

**NATIONAL
BUILDING
RESEARCH
ORGANISATION**



2014 ANNUAL REPORT

Ministry of Disaster Management



*The Annual Report 2014 was approved by the NBRO Interim Management Committee (IMC)
on its meeting held on 08th August 2016.*



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NATIONAL BUILDING RESEARCH ORGANISATION
தேசிய கட்டிட ஆராய்ச்சி நிறுவனம்



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About NBRO

NBRO is a leading R & D and technical service provider institution and the national focal point designated for landslide disaster. Being a multidisciplinary institution experts from multiple disciplines team up and dedicate their services to NBRO to fulfil its set goals ultimately to achieve disaster resilient safe environment in the country. People seek NBRO assistance when confronted with a diversity of problems in their living environment, be that due to rumbling mountains, soft grounds, polluted air, contaminated water, poor construction and substandard building materials etc. NBRO as a dutiful service provider is always geared up to provide suitable solutions to maintain and improve the quality of life of all citizens.

As its designated functions NBRO carry out landslide hazard identification, zonation, mapping, risk assessment, issuing landslide early warning, awareness and training, and mitigation. It is also an assigned responsibility of NBRO to issue Landslide Risk Assessment Reports (LRAR) for any construction and development activity in landslide prone areas in the country.

NBRO is a self-funded institution and to earn its recurrent expenditure NBRO provides testing and technical consultancy services to the general public, public sector institutions, private companies and international institutions. With the support of its fully-equipped soils testing laboratory and drilling equipment NBRO conducts geotechnical engineering investigations as a consultancy service, and investigations of most large infrastructure development and landslide mitigation projects in the country had been performed by NBRO. In addition, testing of building materials for suitability in construction and certification, disaster risk assessment, environmental quality assessment of water, wastewater, soil, sediment, air and emissions ensuring safety of humans and environment, and related studies leading to impact studies and status management are offered as technical consultancy services by NBRO and these bring in NBRO its much needed revenue. NBRO also offers consultancy services on project management of construction projects and also a unique service of condition reporting of damaged buildings. Human settlements planning and developing cost effective disaster resilient housing are yet more consultancy services offered by NBRO.

Presently NBRO is collaborating with local and international agencies in research, in mitigation projects and in the effort to building disaster resilience in the country.

EXECUTIVE REPORT



I take pride in compiling this Annual Report and the Financial Statement of NBRO for the year ended on 31st December 2014 for NBRO in that year took great strides of advancement as a nationally important institution.

NBRO earned its highest ever turnover recorded in NBRO's history; commenced the largest projects ever in collaboration with national and international partners, and had the highest number of total staff strength in its cadre.

2014 was another year in succession with a highly dynamic market for consultancy work. As anticipated the competition was very strong, with many public and private institutions competing. In spite of that NBRO had been very successful in winning the bids of most of the prestigious project consultancy work. As in 2013, this gave rise to a severe workload to staff and it resulted in a sharp increase in the yearly revenue, denoting the rise in the yearly revenue graph given elsewhere in this report.

In this particular aspect, I am happy to proclaim that NBRO as a reputed public enterprise excelled in its performance in 2014 in all areas, meeting and even exceeding its set targets. NBRO is now heading towards achieving its corporate objectives in a responsible manner in an

ever challenging socio-economic environment.

The success of NBRO winning very competitive bids and getting awarded many projects by the government and private sectors lies with its very high level of performance, coupled with the commitment, and dedication of its devoted staff. NBRO staff has been very productive in 2014, meeting tight time targets and delivering quality products. In addition, I note that delays in work had been avoided almost on all the time. Clients are pleased as their requirements have always been met satisfactorily and complaints have been negligible, thus giving NBRO a strong and very competitive edge over competing institutions.

NBRO is an institution, respected and well-managed, and its good reputation now stands as one among the most trusted technical service providers in disaster management, housing, construction and environmental sectors.

NBRO as a line agency of the Ministry of Disaster Management strongly focused onto building disaster resilience in the country. Most Research & Development, awareness building and training programs of NBRO mainly concentrated onto disaster resilience creation. In 2014, the government allocation for research had been LKR 12.0 Mn and dutifully, NBRO utilized these funds to disaster management related research.

NBRO has taken several steps to mainstream disaster resilient construction concepts into building and construction industry. Firstly, a manual titled 'Disaster

Resilient Construction Manual' was compiled by NBRO with the guidance of an advisory panel of academic and trade consultants. Secondly, in some areas in the hill country, there were frequent reports on schools prone to landslides and other hazards, NBRO took a proactive decision to develop a risk assessment method and compile "School Safety Toolkit" for conducting hazard risk assessment in local schools. Thirdly, several model houses having being designed incorporating resilient concepts with regard to landslides, floods, tsunami and high winds were constructed for display.

As per the research and development programme of NBRO, studies were conducted into improving the efficiency in landslide hazard mapping with newer GIS computer applications, and developing a drought prediction tool using Palmer Drought Severity Index method for testing in a trial study in an area in North Central Province.

In some other research study, a cement block using bottom ash waste from the coal-fired power plant in place of traditional river sand was developed. The engineering properties of this block were found to be satisfactory. Fly ash is another waste material like bottom ash produced at the coal power plant, and its disposal is difficult. NBRO conducts a study to extract Nano-Silica from the fly ash waste for using in making a high strength concrete.

CONTRIBUTION TOWARDS NATIONAL DEVELOPMENT

NBRO considers assisting the government in national development and thus enriching the quality of lives by

alleviating poverty through Disaster Risk Reduction as a key goal. A national goal has been set to achieve 95% reduction in loss of lives and 40% reduction in loss of property due to disasters. In this NBRO as the focal point for landslide studies in the country has a vital role to play.

NBRO has been conducting the Landslide Hazard Zonation Mapping Project for a considerable long period with the annual grants being given by the GOSL. As these zonation maps are frequently being referred to by stakeholders, especially the staffs of local government bodies, NBRO has been training them on how to refer them. It is mandatory that staffs of local government bodies in landslide prone districts refer to the zonation maps before granting any approval on any construction or development activity in a landslide hazard-prone area. If such activity takes place in a risk zone, NBRO has to inspect and give recommendation to local authority through the Landslide Risk Assessment Report (LRAR) issuance process. NBRO now has district offices functioning full time in landslide prone districts for the LRAR issuance work. About 7200 applications for LRAR have been processed in 2014 adding to a total of 38,070 applications processed since the process inception in 2011 March.

As a function, NBRO carries out the very important responsibility of landslide early warning. In order to facilitate early warning of rain-induced landslides in highly vulnerable areas, NBRO has a network of thirty five automated rain gauges located in such high risk areas that continuously transfer data to computers in NBRO for analysis and real time landslide hazard forecasting. This aids landslide early warning and also planning of evacuation when necessary.

United Nations Development Programme, Japanese International Cooperation Agency and Norwegian Geotechnical Institute all assisted in this important task.

Landslide Mitigation Projects at Peradeniya and Padiyapallala were completed in 2013. Second phase of Peradeniya mitigation was expected to commence in 2014. This project benefitted the dwellers and commuters of two towns. NBRO's effort in this project has been appreciated by the affected community and local authorities whose prime concern was safety from the landslide danger.

Many different slope stabilization methods like removal of overburden, land re-shaping, retaining structures, turfs, surface drains, subsurface horizontal drains, and soil nailing, were used in these two mitigation projects.

NBRO implements presently several landslide mitigation projects - Garandiella project (2011-2015), Punchi Rattota project (2013-2015), Passan Watta (2014-2015) and Diyathalawa (2014-2015). Investigations and the detailed design were completed in all these projects and steady progress in site work has been recorded.

Several other projects have been started by NBRO in 2014. The Japanese International Cooperation Agency (JICA) has come forward with generous grants and technical expertise for a project to mitigate four identified high risk landslides. In addition the JICA is assisting technically and financially a

project to stabilize identified unstable slopes in national road network that NBRO and Road Development Authority will jointly implement.

In a similar way, the World Bank is funding a project to stabilize other identified unstable slopes in national road network that NBRO and Road Development Authority will jointly implement and in addition, providing financial assistance to stabilise unstable slopes in and around 18 identified schools in Kandy district

EXTENDING NBRO EXPERTISE

NBRO continued to contribute to many major infrastructure development projects in the country in 2014 too. Geotechnical investigations, technical knowhow transfer on foundation engineering, and disaster resilient designs were very useful to such major projects, especially to the road sector development projects. NBRO's continues to extend its assistance in the stabilization of failed slope in Southern Expressway project as per the agreement with the Road Development Authority.

NBRO conducts studies using Resistivity Tomography apparatus and Ground Penetration Radar to learn about the subsurface in Matale district where ground subsidence was observed. Norwegian Geotechnical Institute and Norwegian Geological Survey renowned for its capacity in such studies assist NBRO in this important work.

NBRO collaborated with Vanderbilt Institute of Energy and Environment in a five year study on agricultural decision making and adaptation to precipitation trends in Sri Lanka, and a model to predict water availability in drought-prone zones has been prepared at NBRO. The study on climate change issues continues and the outcome is reviewed periodically by a committee of stakeholders.

NBRO is carrying out as a paid consultancy work the study 'Consultancy Services for Water Quality and Sedimentation Studies' in Dam Safety and Water Resources Planning Project of Ministry of Irrigation and Water Resources. This project commenced in 2013 and will be completed in 2015. Revenue of over fifty million rupees is expected to NBRO from this project. Award of this project was won by NBRO after highly competitive bidding and this will keep NBRO as an organisation with a very competitive marketing edge.

OUTCOME

NBRO's landslide disaster risk reduction programmes over the past decade reduced the dangers of landslide hazard in the country to a considerable extent. Such risk reduction programmes included landslide mapping, site investigations, issuing early warnings in emergency situations based on continuous monitoring of risk, hazard mitigation, and conducting training and awareness of vulnerable communities. In spite of that, in some instances, the advice of NBRO, resettlement planning, preparedness and early warning, were all ignored resulting damage to lives and property, much to

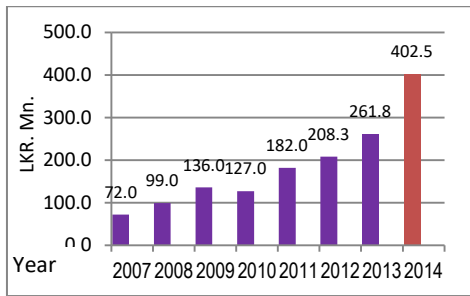
the dismay of all who took much effort to avoid these altogether. Landslide in Meeriyabedda was the major incident in 2014 resulting the loss and damage what could had been avoided if NBRO's advice were heeded. Knowing the overwhelming dangers of similar unstable locations NBRO is presently pressing hard the relevant authorities on early actions on resettlement and other options.

Numerous landslides, rock falls & cutting failures in Kalutara district following the extreme rainfall conditions resulted in NBRO deploying full staff strength to assessing risk, arranging resettlement and conducting investigations on subsequent requests numbering over 675 between June and July 2014. Then the major incident in Meeriyabadda once again demanded NBRO deploying maximum staff strength to arrest the disastrous situation prevailed and thereafter, to investigate and assess risk in over 330 hazardous sites in Badulla district. It was extremely important for NBRO to carry out these works but as a result, delays in some of the mitigation project activities and LRAR issuance work occurred.

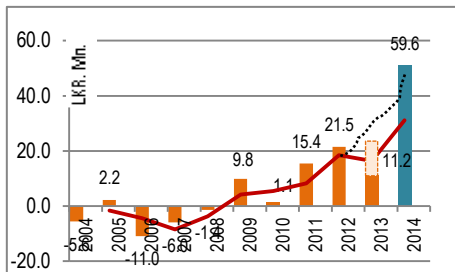
NBRO mediation is now key instrument in the national disaster risk reduction programmes, and the government invests on upcountry development only after establishing to well-planned risk management system.

REVENUE

NBRO generates revenue for its recurrent expenditure mainly through consultancy & testing services offered to state and private sectors. As such NBRO heavily relies on its self-earned revenue to provide for staff salaries and most institutional expenses.

