RECYCLING WASTE PLASTIC
INTO
PAVING BLOCKS AND FLOOR TILES

A PROJECT REPORT

FUNDED BY: AFRIKA HILFE FRANKEN

PREPARED BY:-
Mr. *Musa Ibrahim Haule*
Senior Project Manager,
& Project Executive Director
Ludewa Development Group (LUDEG)
BOX 80 Ludewa
E-Mail: *ludeaorg@gmail.com*
Mob: +255 762 834 780/785 754 426

SUBMITED TO:-
Ms Kirsten Sauer
The Chairman,
Africa Help Franconia
Amsterdam
1079 GK

A copy to: *The District Executive Director (DED)*
Ludewa District Council
BOX 19 LUDEWA

DECLARATION

I, MUSA IBRAHIM HAULE, do hereby declare to **Africa Help Franconia**, that this report has covered the original work done by **Ludewa Development Group (LUDEG)**. It is the work done on Recycling waste plastic project and that it has neither been submitted nor being concurrently submitted anywhere in any other organization/institution. We declare that fund donated were 100% used to accomplish the project of **Recycling Waste Plastic into Paving Blocks and Floor Tiles.**

1.0 ACKNOWLEDGEMENT

We would like to thank our partner **Africa Help Franconia**, Ms Kirsten Sauer and Mr Uwe Tobaben on behalf for funding this project. We acknowledge your kindness and efforts to support **Recycling of Waste Plastic into Paving Blocks and Floor Tiles Project** (*waste to Wealth Project*) and supporting African community to foster development.

Also we would like to thank the government of the United Republic of Tanzania for assisting, promoting and supporting industrialization.

Special thanks to the project team Mr Charles Mpangala for generating this idea, Mr Allen Mtitu, Xavery Mhagama, Ms Pauline Joseph and Ms Diana Makombe for their participation in implementing this project.

Also our contractors Jose Workshop (Carpentry works), Ludewa Tinsmith Group (welding works), Ludewa Water Supply and Sanitary Authority and Ludewa district council for their assistances in implementing this project.

2.0 ABSTRACT

Plastic waste became a major global problem. A lot of waste plastic are improperly disposed daily everywhere. This has brought serious damages to the local environment in water, air and pollutes soil. Improper disposing of waste plastic creates breeding site for dangerous insects like mosquitoes which causes Malaria, a disease which kills so many people especially infants and pregnant mothers. A disease like cholera is a most result of improper dispose of waste.

There are many types of plastic which melt on different temperature. Low Density Polyethylene (LDPE) melt fast than High Density Polyethylene (HDPE). LDPE work best to make paving blocks while HDPE are the best to make floor tiles.

It is very important to clean the plastic before subjecting to recycling. Impurities cause problem in during melting where excess smoke may be created and prevent the plastic from sticking to each other. Sand added attaches firmly with melted plastic and increases the strength of pavers. Plastic paving block replaces the existing concrete pavers.

Paving blocks made from waste plastic were found to be stronger, attractive, low cost, low water absorption capacity and are very good to be used in low traffic areas as compared to concrete pavers.

Recycling waste plastic helped the reduction of waste related diseases and clean the environment. Also, waste plastic are now having values as people (especially youth, women and "bodaboda") used to collect them and sell to us.

3.0 MATERIALS AND METHODS

3.1 Materials

In this project the following materials were used:-

Melting barrel, Construction spoon, Spade, Dry sand, Fire wood, Mask, Gloves, Safety boot, Paving mould, Long sleeve coat, Weigh scale and Used engine oil

3.2 Methods

Waste plastic were collected through various places within Ludewa town and transported to project site, Kilimahewa Street for recycling. Prior to processing of it, waste plastic were sorted, cleaned, weighed using spring balance and poured into hot metal drum for melting. Plastic paving blocks were made and compared to concrete paving blocks.

Figure 1: Waste Plastic ready to recycle

4.0 RESULTS

Recycled paving blocks were found to be very attractive due to its quality, low cost and strength as compared to concrete pavers.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Recycling waste plastic into paving blocks is a better way to make use of waste into a useful way. This also helps reducing waste related diseases and creates job opportunity to community especially youth and women.

5.2 Recommendations

We strongly acknowledge the support from our current partner (Africa Help Franconia). But since they are small NGO with their limited budget that makes them difficult to support us 100% in our project. We always search other interested donors to collaborate with us so as to implement our projects.

We therefore strongly recommend the following:-

i. The modification of the machineries from local that we have into modern technology will fasten the recycling process and increase the daily production capacity
ii. It will be helpful to us if we could have access to transport facilities such as garbage truck to help us collect many waste per a time,
iii. The current local government could find a way to support this project for the betterment of our district and nation at all.