

Improvement Initiatives to Benefit Rural Communities in Pottery Making

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Abstract

Mintek's Small Scale Mining and Beneficiation division supports government's initiative to alleviate poverty and create employment by providing skills to previously disadvantaged communities. The division uses Mintek's high-technology facilities and resources to support small, medium and micro enterprises in mining, extraction and value addition to minerals through beneficiation. This paper outlines the operations conducted in setting up of pottery projects especially in rural areas. Key activities include sourcing of funds, project scheduling, infrastructure development and management of funds. An average of ten to twenty people will be employed per project through this initiative.

Keywords: Beneficiation, pottery project and rural development.

Introduction

South Africa is faced with a challenge of helping poorer communities to alleviate poverty and unemployment through programmes which will equip them with skills. Mineral endowment on its own is not enough if it cannot be converted into any competitive advantage. Government through Department of Mineral Resources has identified some cross cutting constraints such as limited access to raw materials, shortage of critical infrastructure, limited exposure to research and development, inadequate skills and limited access to markets. (Parliamentary Monitory Group, 2013)

Mintek's Small Scale Mining and Beneficiation division

Mintek is a Science Council enacted by an act of parliament; Mineral Technology Act, No. 30 of 1989. One of the strategic objectives of Mintek is to play a significant role in second economy interventions, by developing technologies appropriate to the local jewellery, artisanal and small scale mining industries. The aim is to expand the mineral industry, lower entry barriers, initiate poverty alleviation programmes and support the growth of small, medium and micro enterprises (SMMEs) in the sector. (Paul, 2011)

Mintek's Small Scale Mining and Beneficiation (SSMB) division uses high technology facilities and resources to conduct research related to poverty alleviation programs. The division has set up the Timbita Pottery Incubator to assist previously disadvantaged communities with skills to manufacture pottery.

Objective

The objective of setting up pottery projects in rural communities is to create employment through beneficiation programmes

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Deliverables

The following are key deliverables:

- Employment creation
- Identification of minerals / raw material with economic potential or potential for sustainable community projects
- Providing groups with quality pottery equipment that is suitable for the manufacture of a variety of products
- Be able to operate the supplied equipment correctly and safely
- Be competent to manufacture saleable pottery products and
- Be able to control quality processes.

Methodology

A literature review was undertaken to develop a deeper understanding of the rural pottery in South Africa and project management processes.

Mintek personnel participated in site visits to different rural villages in South African provinces such as Kwa-zulu Natal, Limpopo and Eastern Cape to interview community members or potters about their knowledge of forming traditional pottery. Meetings with the potters were planned in advance, and interpreter was co-opted to facilitate communication, particularly through interpretation and understanding of local customs. All the interviews were conducted at the local municipality offices. In some cases approval has to be sought from local Chiefs where traditional customs are still observed. As authorities they are also interested in both preservation of custom and economic development for communities that they lead.

Data gathered during the initial interviews assisted in learning about different pottery making techniques used by potters. The questionnaires were designed by Mintek personnel to capture the following data:-

- Personal details of the potters, their family background, and living circumstances
- Types of pots made, their purposes, and prices
- Techniques used for making and firing pots, and problems experienced
- Number of pots made and sold, to whom they were sold, and production capacity
- Details with respect to clay and other resources required for pot making
- Issues relating to marketing and selling pots, as well as thoughts on traditions and new products

In addition, meetings were held with potential funders to find out their requirement to apply for funding of pottery projects. The project manager requests equipment quotations from reputable suppliers. Then equipment is procured in accordance with the commercial procedures. Discussions are then held with the municipality to secure a building to be used as a pottery workshop. The contractor is appointed to renovate the building based on safety and practical considerations. Ceramic trainers and marketing personnel research about the easy method of training potters.

The project management processes of (Project insight, n.d.) initiation, planning, execution, monitoring, controlling and closure were applied to improve the skills of rural potters to form good quality pottery, fundamentals of running a small business, setting up of pottery workshop and marketing of products.

Results

Literature Review on Rural Pottery

Pottery

History shows that South Africa (Ceramics and African art, n.d.) and the rest of the African continent have always turned to pottery for their utilitarian needs in cooking, storing food items, eating, drinking, and as ritual vessels. Over time, South African tribes learned to decorate their pottery items with motifs that blend in with their homes and tribal patterns.

African pottery has always used raw materials easily found in the environment like clay. Clay is found in abundance everywhere on the African continent and South Africa is no different. Most potters in villages were women because they were the ones who needed the pots for cooking and for their homes. When the potters were men, they only did it for ceremonial vessels. Furthermore, women potters were not allowed to decorate their pots and utensils with animal or human figures. This is because these figures were generally reserved as art done by men potters.