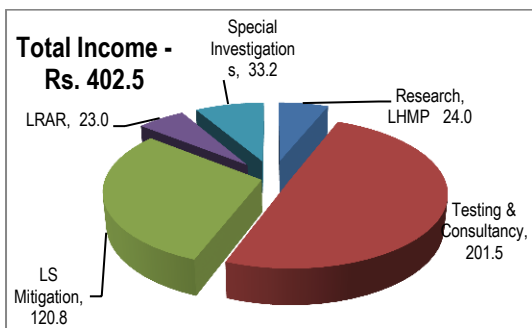


Total income for last eight years



Profit & loss record for last 11 years

Each year from 2010 onwards, NBRO recorded a net profit. Consolidated revenue of the year under review is the highest reported in the history of the NBRO. Total operating revenue LKR 402.5 Mn. reflects a growth of 53.5% over the previous year 2013. In this, the revenue component of around LKR 201.59 Mn. from testing and technical services shows remarkable growth.



Income by Category - 2014

CONSTRAINTS

There are some obstacles that hinder the development of NBRO, and they are:

- ✚ Act of NBRO has been drafted and approval of relevant authorities is expected before enacting by the Parliament. Absence of legal establishment is a weak point for NBRO.
- ✚ Staff turnover at NBRO is high because of higher remuneration, and benefits facilities offered elsewhere.
- ✚ Although NBRO functions as a self-funded institution, it is difficult sometimes to work as a competitive entity because of the government regulations. This lessens NBRO's competitiveness.

INITIATIVES FOR PRODUCTIVITY IMPROVEMENTS

NBRO in 2014 recorded remarkable progress to which the following actions proved to be productive.

- ✚ Equipment for landslide investigations donated by JICA improved the capacity of NBRO in landslide mitigation work.
- ✚ Capital equipment grant from the General Treasury was effectively utilized to increase technical capacity of NBRO.
- ✚ Working during afterhours is promoted by rewarding staff with a payment.
- ✚ Opportunities for foreign training and international exposure increased resulting staff motivation.

FUTURE PLANS

NBRO Corporate Plan 2014 – 2017 details the ambitious project implementation program that NBRO has

devised for next three years. Mitigation of several landslides like Garandiella, Punchiraththota, Passanwatte and Diyathalawa will be completed as early as possible with GOSL funds.

Four other major landslide mitigation projects have been already started with the technical and financial assistance of Japan International Cooperation Agency where investigations and designing works are now in progress. This work was formulated by NBRO as a component of “Integrated Landslide Mitigation project” where 47 landslide sites in the country needing mitigation were identified and prioritized.

In addition, the World Bank is providing funds for projects on mitigating unstable slopes surrounding 18 schools in Kandy district under Climate Resilience Improvement Project and these will be completed by 2016. Both the World Bank and the JICA are extending assistance in stabilizing the unstable roadside slopes in the hill country during 2015-2016 period. Further, NBRO will continue assisting the Roads Development Authority in their projects on remediation of failed slope in Southern Expressway and other major roads in the hill country.

APPRECIATION

I take this opportunity to thank the Hon. Mahinda Amaraweera, Minister of Disaster Management, Hon. Dulip Wijesekara, Dy. Minister of Disaster Management, and Mrs. S M Mohamed, Secretary of the Ministry of Disaster Management and Chairperson of Interim Management Committee whose direction and guidance have paved NBRO the way to this success. I also wish to thank members of IMC and Audit &

Management Committee, the Director Generals of Department of Budget, Department of General Treasury, National Planning Department, Disaster Management Centre, and the Department of Meteorology, who deserve great appreciation.

In addition, I express my sincere thanks to our stakeholders and valued customers for their continued confidence on us.

I am grateful to the dedicated employees of NBRO without the help of whom we will not be able to perform so well and achieve the challenging targets set so high for the 2014. Above of all, superiority of our performance is attributed to this remarkably competent team, their knowledge, skills and professionalism which is the backbone of NBRO.

We will continue working cooperatively to improve the NBRO performance further in the coming years and accomplish the mission and objectives set by our Corporate Plan. We are sure that our team members will be very supportive of each other and collaborate across teams in sharing ideas and achieving great outcomes.



Eng. (Dr.) Asiri Karunawardena
Director General

OUR VISION

“Creating a safer built environment”

OUR MISSION

Promote and sustain research and development and provide technical services for disaster risk reduction and safer built environment

CORPORATE GOALS

- To become centre of excellence in DRR and ensuring safer -built environment
- To ensure institutional sustainability
- To be a competent technology provider
- To continue functioning as the national focal point for landslides and associated geo hazards
- To continue as a centre for technological information

MANAGEMENT OF NBRO

Presently a Cabinet approved Interim Management Committee (IMC) with Secretary of the line ministry as the Chairperson guides and directs the administrative, financial and management functions of NBRO.

MINISTER IN CHARGE OF THE SUBJECT

Hon. Mahinda Amaraweera
Minister of Disaster Management

Hon. Dulip Wijesekara
Dy. Minister of Disaster Management

INTERIM MANAGEMENT COMMITTEE

Mrs. S. M. Mohamed (Chairperson)
Secretary, Ministry of Disaster
Management

Dr. Asiri Karunawardena,
Director General, National Building Research
Organisation

Maj. Gen. L B R Mark (Retd.),
Director General, Disaster Management
Centre

Mr. G S Kumara
Director,
Department of Treasury Operations

Mr. Sanjeewa Wijesinghe,
Deputy General Manager Civil Works
Central Engineering Consultancy Bureau

Mr. H U R Fonseka,
Chief Accountant, Ministry of Disaster
Management,

Mr. Lalith Chandrapala
Director General, Department of Meteorology

AUDIT & MANAGEMENT COMMITTEE

Mrs. S K Samarasinghe
Audit Superintendent, Government Audit
Branch

Eng. (Dr.) Asiri Karunawardena
Director General, National Building
Research Organisation

Mr. G S Kumara
Director, Department of Treasury
Operations

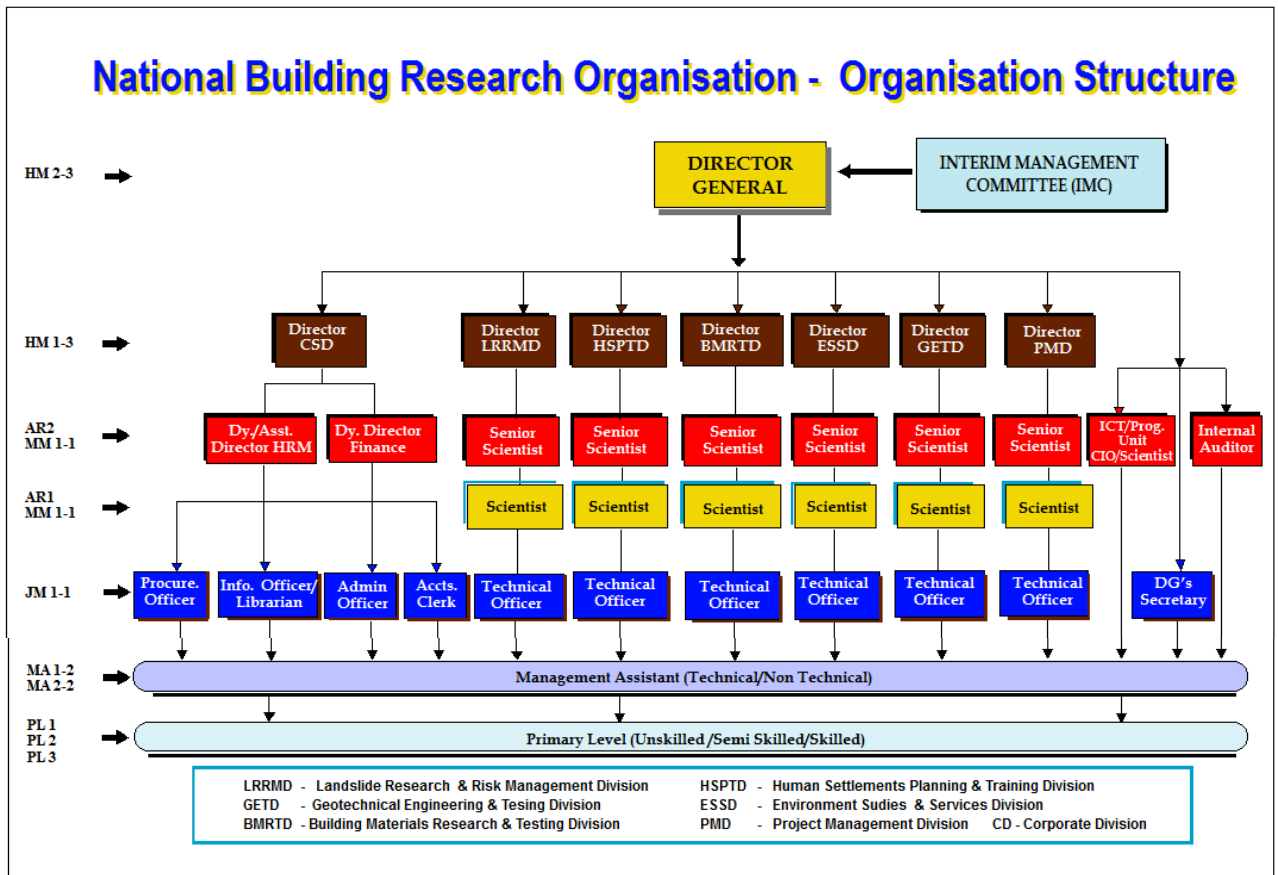
Mr. R K Jayaweera
Director (Corporate),
National Building Research Organisation

Mr. Sanjeewa Wijesinghe,
Deputy General Manager, Central
Engineering Consultancy Bureau

Mr. P Rupasinghe
Asst. Director (Finance), National Building
Research Organisation

Internal Auditor,
National Building Research Organisation

ORGANISATION STRUCTURE



SENIOR MANAGEMENT

Director General

Eng. (Dr.) Asiri Karunawardena

**Director,
Corporate Division**
Mr. R. K. Jayaweera

**Director, Landslide Research &
Risk Management Division**
Mr. R.M.S Bandara

**Director, Human Settlements
Planning & Training Division**
Mr. Kishan Sugathapala

**Director, Environmental Studies &
Services Division**
Mrs. S. V. Dias

**Director, Geotechnical Engineering
& Testing Division**
Mr. Kithsiri N Bandara

**Director, Project Management
Division**
Mr. M I D H Wijewickrama

Head, Building Materials Research & Testing Division
Mrs S. Muthurathna

OPERATIONAL HIGHLIGHTS-2014

Having made steady and impressive progress over the past three years National Building Research Organisation (**NBRO**) stands now as a leading R & D institution and technical service provider in the country. With its experts coming from multiple disciplines extending their invaluable inputs, and as an institution backed by its modern facilities,



NBRO's expertise is sought in varying fields ranging from geotechnical engineering, building materials technology, human settlements planning, environmental management & engineering and project management and also in many other emerging fields in the country, landslide mitigation, ground subsidence, disaster resilience and drought adaptation.

NBRO presently serves as the research arm and the technical service provider of the Ministry of Disaster Management, as a result of which NBRO is now a main institution devoted to building disaster resilience in the country in view of achieving its mission "Safer Sri Lanka". NBRO recognizes the need to solve disaster related problems faced by the nation in their living environment, and is geared up to provide technical interventions to maintain and improve the quality of life of the people.

