

New trends in design research: The case of designing a culturally appropriate coffin for Botswana

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Abstract: Over the past six decades designers and manufacturing companies have been increasingly open to user-centred approaches that define product designs based on what people need. They realize that it is the only way to satisfy these needs and to give added value to their design. Meanwhile recent studies note that designers are key cultural intermediates and must embody cultural values in the products they design.

Research methods have been more and more derived from and shared with social science approaches, one of which is ethnography. The appeal of ethnography to design follows from the recognition by designers that the development of technologies increasingly relies upon an appreciation of the social circumstances in which systems are deployed and used. It allows seeing patterns of behaviour in a real world context, patterns that we can understand both rationally and intuitively. A second development is that people as users or consumers have been given more influence in the design process. In this design participation they participate in the informing, ideating, and conceptualizing activities in the early design phases. This study investigates what can be done in terms of coffin design to provide; desirable, affordable, responsible, respectful and dignified coffins within the informal market sector. Botswana was used for this Case Study. The aim of the study is to find a balance between financial, cultural and emotional needs with respect to coffin design in Botswana.

Key words: *ethnography, design participation, culturally appropriate*

1. Introduction

In terms of human-product interaction the act of burying the dead relative is perhaps the most emotional event of our lives. For this reason mankind has created hundreds of rituals based on tradition, culture and beliefs. Botswana is particularly relevant for researching burial rituals within the traditional informal sector. It has experienced far less colonial interference in its history than its other SADC (Southern African Development Community) neighboring countries. Rural communities remain intact, there is little ethnic mix. By Sub-Saharan African standards Botswana is particularly affluent highlighting great diversity in the expense of funerals. 18% of Botswana can no longer afford to pay for the funeral of their loved ones. The Botswana government and its

municipalities provide state funded funerals for the financially disadvantaged. The cost of a coffin plays a significant role in the total cost of a funeral. Even families who can raise enough funds to pay for a funeral can be faced with debts which may be passed on from generation to generation. An affordable and desirable coffin could add significantly to the well being of the communities hardest hit by the current HIV/AIDS pandemic.

This study investigates what can be done in terms of coffin design to provide desirable, affordable, responsible, respectful and dignified coffins within the informal market sector. Botswana was used for this Case Study. The aim of the study is to find a balance between financial and emotional needs with respect to coffin design in Botswana. Bearing in mind that designers are key cultural intermediaries they must embody culture in the products they design. Where necessary, it is the role of the designer to help bring about positive societal changes through product design. An affordable, culturally appropriate coffin should therefore be a new symbol of a thoughtful and sensitively organised funeral.

The paper presents a case study based on ethnography and on participatory designing the '*Everybody Coffin*'. The '*Everybody Coffin*', a Dutch product, is a special click-to-construct coffin design which makes it easy to transport, distribute as well as to assemble on any location without tools. The current universal model incorporates mainly western values related to aesthetics, dimensions and the burial procedures in Europe. Delft University of Technology in collaboration with the University of Botswana and the producing company initiated a research project to design a cultural appropriate coffin for Botswana [3]. The main part of the research took place in the villages and at the university of Botswana. The design challenge was to redesign a coffin to reduce the costs whilst enhancing the emotional experience a coffin. The result would have to be acceptable and culturally appropriate within the traditional market.

2. Method

In this study a mixture of several qualitative methods have been used. In the analysis phase an ethnographic study for a deep insight into the Botswana burial culture was conducted. Local rituals were studied on the spot by taking part in the whole process, talking with stakeholders and studying documents, newspapers and journals/magazines. In the phase of (re)designing design participation characterised the process. The term 'participation', a way of involving stakeholders in the design process, can mean different things for different people in societies or even the same community. Lee [4] defines three modes of participation which are working across three different spaces, abstract, concrete and in-between. Abstract Space (AS) is the space of vision and geometry, used by architects/designers to design our cities. Concrete Space (CS) is the space in which we live and experience. Techniques of 'Design Participation (DP)' happen in the realm where the AS and CS overlap. There are different levels of user involvement and engagement of user-centred designers to work in the in-between space: the realm of collaboration design. Participation is about working across spaces. Additionally there are some other participation activities that refer to participate in public policy decision-making processes and some other general social responsibilities such as voting and doing volunteer work. They can be called Public Participation, which aims to facilitate active citizenship. The activities of Public Participation (PP) involve a lot of expert involvement and try to enable the public to take part in public decision-making. Alternatively, another mode of participation, which can be called Community Participation (CP), has a close relation to community development activities.