As the European settlers arrived, there was a shift in the design and artwork as well as in the involvement of men in pottery. Now that it was a money-making venture because of the growing demand from foreign settlers and their visitors, men potters began to increase, and it became a means of trade.

Pottery Techniques

In most tribal villages, the art of pottery and the products produced had to have ancestral approval. This meant that potters were not allowed to venture away from what were the general acceptable standards in design, artwork, and use.

The techniques used were handed down from older generations. These were simple and hand-made. Before the settlers arrived, no such pottery equipment was known. Potters would collect clay from river beds and termite pits. They would clean the clay of impurities and grind it to a fine dust. With a mix of water and sand, they were able to come up with good consistency for forming objects.

Some of the techniques used were coiling and scraping. The tools were anything easily available like plastic, wood, mussel shells, small stones, leather, cotton fabric, and lids for the base turntable. To create colour, natural materials were used like ochre, graphite, and chalk which were either rubbed or painted on the surface. Sometimes, hair, twigs, and bones were used to decorate the pots. For instance, the Pedi or Sotho tribe potters would use combs to create patterns while the potters from the Zulu tribe in KwaZulu-Natal would use a small nodule.

The firing techniques would also be different. Zulu potters would use aloe leaves and reduce exposure to oxygen to blacken their pots. For a shiny effect, they would brush vegetable fat or juice on the object prior to firing.

Field Visit

The objective of the field visits is to gain an understanding of the area, collect clay samples to be tested, where it is mined, to be introduced to the community groups who are potential beneficiaries.

The findings from interviews conducted were recorded and where applicable additional information was collected telephonically at a later stage. The findings from the field visit were as follows:

- In rural areas most people are unemployed and depend on social grants for a living.
- Old or traditional methods are still used to form pottery.
- Local clay is used as a raw material to form products.

- Pottery pots are used for cooking, storing food and beer.
- Potters produce few products because most of the products formed crack after firing.
- Products are sold for local users.
- Potters don't know about marketing of products.
- The rural potters in most cases do not have any formal education and cannot read or write

Based on the above findings Mintek through its SSMB division committed to assist beneficiaries by managing projects from initiation to closure. This is done through the following main interventions:

- Research and feasibility studies
- Securing and sourcing funding options
- Training and technical support
- Marketing

The following section highlights the process followed in implementing a pottery project.

Project Initiation

The project initiation phase is the critical phase within the project life-cycle. To successfully initiate a project, you need to clarify which basic steps are required to carry out to develop a business case, undertake a feasibility study, develop a project charter, and assign project team, project review. (Project Management Association, n.d.).

Mintek personnel compile a detailed business plan for the group which specifies the project vision, goals & objectives, scope & boundaries, deliverables & expectations, project organization and an implementation plan. The basic equipment and services required to set up a pottery project are listed in table 1 (Van Niekerk, A, 2014)

Planning

Project planning is part of project management, which relates to the use of schedules such as Gantt charts to plan and subsequently report progress within the project environment. The project schedule should reflect all of the work associated with delivering the project on time. Without a full and complete schedule the project manager will be unable to communicate the complete effort, in terms of cost and resources, necessary to deliver the project. (Project insight, n.d.)

A Gantt chart (Smith C) is used to outline all the tasks involved in a project and their order will be shown against a timescale. This gives you an instant overview of a project, its associated tasks and when these need to be finished. The figure 2 indicates the Gantt outlining all tasks involved. The approach that will be adopted to undertake the proposed project will include the following:

- Inform beneficiaries about the project objective
- Obtain quotes from different suppliers
- Site visit, assess the condition of the building
- Draw safety plan
- Learning material ordering
- Arrange with suppliers to purchase equipment
- Purchase raw material
- Purchase training consumables
- Facilitator preparing for training
- Ordering and delivery of PPE
- Equipment delivery
- Commission of plant
- Testing equipment

- Conduct training and technical assistance

Table 1. Equipment and services

Activity	Description
Equipment	Furnace, bats, set of props, blunger, pottery wheels, decorating wheels, bats, tools
Delivery	Transport of equipment
Raw materials for three month's production	Clays and glazes
Personal Protective Equipment (PPE)	Safety boots
	Safety glasses
	Overalls
	Dust masks (boxes)
Working capital	Beneficiaries working capital for three months
Incentives	Stipends for trainees (3 months)
Marketing	Brochures
	Marketing research
Commissioning of plant	Commissioning
Training by Mintek	Pottery training
	Quality training
	Safety training
	Business training
Travel	Return trips
	Facilitator accommodation (days)
Assistance	Project administration and technical assistance for six months

