neglect those houses at the expense of government grants. The study therefore examines the root cause of poor quality of low income houses built for the poor of South Africa, focusing on Bushbuckridge Local Municipality area.

Further, the study aims to evaluate the delivery mechanism of houses and how project management approaches and techniques were applied towards achieving quality performance and quality standards. As such, the theoretical approaches of project quality management as prescribed in the Project Management Body of Knowledge (PMBOK) Guide written by Project Management Institute (2008) are applied in this study, taking into account capacity requirements for implementing project management principles that is its approaches, tools and techniques.

The paper is organized as follows. In section 1, the study provides a brief literature review. Section 2 highlights about Bushbuckridge Local Municipality.

Research methodology and findings are outlined in sections 3 and 4 respectively. Section 5 describes the discussion of findings. Finally the last section provides conclusions and recommendations.

## 1. Literature review

The literature review focuses on theoretical approaches to examining the application of the project quality management approaches and techniques as tools towards housing delivery. Further, the literature review briefly highlights South African and international experience regarding housing delivery implementation.

**1.1. Project quality management (PQM).** Project Management Institute (2008, p. 189) explains in the PMBOK Guide that “project quality management includes the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken”. The project quality management processes include quality plan, perform quality assurance, and perform quality control (Project Management Institute, 2008, p. 189).

*1.1.1. Quality plan.* It is the process of identifying quality requirements and/or standards for the project and product, and documenting how the project will demonstrate, compliance (Project Management Institute, 2008, p. 192). Quality planning “is one of the key facilitating processes during project planning and should be performed regularly and in parallel with other project planning processes” (Project Management Institute, 2008, p. 192).

Project Management for Development (PMDEV, 2008, p. 8) explains further that “the quality plan also describes the conditions which the services and materials must possess in order to satisfy the needs and expectations of the project stakeholders, it describes the situations or conditions that make an output fall below quality standards, this information is used to gain a common understanding among the project team members to help them to identify what is above, and what is below, a quality standard”. The plan also includes the steps required to monitor and control quality and approval process, to make changes to the quality standards and the quality plan. Burke (2009, p. 111) contends that “the project quality plan outlines a quality management system (quality assurance and quality control), designed to guide and enables the project to meet the required condition”. Kerzner (2003, p. 773) states that a good quality plan includes:

- ◆ Identify the organization’s external and internal customers.

- ◆ Cause the design of a process that produces the features desired by the customer.
- ◆ Bring in suppliers early in the process.
- ◆ Cause the organization to be responsive to changing customer needs.
- ◆ Prove that the process is working and that quality goals are being met.

*1.1.2. Perform quality assurance.* Project Management Institute (2008, p. 201) explains that “perform quality assurance is the process of auditing the quality requirement and the results from quality control measurements to ensure appropriate quality standards and operational definitions are used”. According to Kerzner (2003, p. 772), a good quality assurance system will:

- ◆ Identify objectives and standards.
- ◆ Be multifunctional and prevention oriented.
- ◆ Plan for collection and use of data in a cycle of continuous improvement.
- ◆ Plan for the establishment and maintenance of performance measures.
- ◆ Include quality audits.

*1.1.3. Perform quality control.* Quality control “is the process that monitors specific project results to determine if they comply with relevant standards and identifies different approaches to eliminate the causes for the unsatisfactory performance” (PMDEV, 2008, p. 12). Project Management Institute (2008, p.206) explains “perform quality control as a process of monitoring and recording results of executing the quality activities to assess performance and recommend necessary changes”. Clements and Gido (2006, p. 85) explain that project control process must occur regularly throughout the project. Burke (2009, p. 260) states that “quality control is the process which projects and companies go through to confirm the product has reached the required conditions as determined by the specifications and the contract”.

**1.2. International experience.** Ball (1997, cited in Formoso and Jobim, 2006, p. 78) states that as housing markets tend to be very volatile, even in developed countries, house-builders usually have a drive to achieve short-term financial results. In a Brazilian study, Formoso and Jobim (2006, p. 79) indicate that “in Brazil the low performance of the house-building sector has caused much concern for the Federal Government, particularly for the high incidence of building pathologies in social housing whereas there are several causes of the conservative attitude of the house-building sector; some of them related to its specialties, such as spatial fixity, complexity of housing as a product and impact of government policies”.

Based on agreement between government and construction industry associations in Brazil, the construction companies are now required to show that they have achieved a certain level of implementation of quality management systems for obtaining public contracts or loans for housing developments (Formoso and Jobim, 2006, p. 79).

Recently, a Tanzanian study was conducted by Mrema and Mhando with regard to causes of unfinished buildings in Dar es Salaam. In their research paper, Mrema and Mhando (2005, p. 2) contend that “it is important to underline that the primary purpose in resolving housing deficiency must come first before exercising fantasies that do not tally with funding capabilities of owners. It is imperative that transparency is respected and that design is well thought out, and well detailed, in a manner that the owner understands; and is that is fully involved from the beginning to the end, and that he is made aware of the cost he will have to bear”.