Our design process shows characteristics of both Design Participation and Community Participation. Preliminary research was conducted to focus the design research on particular user groups. The purpose was to identify groups in Botswana society who potentially can influence and change burial culture. Both Burial Societies [7] [8] and Church groups play a particularly important role in what is acceptable and what is not within burial customs. Religion plays an important role in society and provides an essential moral framework in terms of promiscuity and alcohol misuse. The role of women play a particularly essential role in terms of informally arranged savings plans within the traditional burial sector. A collaborative approach with these groups was used to help determine what was acceptable, and what was not acceptable within Botswana burial practices. Participants in the study were: burial societies, coffin manufacturers, church groups, funeral parlours, and inhabitants of the villages. In the next sections both the ethnographic study and the participatory design process will be described.

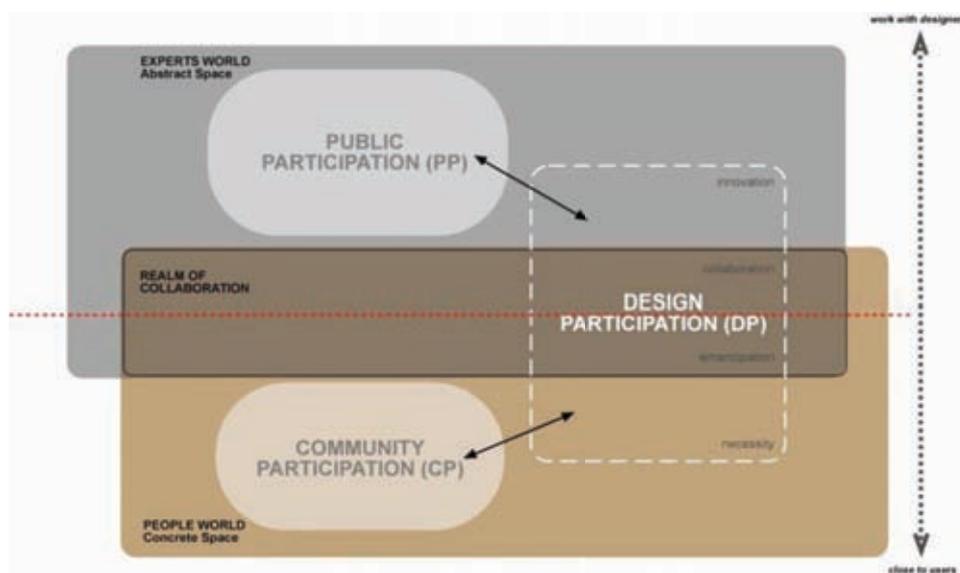


Figure 1: Design, public and community participation in the abstract and concrete space [4].

3. Ethnographic study

Botswana relies culturally on its village communities who have retained in many traditional practices despite westernization and modernization. Each village has a number of tribes, each of which upholds certain traditions from cradle to grave. Funerals and burial rituals play a central role in the Botswana culture. However not much has been documented about the actual interaction during the rituals. In addition almost no interest has been there either from the design or business perspective to get a deeper understanding of these ceremonies and how to develop more cultural appropriate products like for example coffins.

Understanding communities and local social networks is key to developing culturally appropriate coffins. As a result the research started with an in-depth context and stakeholder analysis of the extravagant burial rituals, which highlighted the functional, aesthetic and emotional values of the coffin. A framework was used to identify and integrate socio-cultural aspects into the new coffin design.

Burial rituals in Botswana

All burial rituals are based on underlying belief systems. There has been a strong influence of numerous dynamic social factors that have challenged and altered many of those belief systems. Such examples of these are the influence of traditional healers and the understanding of HIV/AIDS. Christian beliefs and governance are also

contributing to shifts in belief systems in Botswana. Whereas the structure of burial rituals in Botswana is sometimes well documented in the literature [1] [10], there is no link to what is actually happening at ground level. The literature also does not highlight the opportunities for culturally appropriate coffin design. Currently all research is based on business as usual rather than discussing possible future scenarios as a result of social and economic changes. A rural Botswana funeral was observed as an example of how funerals are currently organised. It was an up-market, expensive funeral, where many families would not have the means for such a service. It does however represent in which direction funeral arrangements are going and to what the general public aspires to in a funeral. This funeral contains all the elements needed for a dignified funeral in the urban/rural black community.