During the year under review NBRO carried out the following specific tasks in line with its designated functions, Corporate Plan and Annual Action Plan:

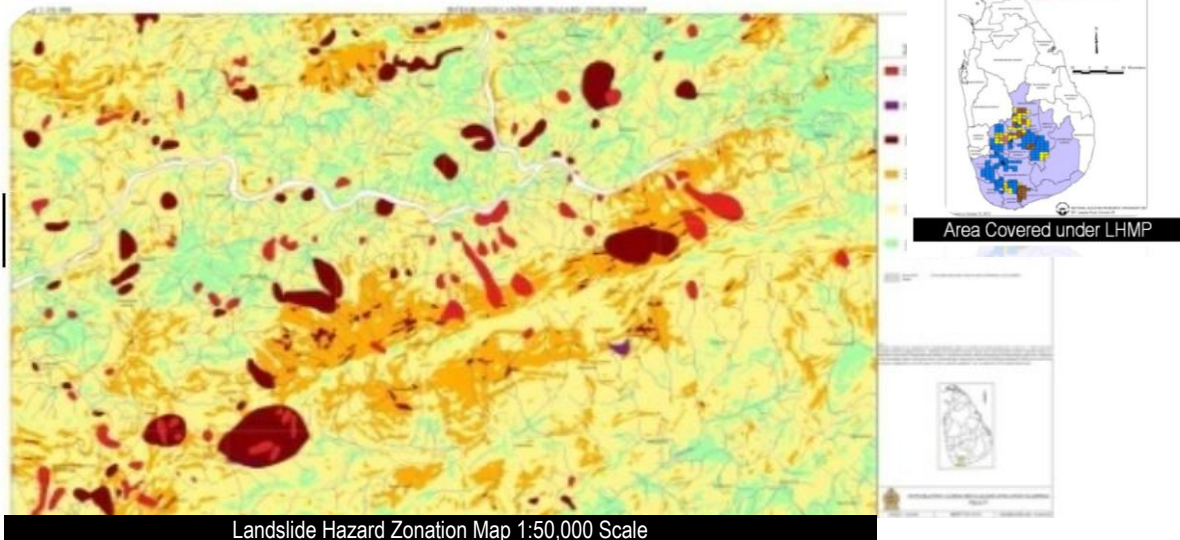
GOSL Funded Projects

Landslide Hazard Zonation Mapping Programme (LHMP):

This project funded by the government identifies spatial distribution of landslide hazard and as an outcome, produces maps to the scales 1:10,000 and 1:50,000. Government grants are annually given to carry out his important task and in 2014, a sum of LKR 24.0 Mn. was spent for the mapping program. Following activities have been carried out during 2014.

1. Landslide Hazard Mapping in Kurunegala (1:50,000)
2. 1:10,00 scale field mapping covering 320 sq. km in Kandy District
3. Digital data compilation and preparation of final hazard map of 400 sq. km in Kegalle and Hambanthota district
4. Digital data compilation and preparation of final hazard map of 400 sq. km in Hambanthota district

These hazard zonation maps produced by this project are an indispensable national asset, because they are used in very important tasks of issuance of landslide early warning, and in all other landslide investigation work leading to hazard risk assessment, issuance of Landslide Risk Assessment Reporting, and identification and prioritization of potentially dangerous sites for mitigation. These are also now widely used in national and regional level planning by various institutions. Most of these maps are available for downloading free of cost in the NBRO website (www.nbro.gov.lk).



Landslide Risk Assessment Reporting Process (LRAR)

Since March 2011, NBRO carries out the issuance of Landslide Risk Assessment Reports (LRARs) and recommendations needed for all types of development and construction activities in landslide prone areas. These LRARs are now a pre-requisite for building permits approved by a local authority. As of end 2014, a total 7210 applications were received out of which 6647 applications have been attended. The total applications processed so far since 2011 inception is 38,070. Treasury has provided LKR 24.0 Mn In the year 2014 under recurrent expenditure.

Landslide Special Investigations

As and when requested by District and Divisional Secretaries, or by officials of other governmental institutions NBRO performed landslide investigations for identification of risks in relation to neighbouring human settlements, infrastructure and plantations and further, provided immediate recommendations to ensure the safety of life and property. A total of 2193 investigations were performed over such requests in the year of 2014.

Investigations in Kalutara district following the extreme rainfall conditions resulted in NBRO deploying full staff strength to assessing risk, and arranging resettlement in 690 sites during June to July 2014. Then the major incident in Meeriyabadda in October occurred and once again demanded NBRO deploying maximum staff strength to arrest the disastrous situation prevailed. Afterwards, 823 sites in Badulla district were investigated during Oct to Dec 2014.

Total amount for the work done is LKR 37.835 and the treasury provided LKR 33.23 Mn.

Landslide Mitigation Projects (GOSL Funded)

Mitigation of Garandi Ella Landslide

The mitigation of Garandiella Landslide commenced in 2011 due to the severe landslide threat. This mitigation is done as an alternative to the relocation of 50 houses that were under the threat, relocation of Kothmale town or construct earthen dam to divert debris flow, diversion of debris flow downstream before Kothmale reservoir, or re-routing of few main roads.

Total estimated cost : LKR 98.0 Mn.

Time period : 2011– 2017

Total Estm'd Cost	Utilisation of Treasury funds			
	2011	2012	2013	2014
LKR 98.0Mn	5.0	14.82	29.0	14.0 (Allocation 30.0)

The major activities of construction & development in the project are:

1. Construction of surface drainage system (continued)
2. Construction of subsurface lateral drains including 3 vertical test holes (core drilling, piezometer installation, & horizontal drains) & retaining wall (completed)
3. Maintenance of existing surface drains
4. Maintenance of drainage well & installation of automatic pumps and power supply
5. Project management work
6. All major activities including erosion control measures will be continued in 2015



Ongoing mitigation work- Development of drainage system

Mitigation of Punchi Rattota deep seated landslide

This project was started in 2013 and to be completed in 2015 with funds from the General Treasury. The works planned in this project are the topographic survey, geotechnical investigations and design of mitigation measures and implementation of mitigation measures and construction of surface drains. Out of these, excavation A-A section and cascade at RDA culvert have been fully completed. The alternative design instead of PVC drain is in progress.

Total estimated cost : LKR 65.0 Mn.

Time period : 2014– 2017

Total Estm'd Cost	Allocation of funds by the Treasury			
	2014	2015	2016	2017
LKR 65.0Mn	15.0 (Actual 13.1)	20.0	20.0	10.0

Rectification of failed slope at Diyathalawa Main Bus Stand

The project was commenced in 2014 and to be completed in 2015 with the funds from the General Treasury. The work components of this project are:

1. Topographic survey, geotechnical investigations and design of mitigation measures
2. Earth work (demolition, earth excavation , reshaping & debris removal)
3. Slope protection (Soil nailing, Shot-creting and installation of steel net
4. Construction of drainage system

Out of above project components the following work have been already completed.

1. Redesign of proposed rectification work and awarding the contract
2. Excavation of first and second berm, and
3. Soil nailing work is in progress

Total estimated cost : LKR 52.0.0 Mn.

Time period : 2014– 2015

Total Estm'd Cost	Allocation of funds by the Treasury			
	2014	2015		
LKR 52.0 Mn	30.0 (Actual – 19.53)	22.0		

Stabilisation of unstable slopes in Passenwatta residential area in the Gampaha District

This project was also commenced in 2014 and to be completed in 2015 with funds from the General Treasury. The following work has been planned for implementation under this project.

1. Topographic survey, geotechnical investigations and design of mitigation measures
2. Compulsory reports; Socio economic survey and pre condition report
3. Construction of retaining walls and back slope preparation, and
4. Drainage improvement activities

Presently the work that has been completed are,

1. investigations, HS Survey design & site clearance done & construction work ongoing
2. Segment 1 retaining wall excavation 100% construction up to 3 m height
3. Segment 2 entrance path & and road improvement, and
4. Backfilling 40% completed

Total estimated cost : LKR 35.0 Mn.

Time period : 2014– 2015

Total Estm'd Cost	Allocation of funds by the Treasury			
	2014	2015		
LKR 35.0Mn	20.0(Actual – 9.3)	15.0		

Landslide Mitigation Program

A project was formulated in 2014 to mitigate hazardous landslides and unstable slopes surrounding selected schools in several districts at a total cost of LKR 69.0 Mn in which the work in the following sites have been already started.

- i Udgomadiya Vidyalaya, Katuwana, Hambanthota (LKR 12.74 Mn.) (2014-2015), (2014- LKR 9.3 Mn.)
- ii Wathukanda Vidyalaya, Katuwana, Hambanthota (LKR 6.2 Mn.) (2014)
- iii Siyarapita Maha Vidyalaya, Katuwana, Hambanthota (LKR 7.7 Mn)(2014)
- iv Hingurukanda Maha Vidyalaya, Katuwana, Hambanthota (LKR 5.3 Mn.)(2014)
- v Dickwela Vijitha Maha Vidyalaya, Matara (LKR 11.7 Mn.)(2014)
- vi Ovitigamuwa Mahav Vidyalaya, Matara (LKR 8.2 Mn)(2014)
- vii Kandurata Maha Vidyalaya, Gantuna, Kegalle (LKR 20.6Mn.)(2014)

Research & Development Program

In 2014, government grant of LKR 12.0 Mn was given to NBRO to conduct research and development. These funds were effectively utilised and the following research projects focused on the research on disaster resilience were conducted. However, a NBRO annual symposium was not held in 2014 to present their outcome.

R & D projects continued from previous year

1. **Development of 'Disaster Resilient Housing Construction Manual':** A manual has been compiled to assist home builders and construction professionals in incorporating disaster resilient features into the design and construction, and also in learning correct construction techniques.



Disaster resilient housing manual



Housing design in landslide-prone areas



Landslide resilient house



Model house resilient to high winds

2. **Constructing Disaster Resilient Houses Designed for Major Disasters:** In this research project, model houses were designed with disaster resilient features and built as a pilot study. The details are:

- 3 model houses in Hambanthota district resilient to landslides and floods under the NBRO research program
- 3 No. flood, landslide and tsunami resilient model houses
- 3 No. flood, landslide and high wind resilient type model houses in line with "Deyata Kirula National Development Programme – 2014"

3. **Research Study on GIS Modeling for Increasing the Accuracy in Landform Mapping:** This study focused on developing techniques for integrating GIS techniques into present landform mapping.

4. **Developing a Tool Kit to Assess School Safety for Landslides:** In this study a risk analyzing tool was compiled that can be used to (i) assess risk levels of landslide, flood and cyclone hazards, (ii) decide on appropriate mitigatory measures in existing schools, (iii) prioritize such mitigation projects, and (iv) provide appropriate design of new schools.

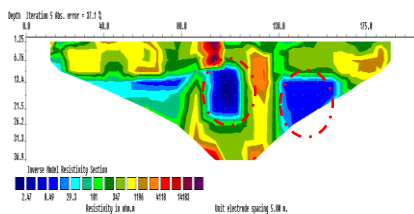
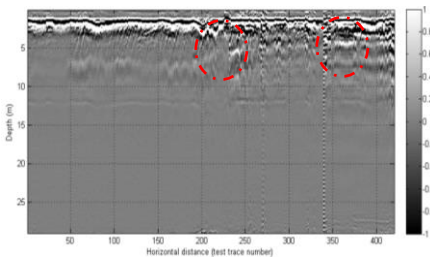
5. **Preparation of Drought Index for Local Level Decision Makers:** In this study, methodologies were developed for studying and predicting wet and dry weather periods in the country using past data and accurate forecasting techniques, and this would benefit water forecasters and agriculture planners to learn beforehand water availability for their functions.



Model house resilient to flood



Model house resilient to tsunami



Ground Subsidence / Sinkhole observed in Nov, 2014 at atale (top- Sink hole, Middle- GPR profile, Bottom- Resistivity profile)

6. **Research on Verification of Effectiveness of the horizontal drilling machine especially for soil nailing works in the landslide mitigation activities:** In this project the application of soil nailing as a tool for landslide risk reduction and the effectiveness of horizontal drilling machine in this work were studied.
7. **Development of light-weight building blocks with bottom ash from coal fired thermal power plants:** In this project, bottom ash from the power plant, which is presently a waste material needing disposal was used as a substitute to sand in the development of new type of a cement block.
8. **Use of nano fly ash for enhancing properties of concrete:** Use of nano fly ash particles to enhance properties of concrete was studied in this research. Outcome of this research is expected to lead to new concrete materials having superior strength and characteristics that can make structural members smaller and compact, and that can be used in disaster resilient construction.
9. **Geotechnical characteristics of unsaturated lateral soils in upcountry in Sri Lanka:** This project gathered soil properties by collection and analysis of various soil samples from different areas in the upcountry. This project is incomplete.
10. **Preliminary surveys on use of ground vibration for the determination of landslide hazard:** As ground vibration can trigger landslides, this project studied how the monitoring of ground vibration can be used to assess and predict landslide hazard in vulnerable areas.
11. **Research on Vulnerability and risk assessment for land subsidence.** In this project, resistivity analysis was carried out to model cavities underneath earth surface in selected areas first, and then vulnerability and risk assessment were carried out. Studies were carried out to relate hydrology to land subsidence and learn more about gas pressure and chemical reactions in sinkholes. Outcome of studies were used in subsurface mapping and in preparing procedures for designing resilient foundations in such land subsidence prone areas.