**1.3. South African experience.** In South Africa, human settlement or housing for the poor is a significant issue due to the fact that in the past the “colonial and apartheid planning had left an extremely negative legacy in the settlements of South Africa” [United Nations (UN), 2004, p. 2]. In order to address the imbalances of the past with regard to human settlements and create sustainable human settlements, the Department of Housing, between 1994 and 2003, has taken numerous steps to develop policy for low income housing delivery (UN, 2004).

However, since 1994, in order to implement housing projects across the country, “the Department of Housing has taken strides to identify particular issues at local, provincial and national levels affecting housing delivery, with particular reference to the alignment between the housing program and Integrated Development Plans (IDPs), and coordination of the delivery of housing projects with bulk infrastructure funding” (UN, 2004, p. 16).

## 2. Bushbuckridge Local Municipality

Bushbuckridge Local Municipality is predominantly rural located in Mpumalanga Province, South Africa. It is estimated that government has built approximately 6000 RDP houses in Bushbuckridge Local Municipality. The actual or official figures for the number of household or beneficiaries cannot be confirmed. The one reason advanced for the unavailability of accurate information is that the Municipality of Bushbuckridge was for some years administered by Limpopo Province and later transferred to the Mpumalanga Province.

According to Statistics South Africa Census 2001 (cited in Business Trust and DPLG, 2007), total

population of Bushbuckridge is nearly 500,000 and total number of household is approximately 110,000. The percentage of household living below household subsistence level is 85.6% (Business Trust and DPLG, 2007). In terms of employment, the public sector is the single largest employer in the Bushbuckridge area, accounting for approximately 33% of all formal jobs, whereas retail sector also accounts for a major source of employment (Business Trust and DPLG, 2007). In the case of the research study, the population consists of Bushbuckridge residents living at Agincourt, Kumani, MP Stream and Shatale areas. The total number of RDP houses built in these respective communities is 3,100. The houses were built in the financial years 1997, 1998, 2005 and 2006, respectively. Government, through the Department of Human Settlement built a total of 1200 housing units at Kumani and MP Stream in the financial years 2005/2006, whereas at Agincourt only 900 housing units were built in the period of 1997, and 1000 at Shatale in the financial year 1998.

## 3. Research methodology

The study used both the quantitative and qualitative methods. The qualitative approach is used to evaluate the policy implications and the processes applied towards the delivery of the RDP houses in the Bushbuckridge area. “Quantitative research is used to answer questions about relationships among measured variables with the purpose of explaining, predicting, and controlling phenomena” (Leedy and Ormrod, 2001, p. 101). The study then uses project quality management techniques to extract variables to measure consistency of systems and practices applied in the delivery of RDP houses against acceptable standards used in the delivering of quality houses.

The study collected data from documents, personal observations (Gobind and Ukpere, 2012; Uddin and Choudhury, 2008), questionnaires, and semi structured interviews with a typical sample size of both the individuals of the community, administrators of the Department of Human Settlement and National Home Builders Registration Council (NHBRC). For data process and procedures, the study used five types of questions such as open-ended questions, multiple-choice questions, checklist questions, rating questions, and ranking questions. During the interviews, a set of complied questions with brief background for conducting the research study was presented to the respondents. Participants were allowed to freely express their experience about the RDP houses, their opinion about the process and the system employed in the delivery of the RDP houses.

As indicated earlier that four communities were chosen for the research study: Kumani, Agincourt,

Shatale, and MP Stream. The participants (beneficiaries) of all four projects do not have any technical skills relevant to project quality management. As such, participants (beneficiaries) were only expected to express their belief towards the quality of RDP houses they have occupied, feelings, and convictions, rather than any interpretation or speculative explanation.

Both simple random sampling and stratified random sampling approaches were used for the sample selection. At Bushbuckridge Local Municipality, total 6000 RDP houses were built by both Limpopo and Mpumalanga Provinces in which the four communities selected have benefited from a total number of 3,100 RDP houses. For purposes of this study, it was decided that approximately 50% sampling minimum of the total household would be studied. A sample of 1,550 was therefore selected randomly from the resident household population of 3,100 households. Finally, a total of 1500 questionnaires were distributed to the respondents. Whilst Bushbuckridge Local Municipality received a total of 50 questionnaires, 60 questionnaires were distributed to the Department of Human Settlement, 100 questionnaires were distributed to NHBRC. The remaining 1,290 questionnaires were distributed among community stakeholders that included beneficiaries, contractors, and community leaders. Total response rate of the study was 70%.

