

COMPARATIVE EVALUATION OF THE DEVELOPMENT OF LABOUR-INTENSIVE WORKS TECHNOLOGY PROGRAMME IN NAMIBIA

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A research report submitted to the Faculty of Engineering and the Built Environment, of the University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Science in Civil Engineering.

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DECLARATION

I declare that this research report is my own, unaided work. It is being submitted for the Degree of Master of Science in Civil Engineering in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

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Signature of Candidate

..... day of,

DEDICATION

This work is dedicated to the following:

- ❖ To my late father and my mother who did so much to educate me.
- ❖ To my wife Veronica who endured the hardships of the period when I was studying, but nevertheless encouraged me and looked after our children in my absence.
- ❖ To our children Samwel, Thadeus and Aichi-Lukundo, to whom we endure to set good examples and standards in education and life.
- ❖ To my siblings Lawrence, the late Elishahidi, Beatrice, Gadiel, Joyce, Enighenja, Bryceson and members of my extended family, all of whom encourages and supports me in my endeavours in various ways.

SUMMARY

1. Background

A number of development programmes have been carried out in Namibia since independence. It is seldom that evaluation is undertaken after completion to assess the degree of success of the programmes implemented in relation to their objectives and other effects. Often, similar programmes or projects are undertaken without the benefit of lessons and experiences from past programmes or projects. The aim of his study was to evaluate one such post-independence development programme implemented in Namibia namely the *Labour-Based Works Technology Development Programme (LBWP)*. This programme was initiated in 1991, and was largely completed in 2000.

2. Problem Statement

Creation of employment and poverty eradication are two of the four broad goals of the National Development Plan 1 and II (NDP I and NDP II) of the Government of Namibia (GON). The LBWP was implemented during the period of NDP1. Programme objectives were two fold; the creation of employment opportunities in the rural areas; and the development of road infrastructure in the underdeveloped inaccessible areas of the country. Prior to this programme, labour-based works technology was unknown in Namibia. There is no comprehensive study undertaken as yet to examine the level of success of the LBWP in Namibia in relation to its objectives, and in comparison with other successful programs elsewhere. This study was carried out for this purpose.

3. Literature Review

An extensive literature review was undertaken to establish the existing intellectual basis and the theoretical framework of labour-based works technology. Research that has already been done was analysed and compared to crystallise this study. The literature review provided means to;

- review and understand problems which directly or indirectly relate to the study;
- establish what is already known and what remains to be investigated;
- gain an understanding of the research methodology previously used in such studies and the tools and instruments which proved to be successful in similar previous studies;
- be acquainted with current information in the field of the study subject; and
- show in what way the reviewed literature is related to this study and the problem being investigated.

Work done by the ILO, the World Bank and other scholars in research and studies, and the potential of the technology on poverty reduction was also reviewed. The role of infrastructure services in poverty reduction has also been explored.

It was found that the Namibian LBW programme model is similar in many respects to programmes implemented in other countries and that the existing knowledge on the subject has a direct bearing and relevance to the programme implemented in Namibia.

4. Study Methodology

Qualitative research methods were used to describe and analyse the programme. Primary data was obtained through interviews and discussions with role players and stakeholders in Namibia. Textual and secondary data used in analysis was obtained through review and analysis of existing documentation on the programme and its projects. Field data was also obtained from observations done on ongoing and previously completed projects. Most of the data used for analysis was obtained mainly from the Ministry of Works, Transport and Communication (MWTC), the National Planning Commission (NPC), the Central Statistics Bureau (CSB), the Roads Authority (RA) in Namibia, and from ILO offices in Harare.

The main study constraint was the absence of relevant data, and the inappropriateness and inadequate of information and data obtained. Data available

was not systematically recorded and had many gaps. In most cases data lacked the integrity and detail needed for comparison, meaningful analysis and evaluation.

5. Work Carried Out

A detailed description of the LBWP in Namibia has been carried out, and the institutional framework in which it was implemented has been reviewed. Programme and project documents and reports have been studied. The study addressed institutional, social-economic, financial, economic, technical and operational aspects of the programme and its projects. Activities undertaken were studied and analysed. Labour-based road construction projects undertaken were also studied, analysed and compared. Various output measures and parameters were determined for evaluation and comparison. Comparative evaluation of the programme was undertaken, in relation to its objectives and other effects. Comparison was also made with similar programmes implemented in Kenya, Ghana, Botswana and Lesotho which are known to have been successful.

6. Conclusion

The study concludes that the LBWP in Namibia was largely successful in relation to its objectives. Programme performance in various aspects and output are comparable to that achieved in other countries. The main indicators of success are its acceptability politically, socially, economically and financially, and programme outputs. The programme success factors were that;

- it had full Government and political support;
- it was supported by stakeholders;
- it was managed professionally;
- it was well funded and had continuous support from donors and the ILO;
- the LBW Coordinating Unit was well organized and was given full support.

In relation to the development of small contractors it is concluded that, considering the time and resources spent, the programme was not entirely successful. More contractors and supervisors could have been developed, if the project was

structured and organized in a better way, the Department of Transport (DOT) was fully committed, training was given more attention and the targeting of trainees and incentives was reviewed.

The study established that 350km of new gravel roads were constructed using labour-based works methods and approximately N\$130 million was invested in the period 1992-2005. About 80 000 people were temporarily employed for various durations. It is estimated that about 4100 person-years of employment were created. This is equivalent to about two (2) years of full time employment for the entire public service of Namibia. About N\$45 million was paid to casual workers in projects executed. This is about 35% of the total project costs. In comparison, the programme in Namibia was less labour-intensive than those in Kenya, Ghana and Botswana.