- 12 **3-D resistivity survey to investigate subsurface conditions of Land subsidence occurred in Kalutara:** In this project, ground subsidence issues in Rideewita and Pthalwatte areas in Kalutara district were studied.
- 13 **Risk Management around Matale in Central Province:** Ground subsidence is presently a critical issue in Matale area. This research study was on developing risk management in the affected area.

R & D projects of 2014 that will be continued to 2015

1. Establishing threshold rainfall intensities for slopes in Sri Lanka



Test in progress

Location specific criteria for predicting landslide triggering probability are being established by this research work. Tests using pressure plate apparatus to check the soil water characteristics are extensively used in this research. By this test the shear strength parameters of residual soil at different saturation levels can be determined. Location for the research has been selected at Welipana landslide area.

2. Bioengineering methodologies for covering surfaces of engineered slopes



Concrete and masonry surfaces of retaining structures are aesthetically alienating in appearance whereas such surfaces covered with green vegetation are more appealing to the eye. Research is in progress to find and establish a suitable vegetation cover to structures of slopes stabilized by NBRO in Diyathalawa Township.

3. Water resource health deterioration risk of groundwater in Krastic aquifer systems in areas under risk of land subsidence hazard in Matale district



Species of fish from krastic aquifer

Communities living in land subsidence prone areas in Matale district have been affected by deterioration of water quality. Research has been conducted to study water availability, consumption patterns, and quality status in underground water bodies to ascertain suitability as drinking water and health risks to communities and then devise strategies for source protection of underground water bodies.

4. Production of wall putty using crushed rock dust



Crushed rock sand dust in a quarry

Crushed rock dust is considered as a waste material. As this material is freely available in quarries, attempt is made to develop a new plaster material for construction industry with blending with additives. This can replace the use of river sand, mining of which causes environmental degradation and bank erosion in rivers.

5. Building performance of sandwich panels made out of building debris & stabilized earth



Stabilised soil wall constructed with debris

Sri Lanka is facing a shortage of conventional building construction materials. In this research work, building debris and selected soils are used as alternatives to make stabilized earth sandwich panels for walling and these panels are cast and tested for their suitability in housing construction. Research is in progress with collaboration with University of Moratuwa.

6. Factors affecting the occurrence of landslides due to open cast mining
7. Stabilization of a landslide using an underground dewatering methodology
8. Land subsidence risk management around Matale in Central Province of Sri Lanka
9. Preliminary survey on use of ground vibration for the determination of landslide hazard
10. Study on land selection and construction mechanisms applied in landslide disaster settlement projects
11. Development of domestic water stress management plan, a tool to manage water scarcity in drought hazard prone areas of Mahaweli H system
12. Subsurface geotechnical mapping for disaster resilient housing
13. Development of light-weight building blocks with bottom ash from coal fired thermal power plants
14. Use of nano fly ash for enhancing properties of concrete

Major Consultancy Projects

Reservoir Water Quality and Sedimentation Studies

This major study was undertaken for Dam Safety and Water Resources Management Project of the Ministry of Irrigation and Water Resources Management and it will continue up to 2015. Details of the project work are as follows;

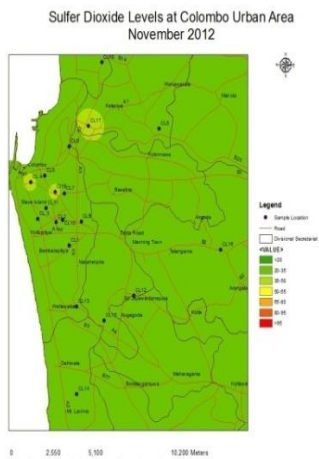
Main Study:

- ☉ Analysis of WQ data bases. Polgolla, Kothmale, Kalawewa.
- ☉ Monitoring watershed water quality, Monitoring Reservoir water quality in Polgolla, Kothmale, Kalawewa
- ☉ Preparation of a watershed management plan for Polgolla reservoir
- ☉ Bathymetry survey of Polgolla, Inginimitiya, Kalawewa, Rantambe.
- ☉ Procurement of water quality monitoring & Bathymetry survey equipment for MASL



Monitoring of reservoir water quality

Establish Policy and a Methodology to Study Ambient Air Quality in Main Urban Cities in Sri Lanka by using Passive Air Quality Monitoring Technique

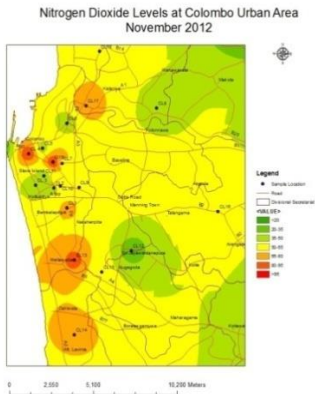


NBRO carries out this study in collaboration with Department of Motor Traffic and Ministry of Environment and Natural Resources. Data on air quality at identified cities are collected to assess the impact of vehicle emissions on ambient air quality in relation to the Vehicle Emission Testing programme.

Funds: VET funds through Registration of Motor Vehicles

Objective: To establish the ambient air quality database in main urban areas

Aim: Data collection and analysis for decision making in urban air quality management and transport planning for vehicular emission reduction



Project Component:

1. Colombo, Gampaha, Kalutara, Rathnapura & Galle, (Allocation - LKR 1.90 Mn. for 2012-2013)
2. Kandy, Kurunegala, Anuradapura & Badulla (Allocation - LKR 1.50 Mn. for 2013-2014)

Study Methodology: Sampling to represent different environmental conditions in urban areas in Colombo (19 locations), Gampaha (11), Kalutara (05), Rathnapura(11), Galle (06), Horana (05) and Monthly average exposure levels of SO₂ and NO₂ are measured.



Monitoring of air quality

Geotechnical Investigation Projects

NBRO conducted geotechnical engineering work of some important infrastructure projects in the country. This work included ground exploration, testing of geo materials in its well-equipped laboratory and engineering design. Further, as research work, studies on understanding the behaviour of residual soil, expansive soil and peaty soil and finding appropriate construction technologies over the problematic soil types were conducted.

Soil Investigation for Landslide Disaster Protection Project

Client	:	JICA
No. of boreholes investigated	:	40 Nos.
Project Duration	:	6 ½ months
Project Cost	:	LKR 49.5 Mn.
Status	:	Project completed successfully



Geotechnical investigation in progress

Soil Investigation & Stability Assessment for Greater Kandy Water Supply Project

Client : Ministry of Local Government and Provincial Councils
Project Duration : 4 months
Project Cost : LKR 2.3 Mn.
Project completed successfully

Soil Investigation for Expressway from Godagama to Andarawewa Alternative Trace Section 2

Client : Road Development Authority
No. of boreholes investigated : 43 Nos.
Project Duration : 4 months
Project Cost: LKR 8.60 Mn.
Status : Project completed successfully



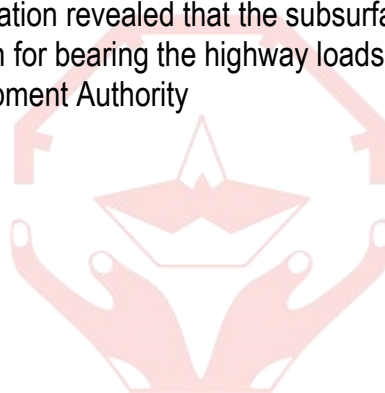
Soft Ground Treatment Design of Southern Expressway Extension

The detailed soil investigation revealed that the subsurface is having soft soil and needs appropriate design for bearing the highway loads.

Client – Road Development Authority

Project – LKR 6.9 M

Status – ongoing



Project Management Work

NBRO as a consultancy service officers project management services. In addition, the consultancy service that NBRO offers in the condition assessment of buildings, evaluation of damaged buildings, and preparation of condition reports including recommendations for defect rectification and structural stability has a high demand.

Project - Construction of the National Centre for Non-Destructive Testing for Atomic Energy Authority

Construction of National Centre for Non-Destructive Testing (NCNDT) for Atomic Energy Authority under the Ministry of Technology, Research and Atomic Energy is underway. PMD has been entrusted to provide the Consultancy Services on construction supervision and payment certifications to the Contractor, Sri Lanka Land Reclamation and Development Corporation (SLLR&DC) during the construction period.

Consultancy fee of NBRO - LKR 3.1 Mn

Status - completed



Construction work of NCNDT in progress

Project -Design & Construction Supervision of Slope Failure At 42.5 Km on Southern Expressway

TEC – LKR 206.0 Mn

NBRO Consultancy package LKR 18.73 Mn.



Mitigation of failed slope

Project - Restoration of old Auditor General's buildings and creating the Arcade



Restoration in progress



Extent of damage



Upon resetoration



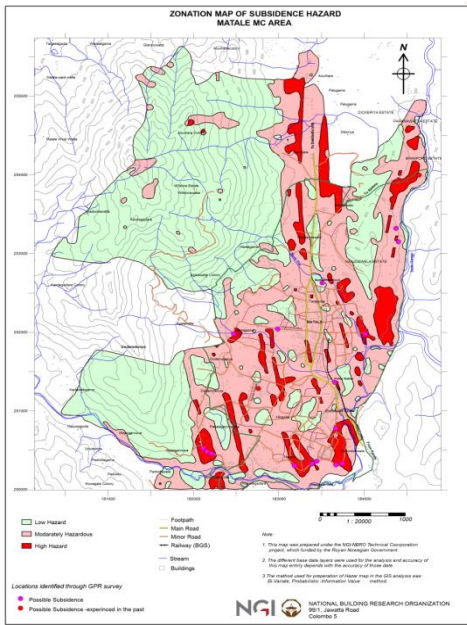
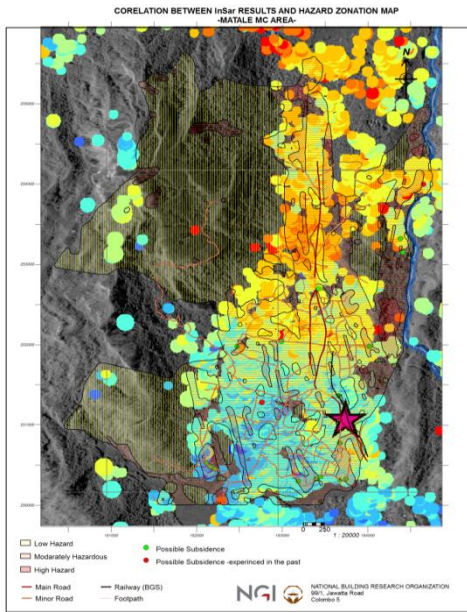
Other Income Generating Activities

✚ NBRO continued the provision of technical testing and consultancy services in the fields of landslide studies and services, geotechnical engineering, project management services, building materials, human settlements planning and environmental management and this work continued to strengthen the financial viability of the institution. Testing and consultancy services provided by NBRO are summarised below:

Activity/ Division	No of consultancy Jobs	No of Testing Jobs	Total Income Generated (LKR. Mn.)
Landslide Research & Risk Management Division	1042	-	36.64
Geotechnical Engineering & Testing Division	74	126	73.80
Disaster Impact Studies Division	6	520	32.27
Building Materials Research & Testing Division	207	2,045	25.54
Project Management Division	70	-	22.02
Human Settlements Planning & Training Division	11	-	5.63
Corporate Division			5.69
Total	1,410	2,691	201.59

Projects with Foreign/Donor Collaboration

NBRO - NGI Technical Cooperation Project



INSAR Studies and Hazard Zonation Map of Matale

NBRO commenced the project "Institutional Cooperation on Mitigation of Natural Disasters due to Climate Change" in collaboration with the Norwegian Geotechnical Institute (NGI) a world-renowned geotechnical institute with extensive experience in global studies. This project promotes sharing experience in geo-hazards and enables NBRO staff to learn about NGI experience on landslides and land subsidence.