Amongst the respondents who participated were the Member of the Executive Council (MEC), Head of Department (HOD), both the Chief Director responsible for the en-suite housing program, and the Chief Director for the RDP housing program. Subordinates of both the senior managers including housing inspectors of each program were interviewed as well. Four directors and their subordinates also took part

in the interview. The subordinates included individual inspectors responsible for quality standards and assurances per unit house. The researchers interviewed contractors or developers involved in the projects, the procurement section of the department and the legal section as well as the technical and planning section since all are stakeholders who have a significant role in the housing delivery program. The researchers also conducted an interview with Technical Director for the Bushbuckridge Local Municipality and councilors of the municipality, some of whom opted to remain anonymous whilst others gave information without any prejudice. Legal and non-legal occupants of the houses were also interviewed.

#### 4. Findings

This section shows an analysis of how each question was approached to the satisfaction of the respondents and the responses expressing the views of individual communities and stakeholders.

Question 1 (using a rating 0 to 5, where 0 = is not considered at all and 5 = highly considered) provides measure of extent to which the following quality management concepts were applied (refer to Figure 1). From the analysis of the respondents, both government officials and stakeholders of the four communities agreed that the application of the quality management concepts is not adequate. The total average score of all the communities ranged between 1 and 2 against the maximum of 5 which was highly considered. Scores 1 and 2 represented ‘least considered’ and ‘considered’ respectively. This result reflects challenges in terms of the standard practice and application of concepts as may be determined in project management practices.

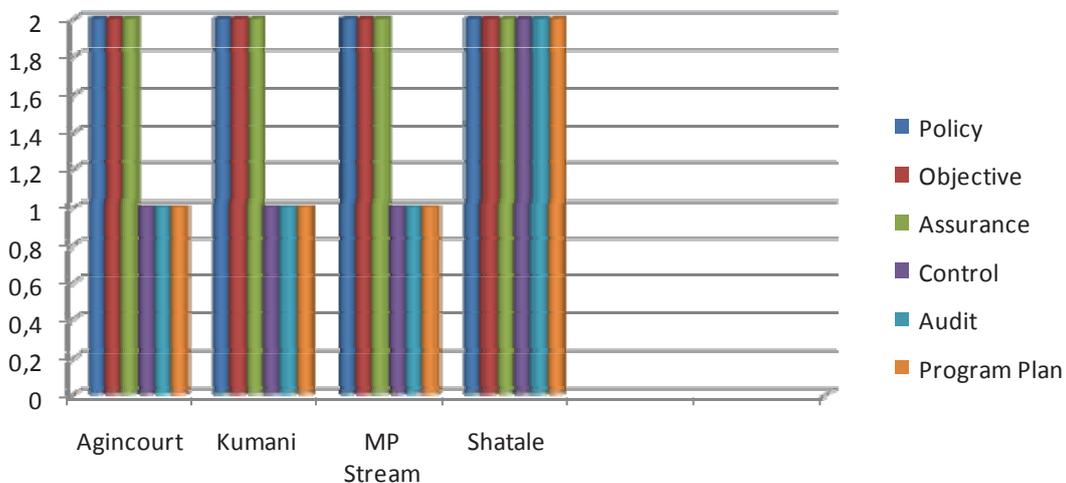


Fig. 1. Quality management concepts

Figure 1 illustrates how quality management concepts were applied in all four community projects. The researchers' interpretations of these results are that during the planning period in all four housing projects of the communities of Agincourt, Kumani, MP Stream and Shatale, the department failed to apply project quality management principles and processes. This failure compromised quality, increased risks and produced cost overruns and delayed project delivery to the beneficiaries.

The next question (question 2) was related to the mechanisms used to monitor and implement projects. Respondents were asked to list and rate the extent to which the following mechanisms were applied in each project, using 1-5 rating, where 1 = not apply and 5 = definitely apply: (1) project performance and reporting system; (2) monitoring project performance; (3) monitoring risk; (4) reporting project status; (5) processing scope change requests.

Project monitoring and implementation relate to the ongoing work of the project, which must meet delivery performance indicators and/or project milestones. The monitoring and implementation mechanisms must be applied to ensure that project

activities, both internal to the project team and external to the project sponsor, are applied according to technical standard expectations. Project Management Institute (2008, p. 60) explains that "monitor and control project work is the process of tracking, reviewing, and regulating the progress to meet the performance objectives defined in the project management plan, whereas monitoring includes status reporting, progress measurement, and forecasting". The Department of Human Settlement in Mpumalanga Province agrees to the application of monitoring mechanism as a process that assists the project to be implemented according to the project plan. Figure 2 illustrates how monitoring and implementation mechanisms were applied in each project during construction phases. The Department of Human Settlement was the respondent to this question.

Figure 2 demonstrates lack of, or inadequate, project monitoring and implementation processes, which could result in a compromised product of a project. This process group is the measure that contributes to project success if applied according to project deliverable plan.