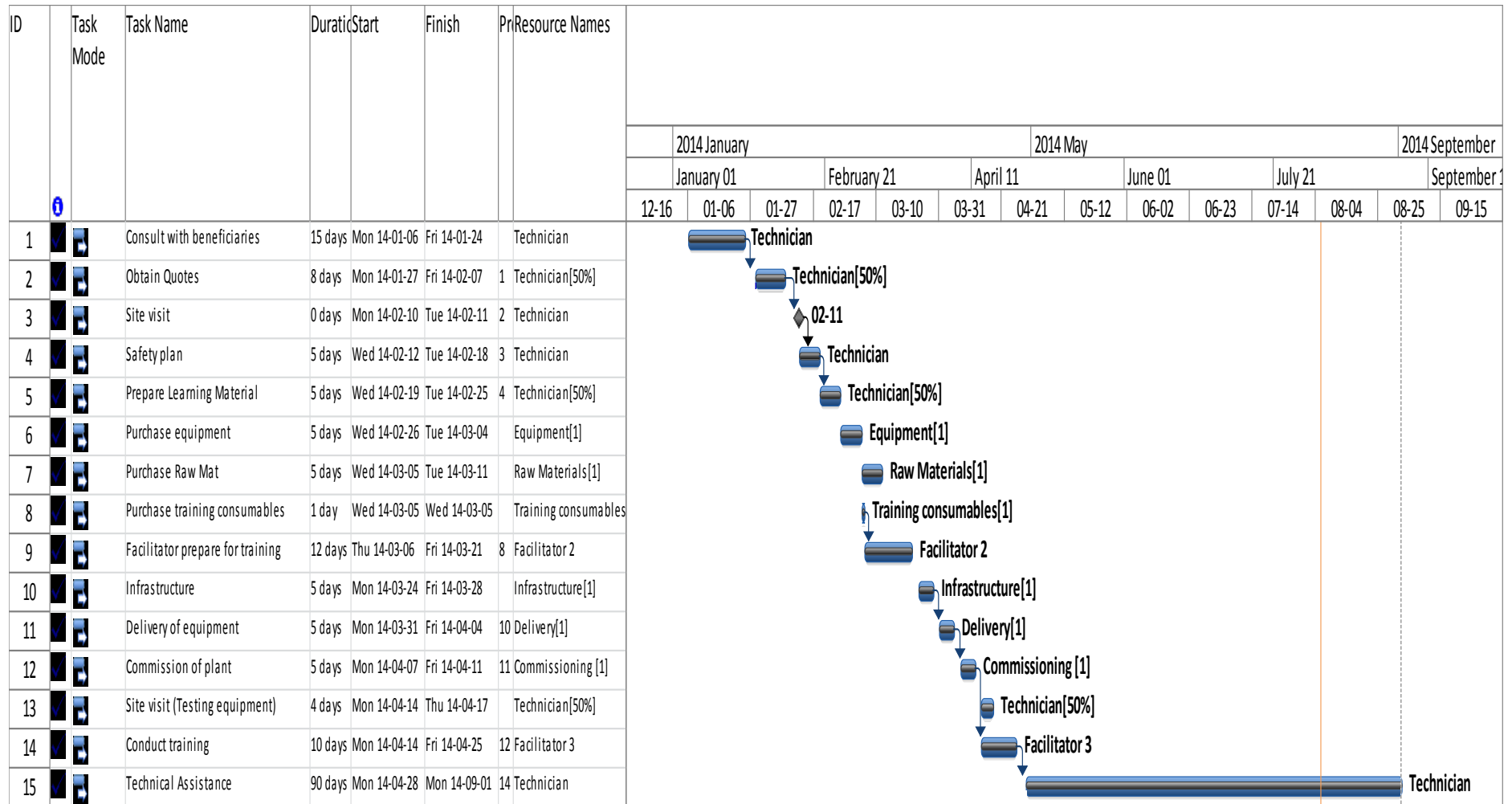


Figure 1. Gantt chart for pottery project

Execution

This is a critical phase to ensure that the project plan is put into action. In order to achieve positive outcomes the following activities are carried out in consultation with different stakeholders such as beneficiaries, local economic development officers, local government officials and Mintek personnel.

Identifying appropriate facility

When funds are available the infrastructure will be developed (which often involves securing a building and ensuring that it is in a good safe condition, establishing access to water and electricity). Equipment and raw materials will also be purchased. After commissioning of the workshop pottery training will commence.