Initially the technical cooperation project enabled NBRO and NGI to study landslide studies during which period the NGI donated 3 automated rain gauges to the rain gauge network of the Landslide Early Warning System of NBRO. Then NGI assisted in land subsidence studies that NBRO conducts in Matale district and donated NBRO Ground Penetrating Radar equipment to NBRO and trained the staff on the use of this equipment in ground subsidence studies. The technical cooperation project continues with NGI in association with Geological Survey of Norway assisting in interpretation of INSAR satellite imagery and aerial maps in the trend analysis of ground subsidence in affected areas. Royal Norwegian Embassy (RNE) in Colombo provides financial assistance to this project.



Commissioning automated rain Gauge



GPR Training



GPR survey in progress

NBRO -Vanderbilt Institute for Energy and Environment (VIEE) of USA Technical Corporation Project

NBRO collaborated with Vanderbilt Institute for Energy and Environment (VIEE) of USA to conduct a five year study "Agricultural Decision-making and Adaptations to the Precipitation Trends in Sri Lanka" (ADAPT-SL) starting from 2012. This study aims at development of regional level drought indices coupled with short- and long-term drought forecasting methods. As water scarcity is now a growing concern, farmers find themselves challenged by new conditions that require adaptation to farming practices without relying on traditional practices to manage water.

The research draws on the core disciplines of psychology, sociology, hydrology, and engineering in order to investigate the issues among paddy farmers within the Mahaweli River Watershed (MRW) of Sri Lanka. A survey of farmers in the dry zone to assess cultivation practices, perceptions of environmental change, perceptions of water scarcity and actions taken to adapt to drought was conducted and Climate Research Unit (CRU) was established at the HSPTD for carrying out work related to this project with VIEE donated funds.



Field survey in progress

UNDP-NBRO Technical Cooperation Project for enhancing real time landslide forecasting and early warning capacity of NBRO

The project for establishment of 35 automated rain gauge stations in pre-selected catchments in Badulla, Kandy, Kegalle, Kurunegala Matale & Nuwara Eliya districts was commenced in the year 2013 and completed in 2014. Now, these stations are now working in the automated rain gauge network of NBRO for landslide early warning. A project to install another 20 gauges has already started to cover Kalutara district as well and this project will be completed in 2015. This project is beneficial to the rural communities living in vulnerable areas.



Installation of automated rain gauges in progress in Kithulgoda and Palindanuwara

Landslide Mitigation Projects (Foreign Aid and Technical Cooperation)

Integrated Landslide Mitigation Project Phase I - Japanese Technical Cooperation for Landslide mitigation Project

In this important project four landslide locations were selected for mitigation and preliminary site investigation and submission of report were completed first. Then the joint inspection with JICA experts of JICA Technical support program was completed in 2014. Financial and technical assistance of this project is given by the Japan International Cooperation Agency. The implementation of proposed mitigation measures is now in progress in the following sites and expected to be completed by 2015.

1. Badulusirigama/Uva Wellassa University premises in Badulla District, Uva Province
2. Nurse's Training College, Kandy in Kandy District, Central Province
3. Alagumale in Matale District, Central Province
4. Udamadura in Nuwara Eliya District, Central Province

Climate Resilience Improvement Program (World Bank Funded)

Component 2 Building Climate Resilience Infrastructure (2014 – 2016)

This program is implemented by the Ministry of Irrigation and Water Resource Management and the technical inputs for landslide mitigation are provided by NBRO.

Sub-component – School Protection (US\$ 7.0 Mn)

This component implemented by NBRO covers slope stabilisation and drainage improvements of 18 selected schools in Kandy District. NBRO has completed investigations and design of work for Darmaraja, Mahamaya, Hillwood and Gothami Vidyalaya and the estimated cost of the work is LKR 336.69 Mn.

Subcomponent - Transport Continuity (US\$ 26.0 Mn)

This project covers improvements and stabilisation of unstable slopes in

1. Kandy – Mahiyangana Road (18 locations)
2. Awissawella- Hatton Road (1 location)
3. Beragala – Wellawaya Road (2 locations)
4. Kegalle – Bulathkohupitiya Road (1 location)

NBRO has so far completed work under Mahiyandana – Kandy road for which the estimated value of work is LKR. 548.52 Mn.

Symposia and Conferences

NBRO ANNUAL SYMPOSIUM

The NBRO Annual Symposium of 2013 was not held in 2014.

DISASTER MANAGEMENT CONFERENCE - 2014

NBRO took an active role in organising the Disaster Management Conference 2014 'The future we want – A safer Sri Lanka' that was held in Colombo in September, marking the tenth anniversary of Great Tsunami in Indian Ocean in 2004. The GoSL initiated many disaster risk reduction initiatives during the past ten years to make the country disaster resilient through the Ministry of Disaster Management, other stakeholder ministries, line agencies and departments, and also through the active involvement of the private sector, donors and other agencies both local and international, who willingly came forward to collaborate and assist in this important endeavour. The Conference became the venue for looking back on these initiatives, their effectiveness and drawbacks, and by learning through such experience, to propose on future directions, plans and programmes. The Conference Proceedings were published together with papers, reports and other information received from stakeholders.

As per the decision taken by the Ministry of Disaster Management the vast amount of information gathered in this Conference was utilized in the compilation of the vision document 'DM 2020 Disaster Management Strategy of Sri Lanka'. Strategic ideas outlined in this document were extracted after reviewing of existing disaster management specific national strategies, policies, plans and programmes, and relevant other national policy and strategy materials. Additionally relevant other global, regional and national disaster management initiatives were explored and reviewed too. Furthermore, feedback was gathered from relevant resource persons, stakeholders, agencies and institutions interacted as part of the Conference was collated together with information extracted from the references and finally, these have been summarised into the document DM 2020 which represents a valuable body of information that is also listing a comprehensive and coherent set of emerging priorities.



Disaster Management Conference: The future we want – safer Sri Lanka

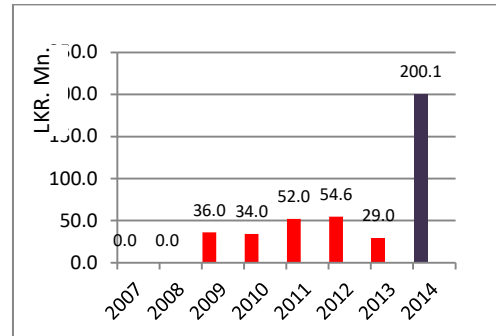
FINANCIAL HIGHLIGHTS

In 2014, NBRO recorded consolidated revenue of LKR 402.5 Mn. that reflects a growth of 53.5% over the previous year.

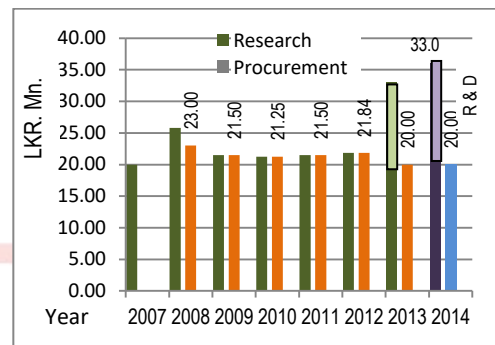
Revenue from customary NBRO services LKR 165.82 Mn. shows remarkable 21.5% growth in 2014. The institution depends mostly on this consultancy revenue generated to meet its recurrent expenditure.

LKR 200.1 Mn. has been received under government grant for mitigation of high risk landslides in 2014.

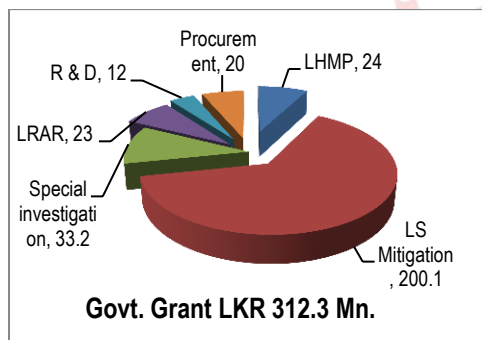
Nine district offices of NBRO have been functioning since March 2011 for issuance of Landslide Risk Assessment Reports for development work in landslide-prone districts. LKR 23.0 Mn. was provided by the Treasury as recurrent expenditure and the balance requirement was met with nominal fee charged from applicants and rest by NBRO revenue.



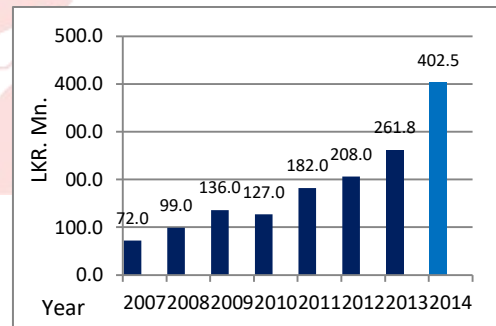
Landslide mitigation budget



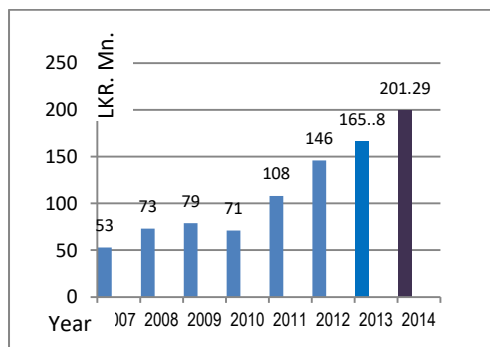
Research and procurement grant



Government Grant 2014



Total income



Income by testing & consultancy

In addition, Research Grant for Landslide Hazard Mapping of LKR 24.0 Mn. together with LKR 12.0 Mn for the Research & Development was received. Grant for Landslide Special Investigations of LKR 33.2 was received including LKR 24.2 Mn. for the additional investigation due to extreme climatic events happen in Kalutara in June and Nuwaraeliya upon reactivation of Meeriabedda Landslide in late October 2014. LKR 24.2 Mn. was reallocated by the Treasury from the Grant allocation for Landslide Mitigation Program 2014.

Procurement Grant for lab & field, office equipment of LKR 20.00 Mn. was received from the Treasury as anticipated.

The total operating revenue for year 2014 was LKR 402.5 Mn. while total operating expenditure for the corresponding period was LKR 342.8 Mn. A net profit of LKR 59.6 Mn. was recorded.

The expenses on personal emoluments for the staff strength of 233 plus daily paid employees was LKR 160.2 Mn. as against the staff strength of 237 plus daily paid employees was LKR 126.7 Mn. in year 2013.

The institution growth and enhanced performance have been mainly due to the courageous effort of the management and the staff of NBRO.