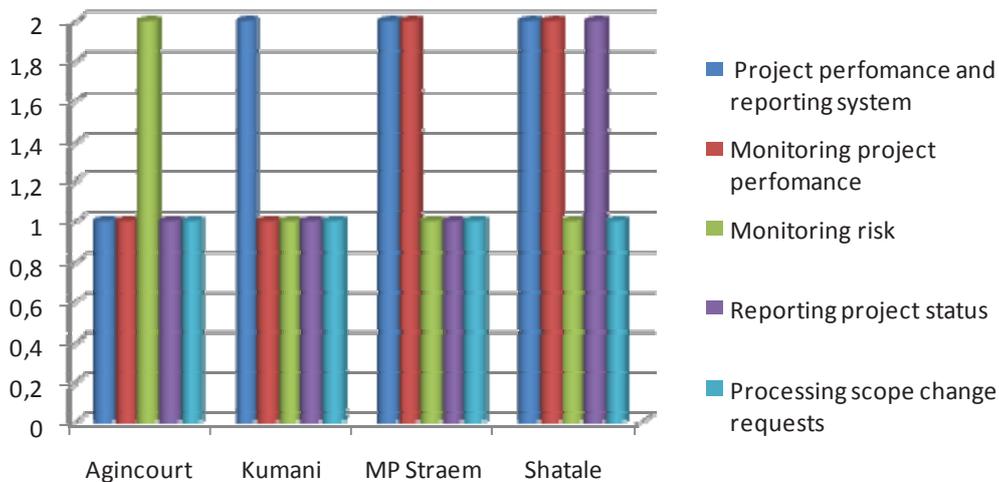


Fig. 2. Monitoring and implementation mechanisms

The following question (question 3) identified other monitoring mechanisms, if any that were applied during the implementation of the four projects. Respondents were required to rate between 1-5, where 1 = very dissatisfied and 5 = very satisfied. The Department of Human Settlement officials at senior management levels were the respondents to this question. Figure 3 shows other monitoring and control risks mechanisms applied during implementation phases of each of the four projects. The following monitoring and control risks processes were applied to identify other monitoring and control

risks mechanisms: (1) earned value; (2) program metrics; (3) schedule performance monitoring; (4) technical performance measurement.

Figure 3 indicates a complete or inadequate application of project monitoring and control risks processes during the execution of each project. The study can conclude that little consideration are done to apply project monitoring and control risks, taking into consideration the different responses that the department submitted in terms of individual responses.

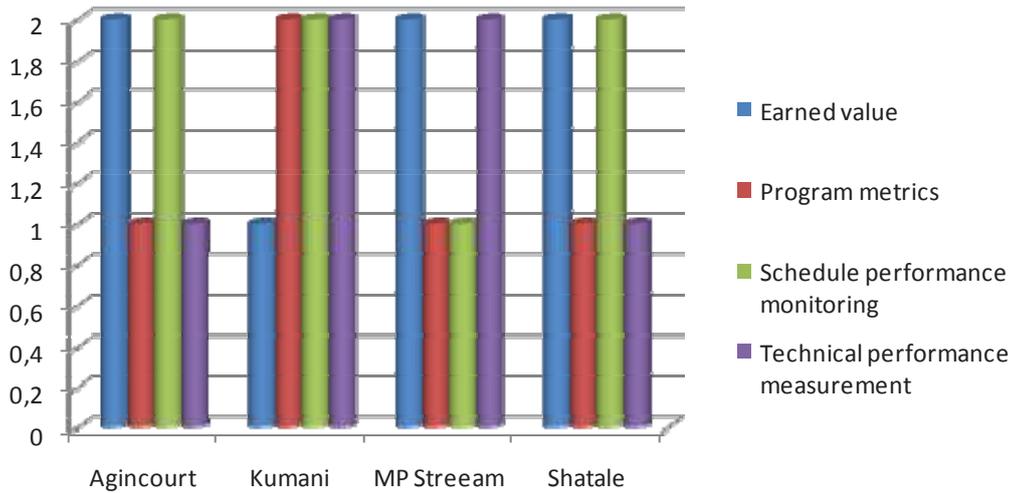


Fig. 3. Other monitoring and control risks mechanisms

Question 4 was related to application or use of quality policies objectives by both Department of Human Settlement and Bushbuckridge Local Municipality. Respondents were asked to rank the frequency, using a scale 1-5, where 1 = minimum and 5 = maximum. Figure 4 illustrates how both government (Department of Human Settlement) and Bushbuckridge Local Municipality applies the following quality policies objectives in housing projects: (1)

regulatory requirements (2) project planning; (3) product design; (4) process control.

