Corporate social responsibility at NLC India Limited: an approach towards harnessing energy and spreading smiles

1.0 Introduction

n early years, mission of the business firms was exclusively oriented towards economic. The concept of Corporate Social Responsibility (CSR) began to develop since early 1970s (Mazurkiewicz, P., 2004). Business dictionary defines CSR as "a company's sense of responsibility towards the community and environment (both ecological and social) in which it operates." Concept such as 'the triple bottom line' (John Elkington, 1994), seeded the notion of generating profit in a way that is good for both the people and planet. World Business Council for Sustainable Development (WBCSD) delineates CSR as "the commitment of business to contribute to sustainable development, working with employees, their families, the local community and society at large to improve their quality of life" (Henderson, D., 2001). CSR is a business model with many approaches and definitions varying from company to company and nation to nation. A socially responsible company in China makes safe, high-quality products; whereas in Germany it provides secure employment and in South Africa it makes a positive contribution to health care and education (Knox, S., 2007).

The very purpose of CSR is to drive sustainable development with ethical measures. 'Creating shared value' (Michael Porter, 2011) was seen as the link between competitive advantage and CSR – the idea being to reconnect business with social progress. Conscious Capitalism (Sisodia, R. and Mackey, J., 2013) exhibited the concept of the four essentials - higher purpose, conscious leadership, conscious culture and stakeholder orientation. These elements differentiate companies that work for more than just economic profit. According to Baker (2004), CSR is the business process by which organizations manage to produce an overall positive impact on the society. It requires business organizations to be accountable for their social and environmental record.

There are various business advantages of CSR, a few of them can be listed below:

Messrs. Suresh Chandra Suman, General Manager, Planning (Mines), V. Saravana Nagarajan, Chief Manager, Mine Planning and J. Peter James, General Manager, CSR, NLC India Limited, Neyveli, Tamil Nadu

- Brand building
- Business development new markets, products and services
- Better internal and external relationship
- More business opportunities
- Long term future for business
- Satisfied employees, satisfied customers and satisfied stakeholders
- Attracts more cash flow from various sources
- · Less hostility with regulatory authorities
- Positive publicity

Charles Handy wrote long back "Companies that survive longest are the ones that work out what they uniquely can give to the world – not just growth or money but their excellence, their respect for others, or their ability to make people happy". The idea of combining social and environmental issues as part of the business enables companies to work with their core competencies and therefore, achieve enduring socio-economic outcome. In fine, CSR is a way for business organizations to benefit themselves as well as benefiting society (Epstein-Reeves, J., 2012).

However, economist like Milton Friedman feels that there is no such thing as free lunch and objective of business organization should be profit making. Any expenditure over CSR increases cost of production and hence it is the customer who is to bear the price.

2.0 CSR in India

CSR is not a new concept in India. Many business houses like Tata, Birla etc, since their inception, have been involved in contributing to the community through charity and donations and were doing their parts towards the society. But it was not mandatory. Now, CSR was made mandatory for business enterprises under the Companies Act, 2013. Any company having a net worth of Rs.500 crores or more, or a turnover of Rs.1,000 crores or more, or a net profit of Rs 5 crores or more has to spend at least 2% of last 3 years average net profits on CSR activities. The rules came into effect from 1 April 2014 (www.mca.gov.in, www.forbes.com). Security and

Exchange Board of India (SEBI) in 2012 has pointed out that enterprises are accountable to the society (www.sebi.gov.in). It has mandated for top 500 listed companies to prepare annual business responsibility report (since April, 2016) specifying their activities related to environment and stakeholder relationship (www.business-standard.com).

India witnessed a 28 per cent growth in CSR spending in FY 2015-16 in comparison with the previous year. Listed companies in India spent Rs.8345 crores (US\$1.23 billion) in various programmes. The Prime Minister's Relief Fund saw an increase of 418% to Rs 701 crores (US\$103 million) in comparison with Rs.168 crores (US\$24.5 million) in 2014-15. The education sector received the maximum funding of Rs.2042 crores (US\$300 million) followed by healthcare at Rs.1638 crores (US\$240.88 million), while programmes such as child mortality, maternal health, gender equality, and social projects saw negligible spend (www.india-briefing.com).