STATEMENT OF FINANCIAL POSITION

STATEMENT OF FINANCIAL POSITION AS AT 31ST DECEMBER 2014

LKR

	Annex No	As at 31.12.2014		As at 31.12.2013
ASSETS				
Current Assets				
Cash and cash equivalents	1		153,524,050	24,334,897
Receivables -				
Project Debtors	2	10,243,345		
Sundry Receivables	3	31,930,589	42,173,934	43,199,268
Inventories	4		1,649,724	1,455,612
Prepayments	5		20,949,289	13,926,960
Other Current Assets				
Project work in progress	6	132,182,194		17,666,170
Others	7	72,038,849	204,221,043	61,237,860
			422,518,040	161,820,767
Non - Current Assets				
Infrastructure, Plant & Equipment	8		325,357,848	276,401,551
Total Assets			747,875,888	438,222,318
LIABILITIES				
Current Liabilities				
Payables				
Money Received from Clients	9		177,950,000	
Employee benefit payable	10		374,261	374,261
Sundry payables	11		38,074,586	16,243,603
Advance received from General Treasury	12		2,700,229	
			219,099,076	16,617,864
Non - Current Liabilities				
Long term provisions				
Depreciation	13	236,173,130		205,138,999
Gratuity & Bad debtors	14	50,512,581	286,685,711	41,615,421
Total Liabilities			505,784,787	263,372,284
Net Assets			242,091,101	174,850,034
NET ASSETS / EQUITY				
Capital contributed by Government & Other entities	15		160,207,591	181,208,155
Reserves – Revaluation Surplus			27,875,989	27,875,989
Assets acquired			2,264,498	2,264,498
Accumulated Surplus/ (Deficit)				
Surplus brought forward		(36,498,608)		(36,498,608)
Transfer from Other Grants		25,493,260		
Surplus for the year		62,748,371	51,743,023	
Total Net Assets / Equity			242,091,101	174,850,034

STATEMENT OF FINANCIAL PERFORMANCE

STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED 31ST DECEMBER 2014

LKR

Description	Annex	For the year ended 31st December 2014		For the year ended 31.12.2013
<u>REVENUE</u>				
Fees, Fines, Penalties & Licenses	16		258,128	136,644
Other Revenue – Divisional net Income				
Environment Studies & Services Division	17	3,833,570		10,986,323
Geo Technical Engineering & Testing Division	18	21,727,150		(2,855,494)
Landslide research & Risk Management Division	19	56,653,056		6,070,233
Human Settlements Planning & Training Division	20	(1,448,448)		7,636,000
Building Material Division	21	6,392,039		13,256,289
Project Management Division	22	2,465,608	89,622,975	1,526,536
Other income	23		5,699,258	5,341,658
Total (Gross Revenue)			95,580,361	42,098,189
<u>LESS:EXPENSES</u>				
Other Expenses				
Salaries, Wages and Employee Benefits	24	(29,317,505)		(24,874,497)
Grants and Other Transfer payments	25	(1,339,506)		(25,000)
Supplies and Other Consumables used	26	(15,619,260)		(15,404,152)
Depreciation and Amortization	27	(2,673,021)		(1,364,418)
Impairments of Property ,Plant and Equipment	28	(6,378,825)		(3,601,253)
Other Expenses	29	(17,263,844)		(10,554,987)
Finance Cost	30	(213,898)		(154,809)
Gross Expenditure		(72,805,859)		(55,979,116)
Less: Gen. overheads allocated to divisions	31	(39,973,869)		(28,765,493)
Total Expenditure			(32,831,990)	(27,213,623)
Less: Prior Year Adjustment				(3,656,607)
SURPLUS FOR THE YEAR		-	62,748,371	11,227,959

CASH FLOW STATEMENT

CASH FLOW STATEMENT FOR THE YEAR 2014

	31ST DECEMBER 2014	31ST DECEMBER 2013
Cash Flow Operating Activities		
Surplus / (Deficit) for the year	- 62,748,371	11,227,959
Research Grant		(33,000,000)
		(21,772,041)
Adjustments		
Depreciation	31,034,131	1,364,419
Provision for Gratuity	10,661,427	6,359,611
Gratuity Payment	(1,822,434)	(1,453,505)
Provision Bad Debtors	58,168	39,931,292
	-	6,270,525
Changes in working capital		
Decrease in Debtors	(6,514,538)	953,351
Decrease in Refundable Payments	(2,812,929)	354,168
Decrease in Sundry receivable- Grants & Projects	10,352,800	2,000,000
Increase in Advances	(5,898,875)	(6,189,965)
Increase in Pre payments	(1,123,453)	(1,740,778)
Increase in Inventories	(194,112)	(194,118)
Increase in Working In Progress	(114,516,025)	(5,215,280)
Increase in Deposits	(10,800,989)	(55,481,829)
Unused fund for research grant	2,700,229	
Money Received from Client	177,950,000	
Decrease in Sundry Creditors	50,000	(542,400)
Increase in Accrued expenses	20,380,225	3,926,224
Decrease in Refundable Deposits	1400758	70,973,091
	-	(623,635)
Net Cash flows from Operating Activities	173,652,754	(78,255,778)
Cash flows from Investing Activities		
Purchase of Fixed Assets	(48,956,297)	(24,501,775)
Cash flows from Financing Activities		
Government Grant (Research & Procurement)	4,492,696	51,000,000
Other Grants (Rain gauges)	-	18,701,860
	-	69,701,860
Cash and cash equivalents beginning of the period	24,334,897	57,383,591
Cash and cash equivalents as at end of the year	153,524,050	24,334,897

NOTES TO ACCOUNTS

1. Basis of Accounting.

Financial Statements have been prepared by complying with generally accepted Accounting Principles, Fundamental assumptions, Public Sector Accounting Standards and Accounting Standards introduced by the Institute of Chartered Accounting from time to time and also by considering the followings.

- (a) Going Concern
- (b) Consistently Application of Accounting Policies.
- (c) Revenue and expenses recognition on accrual basis.
- (d) Disclosure to deviations to Standards

2. General Accounting Policies.

2.1 Depreciation Policies.

- (a) Full depreciation is provided in the year of purchase and no depreciation is provided in the Year of disposal for all fixed assets.
- (b) Fixed assets are depreciated on Straight Line Depreciation methods using the following rates.

Fixed asset type	%
Buildings	2.5
Machinery and Lab Equipment	20.0
Furniture & Fitting	10.0
Vehicles	20.0
General Office Equipment	20.0
Drawing Office Equipment	10.0
Tools	50.0
Library Books	5.0
Fire Extinguishers	10.0

- (c) Depreciation for granted assets has been deducted from the carrying value of grants as stipulated in Sri Lanka Accounting Standards.

2.2 Valuation of Closing Stock

Materials utilized and closing stocks have been valued at cost.

2.3 Provision for Gratuity

Provision for gratuity is calculated in accordance with the Gratuity Act.

2.4 Provision for Bad Debtors

A Provision has been made for doubtful debts on the basis of;

- (a) 1 % Provision is made for debts outstanding over 2-10 years.
- (b) 25 % Provision is made for debts outstanding over 10 years.

3. Bad debts written off during the years.

Aggregated unrecoverable sundry debtors of private and public sector have been written off during the year as follows.

IMC Approval	Amount (Rs).
IMC/10-05/2014	461,594.69
IMC/09-12/2014	310,409.36
IMC/10-12/2014	4,144,673.06
IMC/11-12/2014	327,682.84
Total	5,244,359.95

4. Government Grants.

Description	For year 2014 Rs.	For year 2013 Rs.
Grants for Procurement	20,000,000	18,000,000
Grants for Rain gauges (UNDP)	20,000,000	18,708,860
Grants for Research & Development	12,000,000	11,000,000
Grant for Vehicles	-	-
Total	52,000,000	47,708,860

5. **Work in progress (WIP)** has been valued at percentage completed method as per the rates stated in the initial estimates. The total WIP so recognized is Rs.132,182,194.00(Schedule No 06)
Money received from client for the above WIP is Rs. 177,950,000.00. The net liability for contract works is Rs. 45,767,806.00

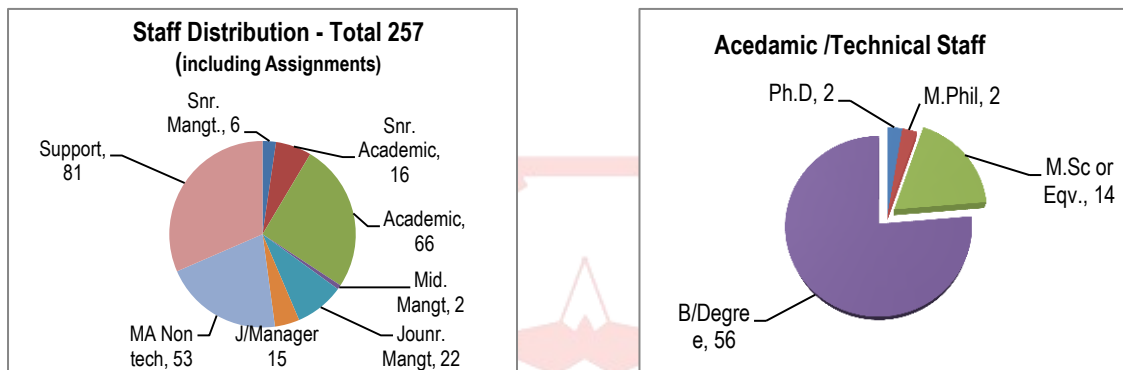
6. First year transmission

Financial Statements have been prepared complying with Sri Lanka Public Sector Accounting Standards for the first time and therefore the comparative figure given in Financial Statements does not reconcile with the relevant heading accordingly.

HUMAN RESOURCE /CAPACITY DEVELOPMENT

NBRO’s Vision and Mission were set to develop its capacity to cater the Ministry’s DRR needs. With this in view NBRO is in the process of legalizing the institution mission by an act and developing staff capacities to deliver high standard outputs. Staff turnover is one of the inherent issues of NBRO during the recent past. Human resource and infrastructure needs of the institution are becoming a matter of serious concern with the increasing responsibilities the institution shoulder at present.

Recruitment of new employees for essential vacant positions was done. By now, 10 employees in 4 categories have been recruited. Total number of vacancies as at 31st Dec. 2014 was 41. A staff development program was initiated in 2013 and Local and foreign training opportunities were widened and made available for our staff to enhance their experience and knowledge.



STAFF RECRUITMENTS/ RETIREMENTS/ RESIGNATIONS – 2014

No	Sal/ Code	Staff Category	No of Recruitment	No of Resignations	No. of Retirement
1	HM 1- 3	Senior Manager (CEO)	-	--	-
2	HM 1-1	Senior Manager	-	-	-
3	MM 1-1	Middle Management	01	01	-
4	AR 2	Senior Academic/ Scientist	-	-	-
5	AR 1	Academic/ Scientist	-	05	-
6	MA 2-2	Management Assistant (Tech)	05	01	-
7	MA 1-2	Management Assistant (Non Tech)	01	02	-
8	PL 1,2&3	Primary	03	-	01
TOTAL			10	09	-

Total Cadre 274

PROVISION OF LOCAL TRAINING – 2014

No	Salary Code	Staff Category	No of people trained Locally
1	AR 1/2	Academic/ Research	24
2	MM 1-1	Middle Management	01
3	JM1-1	Junior Management	-
4	MA 2-2	Management Assistant (Tech)	05
5	MA 1-2	Management Assistant (Non Tech)	09
6	PL	Primary	05
TOTAL			44

PARTICIPATION IN FOREIGN TRAINING/ SEMINARS & WORKSHOPS – 2014

No	Staff Category	No of people participated in training and Seminars/ Workshops
1	Academic/ Research (Scientists)	24

Procurement of Equipment

The grant of LKR 20.0 Mn. given by the General Treasury to procure laboratory and field equipment for research for capacity building in NBRO was effectively utilized. Several major equipment including field accessories and important IT related equipment were procured under this grant. The key items are listed in the following table.

Division	Item
BMRTD	Specimen grinding machine; 250° C Oven (2 units); 100 mm Core bits (10 units)
ESSD	Water sampler, High volume sampler , Vacuum pump
GETD	Drilling accessories, Laboratory accessories



PARTICIPATION IN NATIONAL PROGRAMMES

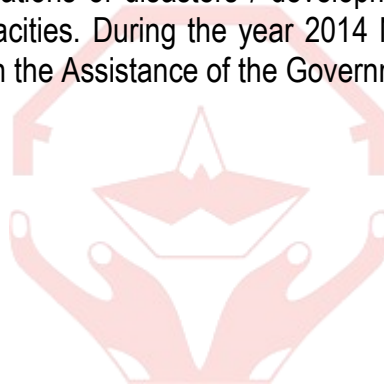
Dayata Kirula Development Exhibition – 2014, Kuliypitiya

The Deyata Kirula National Programme and Exhibition which is conducted every year by incorporating all the state institutions took place from 23rd to 30th of March 2014 at the Kuliypitiya Technical College in the Kurunagala district.

NBRO participated in the exhibition by opening a stall. Models and posters on NBRO activities were displayed at the exhibition. NBRO staff members were deployed to explain the activities of NBRO and to educate the general public on landslide and associated disaster risk reduction. Based on this program, a special issue of the NBRO News Bulletin was released and distributed at the exhibition.

CAPACITY DEVELOPMENT

NBRO is considered as the national focal point for landslide risk management in Sri Lanka. With the increasing trend of disasters and development boom, NBRO needs to address complex and challenging situations of disasters / development and entail to play a wider role by strengthening its capacities. During the year 2014 NBRO were able to strengthen the capacity of equipment with the Assistance of the Government.