Figure 4 implies that the department inconsistently applied quality measures in all the phases or the life cycle of any given project. This finding concludes that if less regulatory requirements are applied, the product of that specific project is likely to be of poor quality, more especially if planning matters are not taken into account.

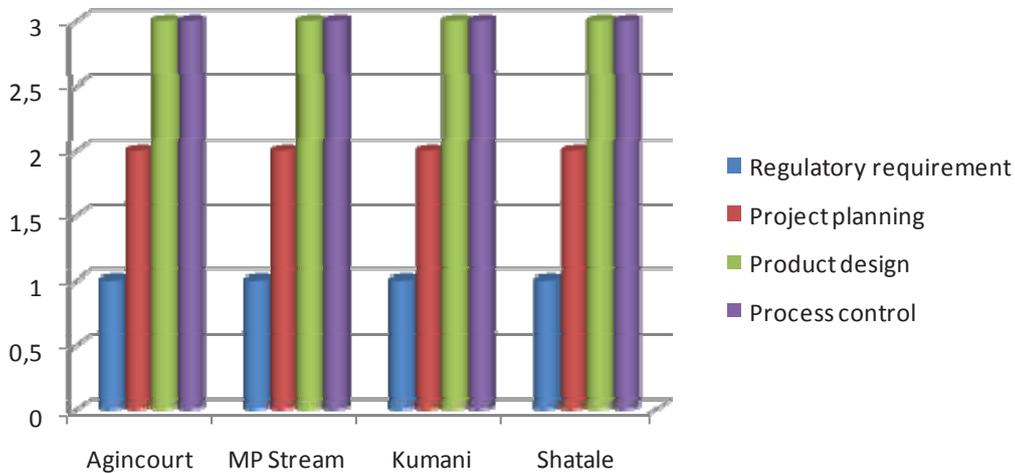


Fig. 4. Quality policy measures

The next question (question 5) aimed to find out the extent to which government (Department of Human Settlement) and Bushbuckridge Local Municipality use quality control measures in implementing housing projects, using a rank between 1-5, where 1 = minimum and 5 = maximum. Figure 5 below illustrates how government and municipalities have used control measures during housing projects implementations. The control measures which were

used to measure the quality control of the housing projects are scope, costs, and time.

Figure 5 implies that minimum measures were taken to control the project scope, costs and time. However, it should be noted that since budgets are fixed, the department does have some measures of control despite the fact that the issue of time was not a factor for consideration.

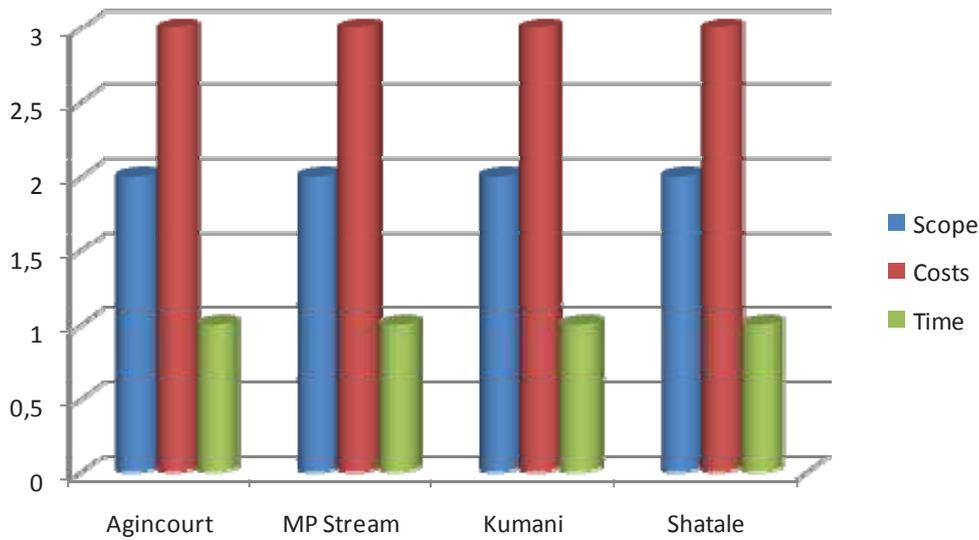


Fig. 5. Quality control measures

Both Department of Human Settlement and beneficiaries of the houses, in question 6, were asked to rate the quality outcome using 1-5 rating for each project, where 1 = very dissatisfied and 5 = very satisfied. Figure 6 illustrates respondents used their own judgment to rate the individual housing projects.

Figure 6 clearly indicates how beneficiaries on the one hand appreciate the value of the houses government built for them, whereas the department feels positive that it is necessary to continue with housing the needy and the poor, irrespective of the fact that these houses are of inferior quality.