3.0 NLC India Limited (NLCIL)

NLC India Ltd. (formerly Neyveli Lignite Corporation Limited) [A 'Navratna' Government of India Enterprise] is a pioneer in opencast lignite mining and power generation for about six decades. At present, NLCIL operates three lignite opencast mines with total production capacity of 28.50 million tonnes per annum (MTPA) to meet the fuel requirement of linked thermal power stations having total capacity of 2990 MW in Neyveli, Tamilnadu. NLCIL is also operating a 2.1 MTPA capacity lignite mine at Barsingsar, Rajasthan to meet the demand of 250 MW power plant and one coal based thermal power plant of 1000 MW capacity at Tuticorin, Tamilnadu. NLCIL has ambitious plans - Vision 2025 for expansion in mining from current capacity of 30.6 MTPA of lignite to 56.9 MTPA and for venture into mining of coal with anticipated capacity of 30.5MTPA. Similarly, power projects will also poise a growth to 20151 MW in various parts of the country in next few years.

4.0 CSR in NLC India Limited

NLCIL views its business as an opportunity to set up the mechanisms for sustainable socio-economic development of its operating regions and for contributing to the nation building efforts. NLCIL adopts a different paradigm for CSR activities as it believes "companies can contribute to social progress more effectively if they embed social issues in the business models." NLCIL has been practicing CSR and sustainability since its inception in 1956 with the participation of state governments, district administration and the concerned local bodies and departments.

The CSR policy of NLCIL is formulated combining social and environmental issues, with aim of human development through innovative strategies and measurable social impacts. A holistic approach is adopted by NLCIL for achieving inclusive growth in its operating regions by means of formulating and implementing projects/programmes/activities for the benefit of neighbourhoods in the focus areas of rural infrastructure, water, health, sanitation, education and capacity building/skill development etc. NLCIL works with its core competencies as part of the business, to achieve enduring socio-economic outcome with continued explicit social impacts.

4.1 Focus of CSR programme of NLCIL

The focus of the CSR programme of NLCIL, is overall development and improvement in the quality of life of habitations and communities, particularly of the disadvantaged groups, in and around the NLCIL's mining and thermal power station sites and its neighbourhoods. The NLCIL's vision, mission and main focus on CSR are illustrated in the Fig.1.

Initiatives of state/central government departments/ agencies are dovetailed/synergized with the CSR activities of NLCIL. In the year 2015-16, NLCIL has adopted a new CSR Policy covering the various sectors of sustainable socio-



Fig.1 NLCIL's focus of CSR programme (www.nlcindia.com)

economic development. The areas covered under this initiatives are:

- Education and vocational training,
- b. Health care, drinking water, sanitation.
- c. Provision of civic amenities,
- d. Income generation projects,
- e. Environmental/green initiatives,
- Relief and rehabilitation related to disasters etc.
- g. Social infrastructure development.

4.2 CSR-ORGANIZATION CHART

CSR-Organization of NLCIL is schematically represented in Fig.2.

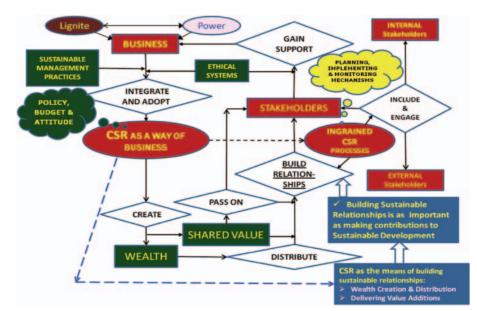


Fig.3 Scheme of NLCIL's CSR and sustainability. (www.nlcindia.com)

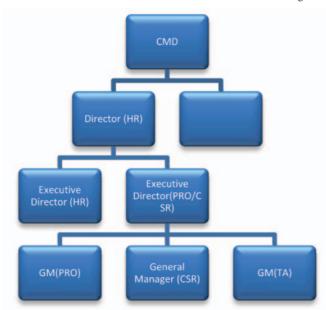


Fig.2 CSR-organization chart of NLCIL

The scheme of NLCIL's CSR and sustainability

The planning, implementing and monitoring mechanisms for CSR and sustainability are also regularized as part of business processes with necessary institutional arrangements which are locally sustainable and legally recognized and is depicted in Fig.3.