Safety induction

Before any practical work will commence, learners will be educated about:

- The dangers of fine clays and the safety measures that have to be in place
- The safe use and handling of pottery equipment and
- Proper utilisation of PPE

Technical training

During training students will be involved in group activities. The course breakdown is seventy percent (70%) practical and thirty percent (30%) theoretical. The training program covers the following activities:

- Identification and preparation of materials, tools and equipment for craft production
- Manufacture of marketable craft products
- Producing sequences of the same craft product and
- Review and finishing of craft products for a market

Control

The monitoring and controlling process oversees all the tasks and metrics necessary to ensure that the approved and authorized project is within scope, on time, and on budget so that the project proceeds with minimal risk. This process involves comparing actual performance with planned performance and taking corrective action to yield the desired outcome when significant differences exist. Monitoring and Controlling process is continuously performed throughout the life of the project. (Best Practices, n.d.)

The funds are transferred into Mintek's account and managed by a project investigator. The project investigator ensures that activities planned are done on time and monitors the progress. For example, equipment must be delivered on time, appropriate raw materials purchased and learners are informed about training dates. Progress reports are written and submitted to funders. Technical assistance will be provided for a period of six months to ensure that the correct procedures are followed, technology transfer is continuous and safety requirements are adhered. Technical assistance deliverables include the project administration, regular visits to the site to monitor quality of work and giving feedback on markets i.e. popular products currently in demand.

Quality control processes

The beneficiaries will be taught that after manufacturing the quality of the product should be assessed and they should consider the following:

- Does the piece have a pleasing shape?
- Are the shapes, decoration, clay type and size of the product adapted to its function?
- Is the product well manufactured and finished?

In addition, when producing products they had to do the following to ensure that there are no defects:

- Continually inspect their product during production
- Mend defects in the early stages of production and
- If your product had defects downgrade it or scrap it.

To ensure that wastage is kept to a minimum, the facilitator will demonstrate the process of recycling clay to the learners. This is a process, whereby dry clay is made reusable, by crushing and mixing the clay with water or soaking the clay in two hundred (200) litre drums, filled with water for a week.

Closure

A detailed report is written by the project investigator, stating how the money was spent on infrastructure development, raw material purchases and training. The closing phase includes all the activities necessary for the project office to close the project. Project close may be signified by system acceptance and transfer to the support organization, or by official system retirement or replacement. It is important that lessons learnt during the project are captured and that project information is properly archived. This phase marks the end of the project's operation, including transferring operations and/or data to a follow-on system (as applicable) and retirement of any legacy system. This phase includes archiving project data and documenting final lessons learned. (Best Practise,n.d.)

Challenges

The project leader must assess the obstacles that may arise when planning and implementing the project. A risk management plan should be developed to address uncertainties and challenges which might arise during and after the project. Some of the more common challenges in pottery project include:

- It is expensive to build a workshop. Normally we rely on municipalities to provide unused buildings to be used as project workshops. Some municipalities do not have unused buildings and this can cause delays in implementing the project.
- Delays from suppliers and contractors renovating a building
- Electricity and water installation is expensive and depending on the infrastructure challenges this may take a while
- Transport of equipment can be expensive because most villages are far from suppliers and access to the areas is compromised by the quality of roads
- Sometimes the learners speak an African language that the facilitator is not familiar with. For example, the learners only speak and understand Venda, but the facilitator can only speak Sotho and/or Zulu and there is lack of available interpreters
- Some members of the group lack discipline and willingness to learn
- Securing funding for these projects is a huge challenge

- Literacy is still a challenge in rural communities

Marketing

Marketing is an important step in the process because it is aimed at securing the market and ensuring sales for the products made by beneficiaries. Beneficiaries are taught about brand development, corporate identity and selling of products. The SSMB marketing personnel design brochures and banners for the project. SSMB collaborate with other government departments such as the department of trade and industry and small enterprise development agency to develop beneficiaries in various skills transfer programmes which involve business and soft skills.

Collaboration is also done in various marketing projects. These include:

- Promotions
- Local and international exhibitions, advertorials, etc.
- Distribution of products both locally and internationally
- Product development from design to prototype development and
- Brand building to increase the awareness and footprint of the brands associated with the various SMME's.

Conclusion

The SSMB division supports government's initiative to alleviate poverty and decrease unemployment by providing skills to the previously disadvantaged communities through training. This paper outlined the activities conducted to manage a pottery project. Different funders are approached for funding. A Gantt chart is used to ensure that the project is implemented according to the timeframes planned. Pottery training is offered for twenty one days. SSMB provides technical assistance for a period of six months to ensure that the correct procedures are followed and technology transfer is continuous. Progress and final reports are written and submitted to the funders. Basic marketing is offered to the learners so that they can be able to sell their products. Ten to twenty people will be employed, that means ten to twenty families will benefit from this project.

A project of this nature provides a framework for the development of the rural sector. This project also talks to the following national priorities:

- Skills Development
- Creation of SMME's

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