Before the event

Burial societies meet up to organise and plan the burials. They usually meet up on Saturdays or Sundays. They will discuss how they will arrange the food; they may also make sure the funeral parlour has enough of the desired coffins in stock. Burial society uniform is always worn to a meeting. Some parts of the service are also practiced, particularly the singing. Thinking about funerals is a part of everyday life. It is central to culture itself. An example is when trying on clothes a lady may ask herself; “will it look good at a funeral”, or “can I also wear it at a funeral”. People attend many funerals in a year, thirty would be common. For many it is part of their weekly ritual. Often even the official workweek takes this into account. Friday afternoon is often free so that people have time to get back to their villages as ceremonies almost always take place on a Saturday and mourners must arrive for the evening service.

Death

Upon the official announcement from a hospital, a well-organised system is set into action. The first step is to decide on the date of the funeral. Only families who are financially disadvantaged may consider a burial during the week (fewer people can come and there are often other discounts). It takes about five days to organise a full funeral. This is dependent on where the person dies and the distance from their home village. Everybody is buried in their home village (although women are usually buried in their husband’s village – where their post-marital home is). In the culture attendance is expected if you knew the deceased, or any of the family or extended family in any way. That means that almost everyone can turn up to a funeral.

Mortuary service

Firstly the body is transported from either the state mortuary or a hospital to the local (nearest to where the person is to be buried, or where the policy is held) funeral parlour. The body is transported using a reusable transport coffin. These are made of plastic and have convenient wheels. This is the first service of the week. The mortuary is often also a funeral parlour. The body has already been prepared and put into the chosen coffin by the funeral parlour. The service is held in the mortuary with an open casket. Only the (extended) family and the church groups and those closely involved in the organising go to this service.



Figure 2: Attendance at a rural funeral in a village in Botswana.

Church service

Depending on how religious the deceased was, a church service may be held. The church service is held on a Friday in the afternoon. The casket is taken out of the hearse and is carried to a trolley which is rolled to the centre of the church during this ceremony. The casket is closed during this ceremony. In the church service the ceremony master has a dominant role in the ceremony. The church group and burial society also have a central role in all ceremonies, especially the church service.

Night service

The night service is held at the family's home. A number of tents are erected and there will be a number of fires burning in parts of the garden, cooking the food. Many socialise and catch up with each other before the service starts at about 9 o'clock. Women are expected to stay awake all night. There is less pressure for the men to do so. Most night services do not end, they continue to the following morning for the next service.

Food/feasting

Botswana is renowned for its beef industry. It is common for most male Batswana to hold a number of cattle. The more cattle a person has the more status it gives them. It is common to have thirty or more cattle at their cattle post. As part of the burial ritual a cow must be slaughtered which poses few problems in Botswana as one or more cows can be donated from any of the family or extended family. Traditionally the mourning family is responsible for providing one meal per person per day during the mourning period. This is done outside in large three legged cooking pots that can be loaned or rented.

Digging the grave

The grave is often dug in the evening before the funeral, most probably after the church ceremony. It can be an especially emotional time. The funeral parlour can also do the digging. It is also their job to finish off the grave. They lay out carpets, arrange chairs and set up a tent. All graves face in the same direction which respects the East-West burial tradition.

Inspection

The inspection of the body is held before the morning service behind closed doors (in the house). This poses a challenge as many houses are small and it is difficult to get the coffin in the house. Often the coffin needs to be lifted at an angle causing the body to slump to one end. The purpose of the inspection is to make sure that everything "is there" and to make sure that every thing is done in a proper manner. It is really, really important that this is done right to the extent that the funeral could even be postponed. Representatives of the funeral parlour (funeral director) also prefer to be there because the families often have problems closing the coffin properly. It is to make sure that there are no awkward moments during the public ceremony.

Morning service

In order to prevent rain from falling during the day, a handful of salt is thrown on the outside fire. This ritual is not restricted to funerals. The funeral director coordinates the morning service. They are responsible for the funeral following its time schedule. The service starts at 5 am but only arriving earlier will guarantee that you get a seat. The family is given special allocated seats near the front. The service is held in front of the house under a tent. It is the same layout as the previous night although the coffin is now on show. The viewing is done using a partially open casket. It is essential that the coffin or casket has a viewing area. A fully opened lid is possible however the coffin must still have partial viewing when the full size lid is opened. Essentially this means that two lids are necessary, one above the other. Usually, most of the upper body can be seen. Viewing of only the face is not acceptable as the deceased is usually wearing their best 'church clothes'.