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கணக்காய்வாளர் தலைமை அபிவிதி திணைக்களம்
AUDITOR GENERAL'S DEPARTMENT



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My No. }

DE2/G/NBRO/1/14/15

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உமது இல.
Your No. }

දිනය
திகதி
Date }

15 September 2015

The Director General
National Building Research Organization

Report of the Auditor General on the Financial Statements of the National Building Research Organization for the year ended 31 December 2014 in terms of Section 14(2)(c) of the Finance Act, No. 38 of 1971.

The audit of financial statements of the National Building Research Organization for the year ended 31 December 2014 comprising the statement of financial position as at 31 December 2014 and the statement of financial performance, statement of changes in equity and the cash flow statement for the year then ended and a summary of significant accounting policies and other explanatory information, was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read in conjunction with Section 13(1) of the Finance Act, No. 38 of 1971. My comments and observations, which I consider should be published with the annual report of the Organization in terms of Section 14 (2)(c) of the Finance Act, appear in this report. A detailed report in terms of Section 13(7)(a) of the Finance Act will be issued to the Director General in due course.

1.2 Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Sri Lanka Public Sector Accounting Standards and for such internal controls as the management determines is necessary to enable the preparation of financial statements that are free from material misstatements whether due to fraud or error.



1.3 Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Sri Lanka Auditing Standards consistent with International Standards of Supreme Audit Institutions (ISSAI 1000 – 1810). Those Standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Organization's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Organization's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements. Sub - sections (3) and (4) of the Section 13 of the Finance Act, No. 38 of 1971 give discretionary powers to the Auditor General to determine the scope and extent of the Audit.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

1.4 Basis for Qualified Opinion

My opinion is qualified based on the matters described in paragraph 2.2 of this report.



2. Financial Statements

2.1 Qualified Opinion

In my opinion, except for the effects of the matters described in paragraph 2.2 of this report, the financial statements give a true and fair view of the financial position of the National Building Research Organization as at 31 December 2014 and its financial performance and cash flows for the year then ended in accordance with Sri Lanka Public Sector Accounting Standards.

2.2 Comments on Financial Statements

2.2.1 Accounting Deficiencies

- (a) Out of the proceed received from the General Treasury during the year under review for Geo-instability Rectification Project and other proceeds received during the year under review and previous year for mapping of landslide locations, a sum of Rs. 7,608,061 unspent for intended purposes had been accounted as an income of the year under review.
- (b) A sum of Rs. 4,188,200 received from the Ministry of Disaster Management to assist beneficiaries to construct 06 model houses tolerant for Tsunami and floods etc. had been treated and accounted as the income received for the year under review. However, a sum of Rs. 561,456 payable under this Project to outside parties had not been accounted as payable.
- (c) The Capital Grants amounting to Rs 160,207,591 received from the Government of Sri Lanka and other entities had comprised with the Recurrent Grants amounting Rs. 80,055,432 received for mapping of landslide risk areas and research purposes.
- (d) The balance of prepayments as at 31 December of the year under review amounting to Rs. 20,949,289 had included the staff loans and advances aggregating Rs. 17,923,326.



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2.2.2 Lack of Evidence for Audit

Evidence such as progress reports, certified bills etc relating to the amount of Rs. 132,182,194 shown as the value of work- in progress under Geo Technical, Engineering and Research Division, Project Management Division and Landslide Research and Risk Management Division was not made available for audit.

2.2.3 Accounts Receivable

A sum of Rs. 5,554,149 recoverable from the Urban Development Authority remained outstanding for over 05 years and another sum of Rs. 6,411,229 receivable from Disaster Management Centre for landslide research activities carried out in 2010 had remained outstanding for over 04 years.

2.3 Non- Compliance with Laws, Rules Regulations and Management Decisions

The following instances of non- compliances were observed in audit.

Reference to Laws, Rules and Regulations

Non- Compliance

(a) Financial Regulations of the Democratic Socialist Republic of Sri Lanka

Financial Regulation 371(2)

The advances granted for various purposes should be settled immediately after the completion of the intended purposes. However, contrary to the above requirement, advances aggregating Rs.1,130,523 obtained in 32 occasions had been settled with delays ranging from 01 to 05 1/2 months.

The advances aggregating Rs. 101,850 granted to 10 officers in 12 occasions during the year under review had remained in hands for the period ranging from 01 month to 02 months period without using for intended purposes.



Further, a fresh advance should be obtained after the completion of the purpose for which the first an advance was obtained, it was observed in audit that advances had been obtained in 12 occasions without settling the first advance obtained.

The advances for suppliers should not be exceeded 20 per cent of the value of the transaction, instances of granting 50 per cent advances over the value of transaction had been observed in 09 occasions.

- (b) Treasury Circular No. IAI/2002/02 of
 28 November 2002

The Register of Fixed Assets for computers, accessories and software had not been maintained in updated manner.

3. Financial Review

3.1 Financial Results

The operating result of the year under review amounted to a surplus of Rs.62,748,371 and the corresponding surplus in the previous year amounted to Rs. 11,227,959. Therefore, it was indicated a growth of Rs. 51,520.412 in the financial results as compared with the previous year. The main reason for the increase of the financial result was the increase of revenue by Rs.53,482,172, eventhough the operating expenses of the organization had increased by Rs. 5,618,367.

4. Operating Review

4.1 Performance

The mission of the Organization is to minimize the risks on disaster and promotion of research and development activities by providing technical support for the purpose of secured environment. The key functions of the Organization are mapping of landslide in disaster risk zones, conducting of land slide risk mitigating projects and issuing landslide risk assessment reports. The matters observed in audit in this connection are given below.



(a) Project on Mapping of Landslide Disaster Risk Zones

The following observations are made.

- (i) It was scheduled to prepare maps during the year under review to cover 2,277.5 square kilometres in Kurunegala, Kandy, Kegalle and Hambantota districts into 1:10,000 scale to identify the landslide risks, delimitate the risk zones and to identify other related risks etc.,. However, maps to cover 1,027 square kilometres had not been completed by the end of the year under review.
- (ii) The activities of mapping of 1,387 kilometres in Gampaha district under 1:50,000 scale had been initiated from previous year. However, such activities were not included in the Action Plan for the year under review. Further, the performance in this regard at the end of the year had not been submitted for audit.

(b) Issuing of Landslide Risk Assessment Reports

According to the information presented by the Organization for audit, a Landslide Risk Assessment Reports should be obtained directly or through the respective Local Authorities by the parties who expected to construct buildings in the landslide risk areas, before the commencement of development activities. For that purpose, offices had been established by the Organization in 10 Districts. According to the information relating to the issue of Landslide Risk Assessment Reports collected from Landslide and Research Division and the District Offices, a sum of Rs 25,729,474 had been earned from issuing such reports.

The following observations are made in this connection.

- (i) It was observed in audit that people living in the villages around the areas with landslide risks were not adequately made aware of the necessity of obtaining such certificates and Grama Niladhari in respective areas had not taken action to maintain co-ordination in this regard with the general public. According to the explanation made by the Director General of the Organization in this connection, the Organization cannot be intervene on such activities as the legal authority had not been vested to the Organization to take action against such unauthorized constructions.



- (ii) A sum of Rs. 25,729,474 had been recovered from the Pradeshiya Sabhas to issue such certificates and out of that a sum of Rs. 1,548,058 had not been remitted even as at 31 December of the year under review, thus indicating that the mechanism established to remit the collections made by the Pradeshiya Sabha had not been properly implemented .
- (iii) The programme for obtaining approvals for constructions and developments in landslide risk areas had been commenced since 2011 and since then 38,070 applications had been received upto the end of the year under review. Out of that the applications of 35,237 had been approved. However, an effective course of actions had not been implemented to follow up on constructions made on rejected applications.
- (c) Activities on Mitigation of Landslide Risks
- (i) The activities such as rescue 50 houses facing high risk of land slides, earth filling and construction of a dam to divert debris flowing to some other area and reconstruction of several main roads, etc. had been scheduled to be implemented under Gerandiella Landslide Risk Mitigation Project during the period from 2012 to 2016. The estimated total cost of the Project amounted to Rs. 93,011,363. Works estimated at Rs 30,000,000 were expected to be completed during the year under review and details on physical progress thereon were not made available for audit.
- (ii) The estimated cost of the project for rectification of instable slope of Pessionwatte area amounted to Rs 25,000,000 and a sum of Rs 20,000,000 had been granted by the General Treasury. The expenditure amounting to Rs. 6,676,086 had been incurred during the year under review but the activities of the project had been suspended due to the protests of the occupants of the area.
- (d) Research and Development Activities
 Under the Action Plan of the Organization for the year under review, 19 research and development activities had been identified and a provision of Rs. 12,000,000 had been received from the general Treasury. The following observations are made in this regard.



- (i) Eventhough provisions amounting to Rs. 4,880,000 had been made to Landslide Research and Investigation Dvision, Geo Technical and Engineering Division and Environmental and Services Division to carry out 08 researches, such researches had not been conducted by respective Divisions.
- (ii) A sum of Rs 6,460,062 had been spent exceeding the provision of Rs.3,070,000 made to Human Settlement Planning and Training Division to carry out 07 researches.
- (iii) The development and research activities had not been conducted as planned and as a result, a sum of Rs 2,700,280 had remained unspent as at the end of the year, out of the provisions amounting to Rs.12,000,000 made.

4.2 Personnel Management

The following observations are made.

- (a) It was observed that the applications to recruit persons for the 36 vacancies remained over 02 years had been called by the Organization only in October and December of the year under review.
- (b) According to the approved cadre, there were 58 posts of Scientists but only 35 permanent Scientists had been recruited by the end of the year under review. Further, 31 officers had been deployed under contract and assignment basis for the 23 vacant posts. Evidence for the required approval for that purpose was not made available for audit.

5. Accountability and Good Governance

5.1 Establishment of the National Building Research Organization

This Organization had been established under the decision of the Cabinet of Ministers dated 29 September 1993, to establish a separate institution to perform the functions vested in the institutions such as Building Research Institute, State Engineering Corporation and Soil Research Laboratory of the Department of Buildings, etc. As the Organization is not incorporated under Parliamentary Act as a state owned regulatory body it was observed in audit that action to be taken by the Organization against the persons involved in constructions made in the risky areas had been limited.



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 Auditor General's Department

5.2 Action Plan

It was observed that the Annual Action Plan of the Organization had been prepared to achieve only for the financial targets and not based on physical target expected to be achieved. Therefore physical performance in connection with mapping of disaster risk zones and construction works done etc., to minimize landslides could not be evaluated in the audit.

Further, the Climate Feasibility Programme and Integrated landslide Mitigation Project-01 included in the Action Plan could not be implemented during the year under review.

5.3 Internal Audit

The Internal Audit Section of the Organization comprised of one officer and payments made to meet various functions carried out by main Divisions of the Organization, progress on achievement of the physical performance, etc. had not be examined by the Internal Audit Unit.

5.4 Budgetary Controls

Significant variances between the budgeted figures and actuals were observed in audit and it indicated that an adequate attention had not been paid in the determination of financial targets for the Budget and lack of attention on follow up action taken to meet income and expenditure targets. Therefore, it was further observed that the Budget had not been made use of as an effective instrument of management control.

5.5 Achievement of Environmental and Social Responsibility

The responsibility of mapping of landslide risk areas by carrying out of studies on land slide occurring in the hill country and issuing of Landslide Risk Assessment Reports on constructions made in such areas is vested in the Organization.

Through the mapping of landslide risk zones, the distribution pattern of risky areas are identified and such maps are used for the activities such as development of policies in national and provincial levels, preparation of development plans, issue of prior announcements of land slide and permits for the construction of building in the risky areas, etc.



6. System and Controls

Weaknesses in system and controls observed during the course of audit were brought to the notice of the Director General from time to time. Special attention of the management is needed in respect of the following areas.

- (a) Accounting
- (b) Debtors Control
- (c) Personnel administration
- (d) Project Management
- (e) Budgetary Control

W.P.C. Wickramaratne
Acting Auditor General





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தேசிய கட்டிட ஆராய்ச்சி நிறுவனம்
NATIONAL BUILDING RESEARCH ORGANISATION

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Our Ref} NBRO/AD/2014/230

Your Ref}

Date } 2016.02.23

Auditor General
Auditor General's Department
306/72, Polduwa Road
Battaramulla

Report of the Auditor General on the Financial Statements of the National Building Research Organisation for the year ended 31 December 2014 in terms of Section 14(2)(c) of the Finance Act, No. 38 of 1971

We wish to forward you the following clarification on matters mentioned in the above Report (Ref: DE2/G/NBRO/1/14/15 dated 15/09/2015).