4.3 NLCIL'S HOLISTIC APPROACH TO CSR AND SUSTAINABILITY:

The entire CSR and sustainability activities of NLCIL are aimed at "MANAV VIKAS"- the social development. The main structural components are "Buniyadh" – the community assets, "Jala Paryaptha" – the water sufficiency, "Samooh Unnathi" – the community development, "Paripradesh" – the

environs and "Janapravesh" – the provision of free/affordable public access to NLCIL owned amenities and services. These components are supported by a variety of projects and activities, complementing one another and dovetailing with others for overall development. In fact, the greenish townships of NLCIL shimmer like embroideries in the social fabric of the localities, providing for inclusive socio-economic growth opportunities. This dynamic arrangement constitutes a balanced, harmonious and sustainable ecosystem. This structured approach illustrated in Fig.4.

4.4 Targeting the society for development

NLCIL targets the society in all possible ways for developing it. It includes ideological governing (principles/maxims), geographical (periphery of operating regions) and demographic inclusion of hamlets/villages, panchayats, blocks and district, marginalized and under-privileged sections of society, methodological formulation of impactful projects, regular annual budget allocations and full utilization, meticulous monitoring and physical evaluation, supplementing the efforts of the district administration and aligning business goals with social goals with correctional requirements of impact assessment and social audit.

5.0 Implementing and monitoring mechanism

A general baseline and needs assessment survey conducted in 120 villages in Neyveli region in Tamil Nadu and Barsingsar region in Rajasthan for identifying and prioritizing the impactful projects, by engaging external agencies. Projectwise needs are being assessed by NLCIL officials of various disciplines jointly with the villagers, panchayat representatives and multi-stakeholder committee under the District Collector cum District Development Authority involving the district/block level government departments/

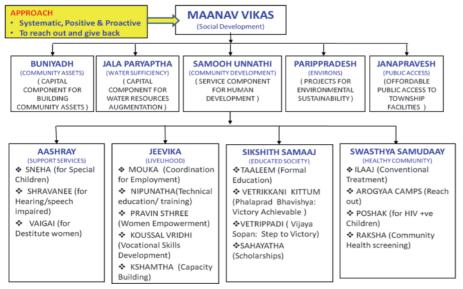


Fig.4 NLCIL's holistic and structured approach to CSR and sustainability (www.nlcindia.com)

agencies like District Rural Development Authority (DRDA), PWD, Education, Health etc. The CSR subcommittee of NLCIL monitors the activities regularly and the NLCIL Board reviews them from time to time. The grass root level mechanism is illustrated broadly in Table 1.

6.0 Implementation of the CSR activities

6.1 CSR - PERIPHERAL

A well thought-out system is in operation for executing capital works for developing social infrastructure and building sustainable community assets which benefit the villages surrounding Neyveli and Barsingsar. On the basis of needs and priorities, infrastructure development works like drinking water facility by drilling borewells, constructing RCC water tanks, providing roads, bridges and access, additional school buildings, laboratories, libraries, additional infrastructure for primary health centers, developing medical facilities, de-silting of water bodies etc., are being carried out.