Procession

When the morning service ends people are expected to make way so that the casket can be brought to the hearse with the family. Where possible people share transport in the procession. Some cemeteries experience huge traffic problems at a cemetery on a Saturday although this phenomenon is limited to larger villages or cities.

Burial

The local priest is present at the burial although the ceremony master leads in the service. The church and burial groups continues to sing their mourning song. The priest and the ceremony master read out some final prayers. The casket is lowered using an electrical lowering system which is common. The problem with using such a system is releasing the straps once the coffin is lowered. Experienced funeral parlours dig two small mounds of earth in the grave to keep the ends of the coffin off the ground. This way the straps can be pulled out easily. Two bricks may also be used. Once the coffin is lowered a few handfuls of earth were cast on top of the coffin. Then, a sheet of corrugated iron is used to seal off the casket in order for the grave could be filled. The reason for this particular type of burial is not because of safety issues (grave robbing) but as an extra to show a higher amount of respect.

Conclusions

By studying the burial ritual as a whole, a number of conclusions may be drawn which have an impact on the design of a coffin. These conclusions are made with the current design of the Everybody Coffin in mind:

- The coffin is used intensively throughout the burial period that can last ten days. The coffin must therefore be strong enough to endure this kind of usage without incurring any damage.
- All coffins need a viewing area for the face and upper torso.
- The whole lid should be easy to remove and replace, including viewing area. There must be no hammering on the lid area to assemble the lid. Currently the hammering would happen directly above the face of the deceased.
- There is no lining to support the body. Currently the body would move about too much when lifted vertically through the doorway of the house.
- The design must take 'sliding' into account when moving the coffin in and out of the hearse.
- Some solution should be found to release the lowering straps once the coffin is in the grave.
- A lot of money is spent on a funeral. A 'cheap' coffin does not symbolise an expensive funeral. The coffin must be fitting with the rest of the ritual.

3. Designing 'culturally appropriate' coffins

Designing a culturally appropriate coffin may be seen as an abstract, complex and an entirely subjective concept. However, the framework for designing cherishable, culturally orientated products by Moalosi [6] at the University of Botswana gives a concrete starting point (see Figure 3). His culture-orientated design model sets out a framework in which products can be developed to become more culturally appropriate. The (unpublished) framework is based on earlier studies by Moalosi et al. [5] [6].

This model proved to be particularly suited to coffin design, primarily due to its role and importance to culture. Secondly, to Batswana, small details in the burial ritual reflect the lives of the deceased. Careful analysis of the model, and preliminary design ideas highlighted a number of areas which could be worked on to make the *Everybody Coffin* more culturally appropriate to Batswana.

In the *user's domain* in the model strong *emotional factors* (EMF) are driving the interaction with the product (coffin). The aspects where a designer has influence on (Integration phase, Designers domain) are:

Knowledge (KLG) - The coffin design may reflect in some way what the deceased has been doing during their life. KLG portrays the knowledge and experiences of the deceased in the coffin design. The product and company name is 'branded' into the lid of the coffin with a hot iron, just like with cattle. People will know that they are also buying a product that is supported by the government. The lining can be custom made or modified in the villages. For example the lining may be made of bamboo or German print.

Gender (GND) - Coffin construction are unisex, the lining and finishing could be gender sensitive. In terms of the lining or decoration with a tribal flag which is also worn by women at weddings and funerals.