The average unit construction cost achieved in the last decade is about US\$56 571/km for gravel roads, and US\$135 030/km for bitumen sealed roads. The cost of road layer-works was found to be about 50% of the total costs and that of establishment was 26%. The average number of tasks used per kilometre for gravel roads was 1554, and for bitumen roads was 3054. The average labour input used for gravel roads was about 3100 man-days per kilometre. About 210 casual workers were on average employed daily for the duration of the projects, and 42% of these were women. Task rates achievement was between 75% and 80%, and the average physical productivity achieved was about 1.0km/month. This was about 84% of the planned productivity, but less than 50% of that achieved in the pilot projects.

The performance of both trained small contractors and established medium-sized contractors in construction contracts was generally poor. About 63% of the contracts awarded to small contractors were terminated or taken over due to non-performance. Only 20% were completed on time. Overall, 75% of all contracts executed had time overruns of about 30%. The main reason for non-performance was the lack of competent, trained and committed supervisors and site managers. Site work was poorly organized, task workers were not controlled, task rates were not achieved and daily productivities were low. Adequate support and mentorship

mechanisms are needed to be put in place in future before contracts are awarded. Training of company owners, supervisors and site managers in project and site management is necessary to improve productivity and reduce costs. Strategically, engaging entrepreneurs, supervisors and managers with an adequate education background and who will treat labour-based works contracting as a serious business is necessary. This is the main lesson which Namibia can derive from programmes in Ghana, Kenya, Uganda, Sierra Leone and elsewhere.

Comparing the Namibia programme with programmes in Ghana, Kenya, and Lesotho, it is also concluded that;

- The Kenya and Ghana programmes were larger in terms of investment, roads constructed and employment created.
- Labour-based programmes can be successfully undertaken in countries with differing socio-economic backgrounds, where unemployment, poverty and lack of infrastructure are common denominators.
- Labour-based works contract features were mostly similar in the countries compared, with minor differences.
- Higher levels of education are used for selection into the training programmes in Kenya and Ghana. Training durations and plans are comparable.
- The average productivity of labour in Namibia compares favourably with productivities in Kenya, Ghana and Lesotho. However, casual labour wage levels in Namibia and Lesotho are higher than those in Kenya and Ghana.
- Women participation in labour-based works is higher in Namibia, compared to Kenya and Ghana.
- Unit construction costs for gravel roads in Namibia are comparable to those of Lesotho, but are significantly higher than those in Kenya and Ghana.
- Unlike the Ghana programme, there are no existing initiatives in Namibia to support small trained contractors with equipment.
- Road maintenance in Namibia is not done strictly according to labour-based principles, even on roads built using labour-based methods.
- Inability to develop local expertise in labour-based works has a major effect on the sustainability of the LBW technology in Namibia.

7. Recommendations

The main recommendations of the study are that:

- The Labour-Based Works Forum, or a similar body, needs to be activated;
- Expansion of labour-based works should be undertaken in all sectors responsible for infrastructure, public or private;
- A new strategy for development of small contractors and training of supervisors needs to be adopted;
- Provision of basic equipment to trained small contractors has to be considered;
- Training in labour-based works technology should be institutionalized in Namibia;
- Technical assistance is required to revive the labour-based works programme and to carry out expansion tasks;
- Namibia should reduce dependence on donor support for sustainability of the LBW technology programme; and
- A “program approach” as opposed to “project approach” should be adopted for expansion of labour-based works into other sectors.

8. Further Study

The following further dedicated studies are recommended:

- i. A detailed impact study focusing on socio-economical aspects and developmental impacts. The impact of labour-based works on the workloads of rural women can also be addressed in such a study.
- ii. Evaluation of the current efficiency level of labour-based works in Namibia. Such a study can also include cost comparisons between various construction approaches and delivery mechanisms.
- iii. Study on the use of animal-drawn carts for the haulage of materials in the construction of labour-based works.

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LIST OF ABBREVIATIONS AND ACRONYMS

CEITB	-	Civil Engineering Industry Training Board
DBSA	-	Development Bank of South Africa
DOT	-	Department of Transport
DTIMC	-	Directorate of Transport Infrastructure Maintenance and Construction
DR	-	District road

GDP	-	Gross Domestic Product
GDFI	-	Gross Domestic Fixed Investment
GNI	-	Gross National Investment
GON	-	Government of Namibia
ILO	-	International Labour Organization
KfW	-	Kreditanstalt für Wiederaufbau
RARP	-	Rural Access Roads Programme
LBW	-	Labour-Based Work
LBWF	-	Labour Based Works Forum
LIWP	-	Labour-Intensive Works Programme
LIW	-	Labour-Intensive Works
MR	-	Main road
MRC	-	Multi Disciplinary Research Centre
MWTC	-	Ministry of Works, Transport and Communication
NEPRU	-	National Economic Policy Research Unit
NPC	-	National Planning Commission
NHIES	-	National Household Income and Expenditure Survey
NISER	-	National Institute for Social and Economic Research
NQA	-	National Qualifications Authority
ORMP	-	Ovamboland Roads Master Plan
PSC	-	Public Service Commission
RA	-	Roads Authority
RFA	-	Road Fund Administration
RCC	-	Roads Contractor Company
SAMAT	-	Southern Africa Multidisciplinary Advisory Team
SIDA	-	Swedish International Development Agency
SWK	-	Scott Wilson Kirkpatrick
TOR	-	Terms of Reference
UNAM	-	University of Namibia
UNDP	-	United Nations Development Programme
UNTAG	-	United Nations Transition Assistance Group
WCE	-	Windhoek Consulting Engineers
WASCOM	-	Wages and Salary Commission

Map of Namibia (Insert)