2. Financial Statements

2.2 Comments on Financial Statements

2.2.1 Accounting Deficiencies

- (a) Out of the proceeds received from the General Treasury during the year under review for Geo-instability Rectification Project (Passenwatte) and for mapping of landslide locations, a sum of Rs. 7,608,061 had been the fee for consultancy services and general expenditure and had been accounted as revenue as shown by the following.

Work in Progress of Geo-instability Rectification Project in 2014 (This value had been accounted as Revenue)	9,323,573.29
Less	
Expenditure shown as payment to contractors & direct expenditure	6,676,086.13
Absorption of consultancy fees of the Organisation & other General Overheads (1)	2,647,487.36
Amount accounted as income in 2014 for Mapping of Landslide Locations	24,000,000.00
Less	
Direct Expenditure incurred on mapping work	19,039,426.10
All Consultancy Fees and General Overheads of Landslide Mapping Project (2)	4,960,571.90
Total Consultancy Fees & General Overheads (1+2)	7,608,061.06

- (b) National Building Research Organisation has taken necessary actions to construct 06 model houses tolerant for Tsunami and floods etc at an expenditure of Rs. 4,188,200 from the funds received from the Ministry of Disaster Management in 2013.

The sum of Rs.561,455 needed to complete the balance work had not been transferred to the following year and accounts had not been adjusted accordingly. And steps will taken to correct this in 2015 under the prior year adjustments.

- (C) From 1988 Direct Expenditure relevant to Capital Grants received from the General Treasury and other institutions was deducted from the respecting accounts. A part of recurrent expenditure relevant to expenditure on mapping was not deducted from the relevant account, and as a result, the balance of the fund appears to be higher in the Final Accounts.

Accordingly, steps will be taken in 2015 to correct this situation by removing the sum of Rs. 80,055,432 shown by the Audit Report from the Capital Grant and adjust with the Consolidated Fund.

- (d) Steps will be taken in 2015 to show staff loans and advances separately.

2.2.2 Lack of evidence for audit

Evidence such as progress reports and certified bills relating to the amount of Rs. 132,182,194 shown as the Work-in-Progress under Geotechnical Engineering and Research Division, Project Management Division and Landslide Research and Risk Management Division can be produced to the Audit at any time.

2.2.3 Accounts Receivable

The Organisation has taken all the actions whatsoever possible to recover the sum of Rs. 5,554,149 receivable from Urban Development Authority for over five years and it is reported regrettably that it was not possible to recover this sum yet.

Funds for the landslide mitigation works at Peradeniya and Padiyapallala and for the special investigations conducted by National Building Research Organisation were given through the Disaster Management Centre. At that time, a sum of Rs. 6,411,229 was claimed for the work done by submitting bills to Disaster Management Centre and the said sum was entered to accounts as revenue.

It has not been possible to recover the said sum as Disaster Management Center did not receive funds to this amount from the General Treasury. As there is no reason to keep this sum in books any longer steps will be taken to write off this sum from the accounts in 2015 under Consolidated Funds.

2.2.4 Non-Compliance with Laws, Rules, Regulations and Management Decisions

(a) Financial Regulation 371(2)

Advances are given to cover the essential expenses incurred by the consultancy services done by the National Building Research Organisation and in related work sites, and necessary actions are taken to settle such advances as well. In spite of that, there are some instances where cash advances cannot be settled within 14 days due to unavoidable circumstances. However, steps will be taken to investigate reasons for not settling cash advances within a period exceeding one month and to take necessary corrective actions to redress the situation.

As a measure to speed up the settlement of cash advances, steps were taken to stop payment of salaries of those officers delayed the settlement of cash advances and to recover advance from their salaries. Further, action will be taken not to allow an officer to take cash advance until previous cash advances are settled.

Cash advances were given after considering the work requirements and because of unavoidable circumstances prevailed. But in the future, payments will be made according to relevant regulations and subject to internal controls.

(b) Treasury Circular No. IAI.2002/02 of 28th November 2002

Steps have been taken to update the Register of Fixed Assets for Computers, Accessories and Software.

3. Financial Review

3.1 Financial Results

Agree with the contents stated.

4. Operating Review

4.1 Performance

(a) Project on Mapping of Landslide Disaster Risk Zones

(i) & (ii) Steps have been taken to complete the maps scheduled for completion in 2014 together with the maps scheduled for completion in 2013. The completed maps can be produced for the scrutiny of the Audit.

(b) Issuing of Landslide Risk Assessment Reports

National Building Research Organisation issues Landslide Risk Assessment Reports for building construction and development activities in landslide-prone districts in the country. These reports are issued on requests made directly to NBRO and on requests made by local government bodies.

Further, the National Building Research Organisation regularly conducts awareness programmes to apprise the general public of the importance of obtaining Landslide Risk Assessment Reports for construction and development work in landslide-prone districts. Actions have been taken to

conduct such awareness programmes to the general public with their cooperation at Grama Niladhari divisional levels.

Still for all, National Building Research Organisation does not have authority to stop any unauthorized construction or to take any legal action against. Hence, National Building Research Organisation is unable to directly intervene in such matters.

Further, when activities are taking place without making any request for a Landslide Risk Assessment Report, such as unauthorized construction in state lands or in forest reserves, transport of sand or sand mining, and private construction work, National Building Research Organisation does not have legal provisions to take any direct action. However, at times when such acts are reported, actions will be taken to bring them into the notice of agencies with authority to act.

Action will be taken to recover soon the sum of Rs. 1,548,058 from the Local Authorities and to strengthen the process for recovering such funds by systematically submitting estimates for the requests for Assessment Reports made by Local Authorities.

In the Landslide Risk Assessment Report issuance process, when a new application is made to reconsider a site where previously an approval was rejected, a proper mechanism has been deployed to ensure that an investigation will not be made and a new report will not be issued without referring to the previously issued report. Entries on sites where approvals were rejected are made on the 1:50,000 maps and also on a register maintained separately. Whenever a fresh application is received, before commencing any investigation, the site is checked first for entries on 1:50,000 maps to ascertain whether any previous decisions have been taken on that site.

However, it is informed here that National Building Research Organisation does not have the authority to monitor the outcome of reports issued.

(C) Activities on Mitigating Landslide Risks

- (i) A sum of Rs. 29 Mn was received as funds for the Garandi Ella Landslide Mitigation Project in 2013 and Rs. 21,631,952 was spent as project expenditure. The balance of Rs. 7,368,048 from the Treasury funds was utilized in 2014 to complete the respective project components. Total Estimated Cost of Garandi Ella project is Rs. 93,011,363. The project is scheduled to be completed in 2016 and therefore, actions will be taken to utilize all funds from the General Treasury and complete the project in 2016.

Further, a sum of Rs. 13,957,790 was invested unavoidably in the beginning of 2014 to complete some essential landslide mitigation project components of Peradeniya and Padiyapallala Landslide Mitigation Projects. This expenditure was approved by the Interim Management Committee and entries to this effect have been made on the Final Accounts of 31 December 2013.

- (ii) Out of the Rs. 20 Mn received for rectification of instable slope of Passenwatte, the excess of funds over the actual work done was transferred to 2015.

All the work components corresponding to funds received in 2014 were completed in 2015, after the public protests stopped.

(d) Research and Development Work

According to the Annual Action Plan made at the beginning of the year, an Action Plan for the Research and Development Programme was prepared under which 19 activities were initially proposed. From these activities 8 of them were not continued due to the following reasons.

Due to unexpected disaster situations prevailed in the country the staff of Landslide Research and Risk Management Division and the Geotechnical Engineering Division could not be deployed for this work, and the said staff could not carry out proposed activities of the Research and Development Programme. (Examples: disaster situations in Kalutara district, landslide in Meeriyabedda, and landslide disaster situation in Nuwara Eliya, Kegalle, Kandy, Matale, Badulla and Ratnapura districts).

In 2012 actions were taken to recruit staff for the cadre approved by the Department of Management Services, but it was not possible to recruit sufficient number of technical staff and this again affected the implementation of the Research and Development Programme. Consequently actions were taken from the beginning of 2014 to revise the cadre, but it was not possible to obtain the approval which also affected the implementation of the Programme.

On 17/03/2015 the General Treasury approved the Scheme of Recruitment and actions were taken afterwards to recruit the necessary staff. The Environmental Studies and Services Division also could not implement their Research and Development programme properly due to shortage of staff.

- (ii) 7 activities out of 19 activities in the Programme were implemented by the Human Settlement Planning and Training Division. A sum of Rs. 3.07 Mn was allocated for this work but as per the work requirement an expenditure of Rs. 6.46 was incurred.

The said expenditure was allowed after considering the content and quality of the activities implemented by the Human Settlement Planning and Training Division.

- (iii) Out of the sum of Rs. 12 Mn received from the General Treasury due to the circumstances prevailed a total expenditure of Rs. 9.3 was incurred and the balance of Rs. 2.7 Mn was transferred to the year 2015 to completed the incomplete tasks of 2014.

4.2 Personnel Management

- (a) The Scheme of Recruitment of the National Building Research Organization was approved 02/03/2012 according to the Management Services Circular No. 30. Accordingly actions were taken to recruit necessary staff after publishing newspaper advertisements. However, recruitment was unfinished due to problems regarding qualifications. As a result, actions were taken to revise the Scheme of Recruitment for which the approval of the Department of Management Services was taken on 17/03/2015.

According to the new Scheme, a newspaper advertisement was placed on 19/03/2015 calling applications, and interviews were held subsequently and all vacancies were filled by 09/06/2015. The situation has been completely arrested by now.

- (b) Previously 58 positions were approved for (AR-1) Scientist and according to new Scheme the approval for 72 AR-1 Scientist positions has been obtained from the Department of Management Services. Because of this, the situation of recruiting 08 more staff does not exist any longer. Action has been taken to fill all of the approved 72 AR-1 Scientist cadre positions.

5. Accountability and Good Governance

5.1 Establishment of the National Building Research Organisation

It is reported that the National Building Research Organisation has no powers vested on it to stop unauthorized building construction or development activity or to take legal action and hence, NBRO cannot directly intervene on such matters. Further, the NBRO at times of such matters brought onto its notice, will endeavor forwarding all such matters to other institutions with legal authority to take action.

Actions have been taken to establish National Building Research Organisation by a parliamentary act and have necessary legal authority vested in it.

5.2 Action Plan

The Organization has taken necessary steps to achieve the anticipated physical and financial targets set by the Annual Action Plan. Detailed description on the Hazard Zonation Mapping work and landslide mitigation work is given under item 4.1 of this report.

5.3 Internal Audit

In April 2015, an internal auditor was recruited to the Organisation on a permanent basis. From August 2014 till April 2015 the Organization did not have an internal auditor and as a result, there were some shortcomings in internal auditing during this period. This situation has been overcome completely.

5.4 Budgetary Control

Consequent to the disastrous landslide occurred in Meeriyabedda and the emergency situation prevailed in the central hill country at the end of the year, a large number of landslide special investigation works had to be completed and as a result of which, expenditure in certain budgetary items exceeded their allocations.

In addition, the Organization contracted many large projects and as a result of which, expenditure incurred in certain budgetary items exceeding their allocations. Further, when compared with previous years, yearly revenue of the Organisation has grown considerably, and the profit has increased to Rs. 62 Mn.

In the whole process, expenditure over the budgetary allocations incurred in 2014, but necessary action will be taken in 2015 to keep the expenditure within budgetary allocations by operating under strict supervision and control.

5.5 Achievement of Environment and Social Responsibility

Agreed with the contents therein.

6. Systems and Control

Actions have been taken to improve and strengthen the Systems and Control for making the management of the Organisation more efficient, while taking into consideration the audit queries raised from time to time on the following domains.

Further, we are pleased to report that, actions have been taken to pay more attention to the Systems and Controls and have them improved.

- a) Accounting
- b) Debtors Control
- c) Personnel Administration
- d) Project Management
- e) Budgetary Control



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