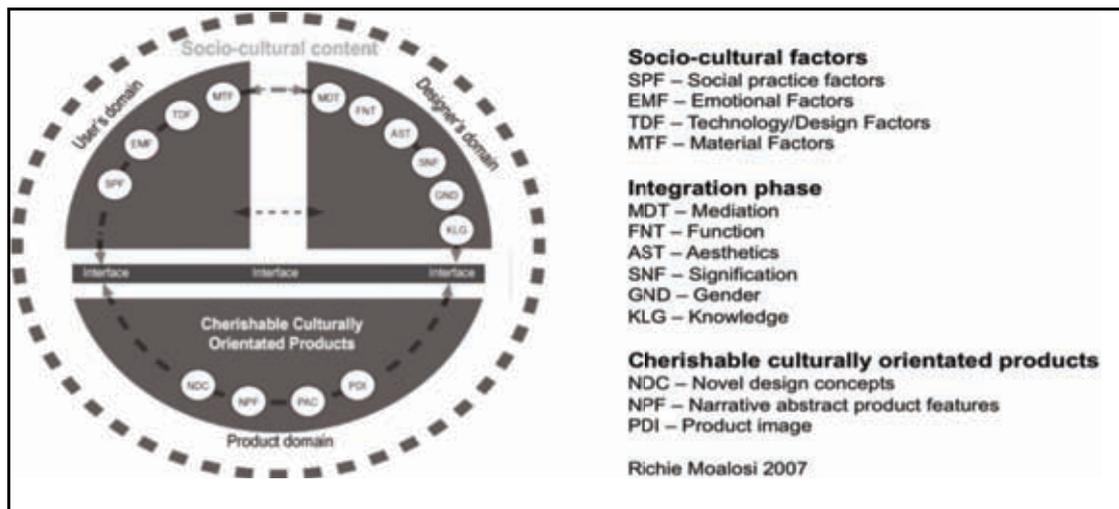


Figure 3: Culture oriented design model [6].

Mediation (MDT) - Is where the shape carries messages either about the culture or about the life of the deceased. It is the product function within the culture. The final design has a viewing area. The viewing lid simply slides open and closed. The rest of the lid uses a click system. The coffin can slide more easily in and out of a hearse. The lining supports the body in the centre of the coffin during transport. Fabric ankle straps are built into the lining. This supports the body in the coffin when carried vertically through small doorways.

The shoulder spaces were included to safely support the lowering strap and allow for easy removal once lowered.

Technology/Design Factors (TDF). The design implements regionally available waste wood. A new construction was designed for this wood. The machinery was simplified to produce this design.

Signification (SNF) - Is where the product communicates specific social group membership. The clearest link in coffin design is to include the pattern of a church group or a Burial Society. The lining could be used to signify a tribal flag, symbol or Burial Society logo. Local assemblers may also choose to paint the lid to signify membership to a certain group.

Aesthetics (AST) - Are emotional factors that induce appreciation of beauty within the same socio-cultural context. In all cultures the term 'design' is open to interpretation. Batswana appreciate 'design' which means that a product must be more than functional. *Style* and *status* are part of 'design'. This should not be confused with style quality. The visual aesthetics are more important than the quality. The handles of a coffin are a prime example of this. They may be made of plastic but they look expensive. The general shape suggests that it is a more expensive 'dome' design giving status to the design. The use of solid wood and detailing on the handles and the sides make the coffin look more stylish. Modifications to the construction ensure that none of the faces have any holes. It appears sealed and airtight. The lining appears comfortable.

When it comes to the cultural significance of the funeral itself there is “*a powerful social and motivational pressure between elderly people to be properly buried.*” [2]. She highlights that the motivation is less a culturally symbolic relevance than a social relevance. Baur’s [1] consumer survey supports this where approximately 70 percent of respondents indicated that the coffin purchased was not culturally significant. This is interesting to the development of culturally appropriate coffins. Currently it is very rare to find a commercial coffin (sold in numbers by a funeral parlour) which makes use of any of the aspects of the *culture-orientated design model*. This is perhaps why all consumers and professionals emphasise style, status and aesthetics (at the right price) as the only important product values. Introducing cultural values into coffin design could significantly influence the decision making process. Furthermore, the impact on the social relevance of introducing new product values to coffins allows for a shift away from the existing values of aesthetics (high quality finish and fancy handles) and price. It could be used as a technique to curb the spiraling coffin costs without detracting from the burial ritual. In fact the burial ritual stands to gain from more culturally sensitive coffins. It evokes an essential emotion throughout rapidly developing countries in Southern Africa. Pride, in terms of stature and heritage, is the new product value that will determine if commercial products are successful or not. If the Everybody Coffin is to achieve product acceptance in the traditional black community it must relate to both their expectations of coffins and reflect their life long experiences. Doing so may help elicit a sense of African pride which emotionally adds to the occasion of a burial. The design solution need not be expensive to achieve this.