Jal-paryaptha

 One among the prominent CSR works of NLC India Ltd is de-silting of Walajah Lake (Figs. 5 and 6) at an expenditure

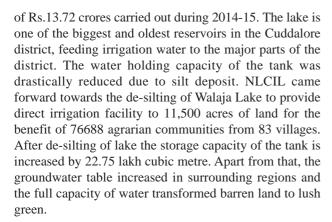
Table 1: CSR projects and the implementing, monitoring agencies

Main CSR projects and locality	Implementing agency	Monitoring agency		
Health, sanitation and combating diseases – Neyveli and neighbourhood	General hospital of NLCIL, Pondicherry Institute of Medical Sciences (PIMS), District Blindness Society, CSR cell/NLCIL,	Monitoring of medical services to rural population and non-employee in general hospital/NLCIL		
	Neyveli Blood Donors Association	For surrounding rural population, multi- specialty medical camps are conducted and monitored by PIMS		
		Eye camps for peripheral villages monitored by the District Blindness Control Society		
		District HIV positive society monitors "Poshak" project		
Access and social infrastructure development in – Neyveli and neighborhood villages Water and irrigation facilities in the peripheral areas surrounding Neyveli	Dedicated CSR Cell of NLCIL	Peripheral Development CSR Committee headed by the District Collector consisting Officials of district administration and NLCIL officials will identify the works. The agency for the works are fixed by tender and implemented within the stipulated time		
Education services – Neyveli and neighborhood	10 numbers of schools run by NLCIL, Trainers Grid of JCI, Jawahar Science College, and CSR cell of NLCIL	Education of youth of the locality in the thirteen schools concurrently monitored by NLCIL's Education Department. The other activities are monitored by CSR cell		
Capacity building, women empowerment/ skill development/entrepreneurship/ employability – Neyveli and Barsingsar and neighborhoods	SNEHA opportunity services, recruiting zone of the Indian Army, Neyveli Health Promotion and Social Welfare Society. EDP training by local agencies, Rajiv Gandhi ITI at Barsingsar, Capacity Building Programmes by Employees Development Centre of NLCIL	Activities monitored jointly with the implementing agencies by CSR cell of NLCIL		





Fig.5 Walajah lake - de-silting work



- Widening, deepening and de-silting of Sengal Odai and Paravanar at an estimated expenditure of Rs.27.53 crores is being carried out.
- De-silting of Periyar Lake in Kurinjipadi with removal 304403 cu.m of earth for benefitting 60847 people of 60 villages for 3779 ha of land is in the anvil.
- Continuous supply of water from mines to nearby villages for irrigating over 23,000 acres of land is also continued in the Neyveli region.
- Further, various works like drilling bore-wells, constructing water tanks, providing roads, bridges and





Fig.6 Walajah lake post de-silting

access, additional school buildings have been carried out for the benefit of the population in the areas surrounding the operating localities.

6.2 CSR - COMMUNITY: SAMOOH UNNATHI

NLCIL continues to extend all assistance including grant and infrastructure to Sneha Opportunity Services at Neyveli to run a day care, education and training centre for special children of the region.

Neyveli Health Promotion and Social Welfare Society patronized by NLCIL has been serving the society by supplying artificial limbs/calipers to the differently-abled, running a school – SHRAVANEE for the hearing impaired, running a computer centre and imparting training for physically challenged, widows and destitute.

NLCIL contributed Rs.100.81 lakh during the year 2015-16, towards the relief and rehabilitation of areas affected by floods in the state of Tamil Nadu. This was apart from the contribution of Rs.148.19 Lakhs made by the employees of NLCIL.

 $6.3 \ CSR$ – education and skill development: Nipunantha and Koussal vridhi

Taaleem - formal education to children and youth

NLCIL offers best education through its 10 schools - 3

Higher Secondary Schools, 2 High Schools, 3 Middle Schools and 2 Elementary Schools and also through the Kendriaya Vidyalalaya at Neyveli, to the students from surrounding villages and also to the wards of employees. During the year under review, the students strength in these 11 schools was 6894.