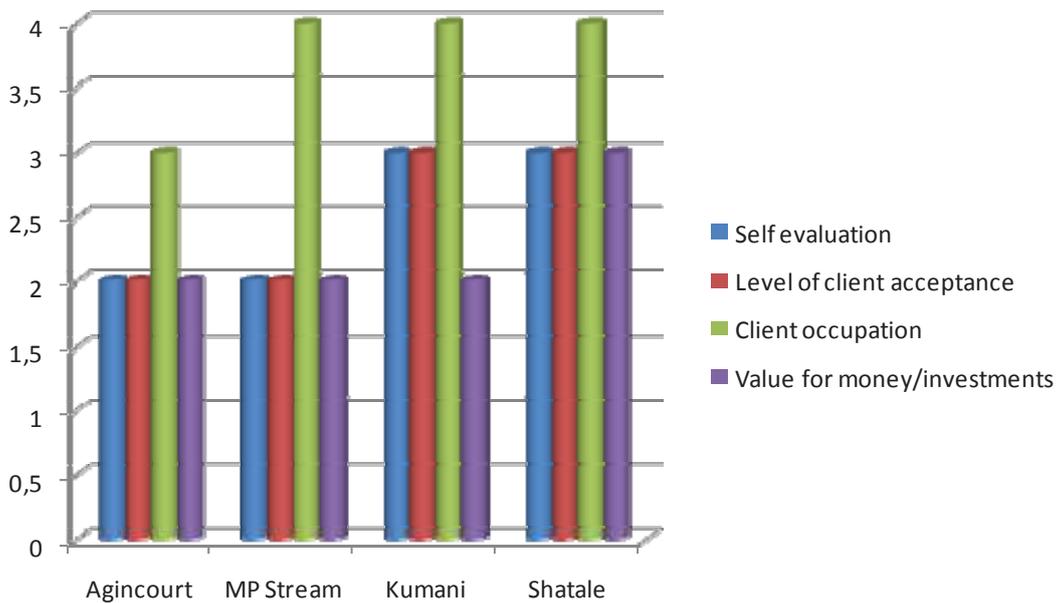


Fig. 6. Quality judgment by individual

Question 7 indicates, by rating from 1-5, the stakeholders including beneficiaries and developers involvement in drawing up quality implementation plans, where 1 = not involved and 5 = highly involved. Figure 7 indicates how different stakeholders were involved in the delivery of the four community projects. NHBRC, the custodian

of technical specifications, reflect a lack of, or inadequate, involvement in the projects: there was no implementation plan designed to execute the projects and no resources allocated to either monitor or audit project progress. This contributed towards cheap labor and inferior product of the projects.

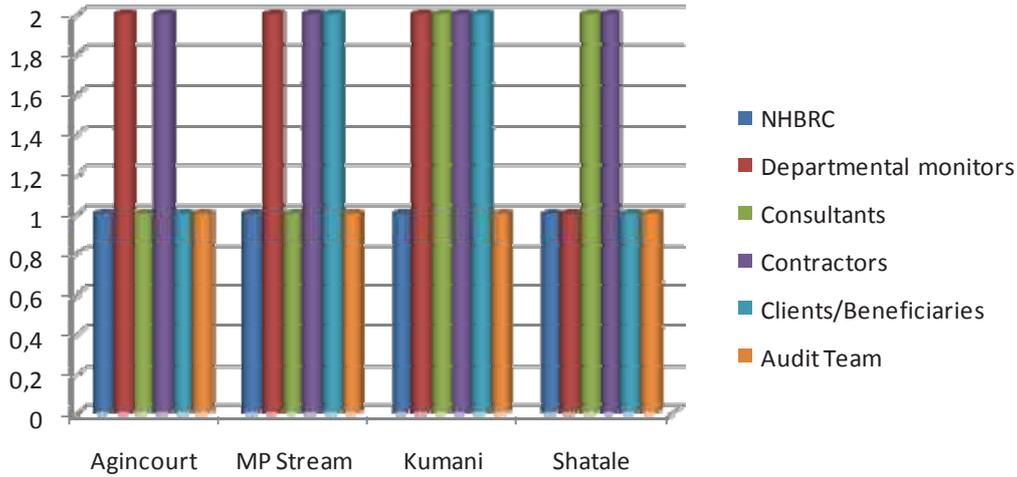


Fig. 7. Stakeholders' involvement in implementation plan

The Housing Act requires that each project must comply with some conditions to meet the prescription of the Housing Act before project implementation. The followings are some of the conditions that must be met before the project starts. In question 8, respondents were required to rate from 1-5, where 1 = not satisfied and 5 = mostly satisfied. The respondents included Bushbuckridge Local Municipality, beneficiaries, project managers of the department, and the developers. Figure 8 illustrates each of the four project compliances to the following conditions and requirements: (1) NHBRC registration;

(2) geotechnical report/s; (3) national norms and standards. Figure 8 shows the score rate is 1 which is not satisfied. It explains clearly the factors contributing towards poor quality projects. It further demonstrates the level of involvement of such an important institution of government as the NHBRC in ensuring that housing projects comply with the technical specifications as provided for in the provisions of the Housing Act. From the Figure 8, the study observed a lack of involvement of the NHBRC to help the Department of Human Settlement to deliver quality products.