Iterative process

It was decided to adopt a design process that ensured a significant amount of product feedback. Continuous feedback was essential for the development of a successful redesign. From the context research in the villages product values were derived being translated into design guidelines. Based upon these design guidelines the design process was initiated. The design process was iterative involving the rural communities and stakeholders in each cycle. Real scale mock-ups and prototypes (see figure 4) were developed to enable stakeholders and focus groups to evaluate tangible models and to reflect on its emotional and cultural acceptance. This allowed new designs to be constructed rapidly. It enabled stakeholders to experience tangible models, rather than three-dimensional drawings [9]. It turned out that presenting people with pictures was not enough to find out what was desirable and what was not. The whole process took four feedback cycles. In the first cycle the original Dutch ‘Everybody Coffin’ as a scale model was used. Second, a scale model redesign was presented, in the third cycle followed by some full size prototypes. A final design was discussed in the fourth and last cycle. To ensure that the findings were representative, focus group sessions were held. Some of the results that came out were:

- It was difficult for people to imagine or envisage what they would like. They referred to their peers to determine what was acceptable. The prototypes were merely suggestions upon which they reacted.
- People rejected the proposals of simpler coffin designs for burials of young and old, rich or poor just because they believe that ancestors must be glorified.
- People were fearful of exorbitant pricing and actually chose the cheapest looking coffin. Price is currently the most important factor in the decision-making process. Something that looks expensive usually is.

- All claimed that funerals were becoming too expensive. Many blamed the funeral parlours. Others blamed the rise in consumerism throughout Botswana surrounding funerals and feasting.

Several other critical considerations are prescribed by the regional elders, the *sangomas* and the church groups. Each one appears to have a philosophy of its own; all of which must be met before a coffin is approved.



Figure 4: Mockups of the new cultural appropriate coffin design.

A wide range of improvements were made related to the aesthetic appeal, product function and cultural orientation like a 'viewing area', lining with printing of tribal flags, the dome shape (giving status to the design). These improvements have a significant effect eliciting positive emotional feelings and product acceptance and desirability in Botswana. See figure 5 for one of the final designs.



Figure 4: A Final Design.

4. Discussion

Understanding communities and local social network is key to developing culturally appropriate coffins. As a result the research started with an in depth context and stakeholder analysis of the extravagant burial rituals which highlighted the functional, aesthetic and emotional values of especially the coffin. A framework for designing cherishable and culturally oriented products, which has a strong emphasize on emotional factors, was used to identify and integrate socio-cultural aspects into the new coffin design.

From the context research in the villages after the burial rituals, and interviews with stakeholders and experts in the field product values were derived which has been translated into design guidelines. Status is one of the most important values for Batswana when choosing a coffin and holding a funeral service and is often in contrast to their status throughout their lives. Based upon the derived design guidelines the design process was initiated. The design process was based on design participation: feedback iterations were performed involving the rural communities and stakeholders in each cycle. Cultural differences meant that the *Everybody Coffin* was not suitable for the commercial sector. Based on the feedback throughout the design process we can conclude that the design has improved in terms of product acceptance. Although the target market was for the Burial Societies, the final design also took the extended family into account because of their influence on choosing a coffin. The result is a coffin that is, perhaps, more stylish than necessary for the intended 'user' group. However, this means that it is less prone to criticism and less chance that anyone would object to it.

In the process of designing the *Everybody Coffin* to be more culturally appropriate, new product values were discovered. Using these product values for coffin design may help to positively change purchasing behaviour in Botswana. This study indicates that a culturally appropriate coffin can be highly desirable and need not be expensive. Designers can play an essential role in helping societies to change towards more financially and environmentally sustainable practices. It is their duty to help societies and governments achieve their long-term goals. The Case Study outlined key usability aspects that the *Everybody Coffin* could improve on. The redesign includes a number of new designs which all coffins could benefit from. This means that progress can be made especially in terms of transportation and neutralising toxins released by bodies.

Unexpectedly, this study unveiled a great opportunity to stimulate entrepreneurship in the rural areas. Cooperation with Chiefs, tribes, Burial Societies and Church groups play an essential role when implementing *Everybody Coffins*.

For the coffin to realise its potential as a culturally appropriate coffin it requires the involvement of local craftsmen to personalise each coffin. This must be done commercially. Government and NGO 'hand outs' can have a detrimental effect on proactive entrepreneurship in the rural areas. Coffin assembly can be seen as an ideal first step to economic empowerment.

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