Kousaal vridhi (vocational skills)

- During the year 2015-16, CSR focused training programmes were organized for the benefit of 3953 persons of students, teachers and the population of Neyveli locality. Women from various peripheral villages were trained light motor vehicle driving, tailoring and beautician trades. Men were trained in trades of operation and maintenance of light motor vehicles, heavy transport vehicles and earth moving equipment operation. Training was also provided for welding and house wiring. On successful completion of training many participants got job opportunities not only in India but also in Gulf countries, Malaysia, Singapore.
- Furtherance, to promote Government of India's "Skill Development Mission" and to impart knowledge, a Memorandum of Understanding was signed between NLCIL and Annamalai University for starting a Diploma course in Mining from academic year 2016-17, as part of NLCIL's CSR initiatives. 50% of the seats will be allocated to NLCIL. NLCIL will reimburse 50% of the tuition fees paid by the project affected persons who pursue Diploma in Mining Course. The infrastructure facilities are being provided by NLCIL at a cost of Rs.3.50 crores.

Phalaprad bhavishya (vetrikkani kittum)

NLCIL has been organizing motivational and exam-skills training through Junior Chamber International for 2197 girls and 1628 boys of X and XII Standards in Neyveli and peripheral village schools. The above programme exclusively dealt with motivation, improving self confidence, memory techniques and developing skills to face examinations. School Education Department of Tamilnadu acknowledged that these schools have witnessed a significant growth consequent to the programme. During the year 2015-16 a total expenditure of Rs 3.574 lakhs has been spent on Vetrikkani Kittum.

Sahayatha – scholarships

NLCIL has been providing scholarships to SC/ST/OBC students of Jawahar Science College and Contract workmen to pursue higher education. A total expenditure of Rs.203.295 lakhs was spent on Sahayatha during the year 2015-16.

Jeevika – livelihood

NLCIL provides infrastructural support and also periodical financial support to Rajeev Gandhi Education Society, Barsingsar for providing quality education and technical training to the children of villages around NLCIL's project-sites in addition to the Jawahar education society at Neyveli.

The establishment of an industrial training institute in Barsingsar village was completed by NLCIL in the year 2012-13. National Council of Vocational Training approved Course in Electrician trade has commenced from October 2012 and Fitter and Welder trades have commenced from October 2013. During the year, 112 students have been imparted industrial/technical training in these trades.

6.4 CSR - HEALTH

NLCIL provides quality medical treatment and occupational health service through its general hospital to all inhabitants of the Neyveli township and its surrounding villages, including comprehensive medical treatment to the contract workmen and their family members.

NLCIL has extended free medical consultation, emergency treatment to the rural public in 46,310 instances. NLCIL has provided investigation and treatment facilities to the contract workmen and their family members in 66,273 instances in general hospital, Neyveli.

Health screening for diabetes, obesity, hypertension, anaemia and HIV was carried out during the Annual Book Fair conducted at Neyveli. 23 medical camps were conducted in peripheral villages located in the area surrounding Neyveli Township. 6953 persons of these villages were screened and given medical advice and medicines through the camps and 183 persons underwent the inpatient treatment.

One blood donation camp was conducted in Neyveli through which blood was collected from 67 students for the stock of government hospital at Vridhachalam. From February 2013 onwards, NLCIL is providing nutritious food supplement to the HIV affected children belonging to the Cuddalore District HIV positive society, Cuddalore. 285 such children were provided with food supplements during the year 2015-16.

Swachh vidyalaya

1,275 toilet blocks were constructed in the Government high schools in Tamil Nadu and Rajasthan at an expenditure of Rs. 6.69 crores.

6.5 Naveenkaran – Renovation

NLCIL contributed funds for the protection of heritage structures, renovation works in the heritage buildings and tourist development projects in Archaeological Survey of India sites under NAVEENKARAN. Under the scheme NLCIL has carried out structural works at Natarajar Temple Chidambaram, Gangaikonda Cholapuram temple and many other places of historical importance.

6.6 Anusandhan — Research

Provides corpus fund to the "NLC India Chair on CSR" at Institute of Public Enterprise, Hyderabad for carrying out research, workshops/seminars and other promotional activities for furtherance of the cause of CSR and to provide policy inputs (on CSR) to the Industry as well as to the Government.