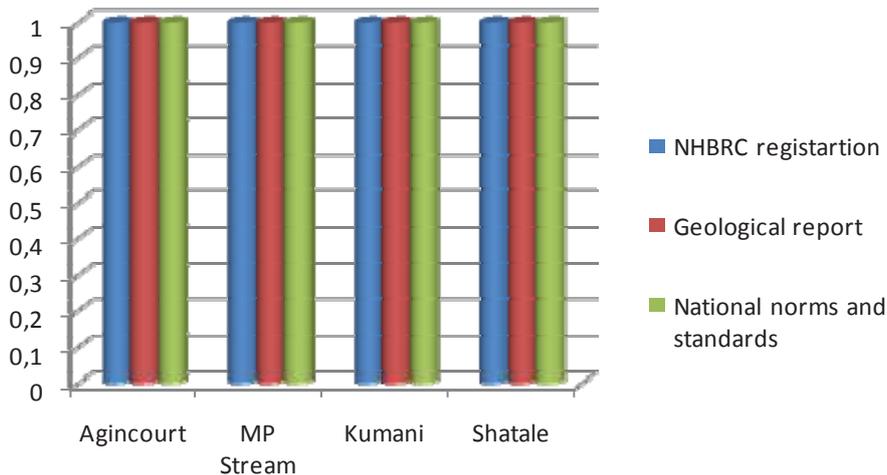


Fig. 8. Project compliances

In the next question (question 9), respondents were requested to give their opinion (Yes or No) whether the RDP housing projects worth the intended investment for both the government and beneficiaries. All respondents indicated “yes” answer.

In the follow up question (question 9.1) respondents were asked to express their opinion. If yes, “how” and

if no, “why?” All respondents, i.e. both government and beneficiaries, conceded that the houses built are assets with positive value since RDP houses are built for the poor who don't have a shelter, although there is challenge in that houses are sometimes abandoned, either because the beneficiary cannot see the future value it holds for him or her, or fac-

tors relating to family networks or proximity to job opportunity areas which contribute towards people staying in, or leaving, their RDP houses.

In the last question (question 10) respondents were allowed to provide some recommendations in terms of both government and communities contributing towards all phases of planning, implementation and maintenance. Most of the respondents agreed that there is a significant need to identify synergy in planning, implementation and maintenance. The respondents contend that the housing program is aimed, amongst other issues, at creating an enabling environment in which the state supports and facilitates the delivery of housing by private sector or by community based organization; meaning that involving both market and people-driven process of production will secure jobs for the beneficiaries, as well as create a sense of ownership amongst the people.

## 5. Discussions of results

**5.1. Quality planning.** “Quality planning involves identifying which quality standards are relevant to the project and determining how to satisfy them” (Project Management Institute, 2008, p. 189). From the analysis, the study concludes that the project team did not produce conditions of satisfaction, and that the project management plan describing inter alia, how tools and techniques in the project life cycle would be applied in each project phase, and defining how work would be executed, had not been applied in accordance with the applicable rules in order to achieve project output of good quality and high standards. Figure 1 reflects the project objectives, application of the perform assurance processes, and the application of perform quality control and quality audit. The average score in terms of the findings is less than 2. This is a threat to a product that is expected to accommodate permanent residents of a property, a threat to the investment committed by government. Further, the application of quality policy by top management is below expectation, as it fell below the acceptable standard expectations. Refer to Figure 4, the total average score in all the four communities is between 1 and 2 which is not adequate, representing substandard outcomes and is far below the standard expectation of a quality house built according to policy expectation and requirements. The findings reveal that the objective to deliver houses is defeated from the onsets, which include the outlining of the institutional structural relationships in the housing sector with a view to pointing out the cause of poor houses or sub-quality RDP houses delivered due to poor application of project quality management tools and techniques.

**5.2. Quality control.** From the analysis of the results found in the projects of the four communities, in terms of compliance with standards expectations and the processes applied to eliminate causes of unsatisfactory results, the study concludes that the cost and budgetary process in all the projects did require close monitoring or control. However, these types of projects usually come with fixed budgets. The fact that budgets are fixed to the number of units allocated to an individual contractor suggests that all developers individually signed and/or entered into the contract period based on a fixed contract amount. There seems not to be any relationship between the department’s project monitoring and control in relation to purchases of material or even any standard requirement definition of material standards, as may be required for the building of such houses; hence developers in the majority of these houses tended to use poor quality, materials or low standard which resulted in houses of inferior quality.

Other indications are that inspectors of the department did not apply processes such as measuring, examining and testing of foundations, as expected to assist project conformity standard requirements. The evidence presented indicates further that monitoring processes of ‘Monitor and Control Project Work’ were not used or applied during the implementation phases of the four projects. As a result, cost, schedule, scope, resources, quality, and risk are evident where the final product is of poor quality.

**5.3. Quality assurance.** Despite a positive showing of Figure 1 in terms of quality assurance results, in that all the projects show a total average score of 2, these results are not acceptable. Evidence reveals that the majority of these houses showed defects during construction, whereas further evidence showed leaks and roofs that disintegrated. The evidence from the research further indicates that no audits were conducted previously on similar projects which would have assisted in improved quality of the project for the added benefits to the project stakeholders. The lack of project quality audits potentially leads to compromise of quality of the product of the projects which could have been avoided had quality audits been applied.

**5.4. Project monitoring, implementation and control risk procedures.** The project quality management literature encourages monitoring and control during project implementation phases. The research indicates that the application of project performance and reporting systems reached a maximum score of 2 against 5 (Figure 2) only in the communities of Kumani, MP Stream and Shatale. Regarding monitoring project performance, Figure 2 reveals that Agincourt and Kumani scored the low-

est rates compared to MP Stream and Shatale. In terms of monitoring risks throughout all projects (refer to Figure 2), the research reveals that all projects were not adequately monitored to avert risks factors; as such, projects were completed with defects or cracks, to mention the least.

The evidence presented in Figure 3 reveals that Agincourt, MP Stream and Shatale have earned value a score of 2. The schedule performance monitoring score was high to the projects of Agincourt, Kumani and Shatale compared to MP Stream. Technical performance measurements were only applied in the projects of Kumani and MP Stream, and the Kumani project team also considered the application of program metrics during project implementations. The evidence provides elements of inconsistency in terms of project quality management processes. It displays a lack of managerial skills from the project team, which contributed to the low quality of houses built in the communities of Bushbuckridge Local Municipality area.

### Conclusions and recommendations

The study investigated the application of project management approaches and techniques as tools in housing delivery process in Bushbuckridge Local Municipality (a South African local municipality) area that consists of four communities such as Agincourt, Kumani, MP Stream and Shatale.

The findings reveal that, because of less regulatory requirements and project planning application, the houses are normally of poor quality, or such products are of dubious nature in that occupation becomes a subjective matter rather than an objective practice on the side of the beneficiaries. A typical example is that some houses have been built in water locked areas, which defeats the quality policy objective of the Department. There is evidence that in both Agincourt and Shatale communities, a number of houses have been abandoned as results of their locality and that the product quality is of a dubious quality or nature. Further to the supporting evidence, is the lack of project planning which results in projects started and completed without the beneficiaries knowledge, let alone the knowledge of community leaders; which results in houses being built in areas not suitable for such infrastructure. The lack of community consultation which finally leads to completed housing projects being abandoned as a result of such houses being of poor quality, and/or as result of substandard houses. These

above factors reveal a project management system which lacks the basic application capabilities of the tools and techniques of quality policy objectives in achieving a quality product of a project beneficial to the intended stakeholders.

Housing delivery is an involvement of stakeholders such as the NHBRC, departmental monitors, consultants, contractors, clients/beneficiaries, and the audit team from the department. In terms of the stakeholders' involvement, government, beneficiaries, developers, and NHBRC must be involved in the planning, execution, monitoring and controlling, and project closure processes, so that the quality of a product of a project meets the expected specification in terms of the project plan. Sanghera (2010, p. 306) points out that "Monitor and Control Project Work is a high-level process for monitoring and controlling project process to ensure that the project is on its way to meet its objectives laid out in the project management plan". The research reveals that the beneficiaries, developers, and Bushbuckridge Local Municipality management were not involved adequately in the planning, execution, monitoring and controlling processes. The research also reveals that all four projects had been built without NHBRC's consent whereas NHBRC which is the custodian of technical specifications across housing projects; indicating a complete lack of involvement. Evidence also reveals that all the four projects failed to comply with the norms and standards prescribed by the Housing Act. It appears that government has not, in any way up to now, demonstrated any real intention to research whether housing policies are achieving its own objectives for alleviation of poverty for the beneficiaries. This creates a situation whereby the poor remain poor even after the house asset has been allocated.

The experience gained in this study may be used by future project managers in defining the basis of "quality" in terms of quality planning, quality assurance and quality control approaches, and tools and techniques in the housing delivery. These approaches are fundamental and basic to achieve high quality standards in project implementation and delivery of the project product. Failure to adhere to these basic project management approaches and standards significantly impacts negatively on project techniques and tools to achieve the goals and objectives of quality policy, quality objectives, quality planning, quality assurance, and quality control.

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