Table 2: CSR and sustainability norms vs expenditure (in Rs. cr)

Particulars	2011-12	2012-13	2013-14	2014-15	2015-16	Total (for 5 Yrs)
Profit after tax (PAT)	1298.33	1411.33	1459.75	1501.88	1579.68	7250.97
Norm for CSR budget (in% of PAT) as per guidelines	0.50%	0.50%	1%	2%	2%	NA
Amount as per norm of guidelines	6.49	7.06	14.6	30.04	31.59	89.78
Total expenditure	11.53	14.26	26.3	47.49	81.93	181.51
Norm vs. expenditure	178%	202%	180%	158%	259%	202%
Expenditure as % of PAT	0.89%	1.01%	1.80%	3.16%	5.19%	2.50%

6.7 SWACCH BHARAT MISSION

"Swachh Bharat" activities carried out in the surroundings on the occasion of Gandhi Jayanti and World Heritage Day Celebration by NLCIL are glimpse of CSR activities carried out under Swachh Bharat Mission. Townships of NLCIL at Neyveli, Barsingsar and Tuticorin are examples of Swachh living area.

6.8 Social inclusion

NLCIL has a large workforce comprising different religious, linguistic and cultural cohorts. Earlier, cultural groups would celebrate their festivals in their own ways. Now NLCIL has made the different religious and cultural festivals a company affair and management celebrates 14 different festivals for different groups. The expenses are borne out of the funds earmarked for these occasions. NLCIL believes that this is a small investment to ensure workplace inclusion and to create universal brotherhood. These celebrations facilitate social camaraderie and strengthen national integration (Pathak, P., 2017).

7.0 Impact assessment of CSR projects

The Department of Public Enterprises (DPE) guidelines on CSR for the Central Public Sector Enterprises in India required that CSR projects should be evaluated by a suitable external agency. Accordingly, the impact assessment study of CSR projects undertaken by NLCIL was conducted for 2012-13 and 2014-15 by engaging Madras School of Social Work (MSSW). The MSSW have observed that NLCIL needs to be highly complemented for the various initiatives and comprehensive measures under their CSR with holistic approaches and accorded EXCELLENT rating. Further MSSW have observed that NLCIL's top management collaborative efforts in translating NLCIL's socially oriented plan into desired and expected outcomes in the immediate run and measurable impacts in the long run is noteworthy. Evaluation on CSR and sustainability activities of NLCIL for the year 2015-16 was carried out through Institute of Public Enterprise (IPE) Hyderabad.

8.0 Orchestral arrangement of NLCIL units for best CSR practice

At the highest level, NLCIL has constantly been aligning its business goals with the social goals and has made the CSR

integral to its business. The various units/department of NLCIL are in orchestral arrangement for best Triple Bottom Line performance. The dedicated corporate Environment Cell coordinates the activities for ecological balance, horticultural development, and pollution control with the support of the Centre for Applied Research and Development (CARD). CARD is engaged in monitoring the dust emission, noise/vibration levels etc and supports the production units to achieve best environmental performance. The centre is engaged in developing innovative scientific solutions to environmental issues concerning the mining and industrial units. In fact, CARD is dedicated to discovering sustainable development initiatives in relation to natural environment.

Human Resource (HR) division is involved in human rights/relations, labour laws compliance, industrial relations, employee welfare and amenities. HR division also looks after health, education and training need of peripheral area.

Land acquisition and resettlement and rehabilation wing resolves the compensation disputes. It, further, ensures quality R&R action plans, peripheral development scheme, community development activities, camps etc. at the peripheral villages.

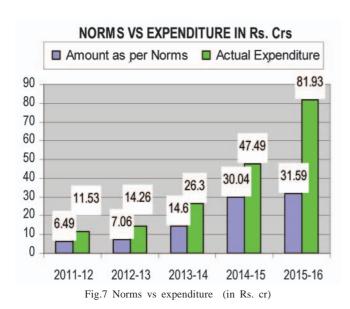
Public Relations (PR) department disseminates information on NLCIL, maintains the transparency and establishes NLCIL's image as the socially responsible green corporation.

9.0 NLCIL's track record of CSR and sustainability expenditure

NLCIL does not hesitate to walk the extra mile to meet the needs and priorities of the society. Annual budgets for CSR and sustainability projects are allocated by NLCIL, commendably, exceeding the minimum requirement specified by statute. The quantum of allocation has grown from Rs.11.53 crores for 2011-12 to Rs.81.93 crores for 2015-16 and is illustrated in Table 2 (www.nlcindia.com) and Figs.7 and 8.

$9.1 \ CSR -$ spending in 2015-16

The CSR-spending pattern in different heads during 2015-16 is highlighted in Table 3 and Fig.9. Women empowerment, infrastructure development, skill development, health and sanitation were the key focus portfolios.



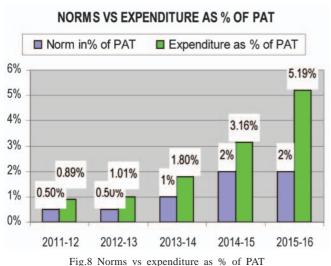


TABLE 3: CSR-Spending in 2015-16

Head	% Spend	
Women Empowerment	20.20%	
Infrastructure Development	19.60%	
Skill Development	19.20%	
Health & sanitation	13.80%	
Water & Irrigation	7.20%	
Disaster Management	6.90%	
Education	6.60%	
Sustainable Development	4.00%	
Others	2.50%	

9.2 CSR BUDGET FOR 2016-17

The CSR budget for 2016-17 is of Rs.43.46 crores with specific focus on augmentation of water sources, skill development, cleanliness, sanitation etc.

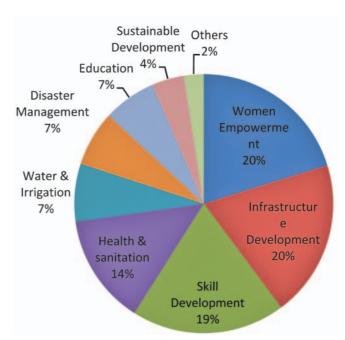


Fig.9 CSR-spending in 2015-16

10.0 Conclusions

NLCIL's CSR programmes emanate from its core competencies and with holistic approach. The locally sustainable institutional arrangement for implementation and monitoring of CSR has made a commendable impact on neighbouring society. The simplification in procedures has enabled better monitoring and assessment of programmes and has fostered the virtuous cycle of an inter-related eco-system. Further, the already-functioning structured components of CSR seamlessly fit into the new legal framework put forth in the Companies Act, 2013.

NLCIL is poised to establish its business in Uttar Pradesh, Jharkhand, Orissa, West Bengal and Karnataka for achieving its growth plan. A good record of CSR will evolve a business model conducive to stakeholders at new places.

11.0 Acknowledgements

Authors express their gratitude towards the NLCIL Management for permitting to publish the details of the CSR including but not limited to sustainability plan, budget, implementation and the impacts at NLCIL.

12.0 Disclaimer

The views expressed are of the authors and may not be of the organizations where they belong.

References

 Baker, M. (2004): "Corporate Social Responsibility -What does it mean?" www.mallenbaker.net/csr/ definition.php.

- 2. Bali, Vinita. 10.01.2017: A different paradigm for CSR. Business Line.
- 3. Epstein-Reeves, J. (2012): Six Reasons Companies Should Embrace CSR. www.forbes.com.
- 4. Henderson, D. (2001): Misguided Virtue: False Notions of Corporate Social Responsibility, The Institute of Economic Affairs, London.
- http://dpe.nic.in. 2013. New 'Guidelines on Corporate Social Responsibility and Sustainability for Central Public Sector Enterprises'.
- 6. http://www.mca.gov.in. Companies Act Notification 1 2014.pdf.
- 7. http://www.undp.org. United Nations Development Program (UNDP), Millennium Development Goals.
- 8. Knox, S., et. al. (2007): Corporate Social Responsibility and Business Decision Making. Spiritual Motivation: New Thinking for Business and Management. Basingstoke: Palgrave Macmillan.

- Mazurkiewicz, P. (2004): Corporate Environmental Responsibility. Is a common CSR framework Possible? World Bank.
- 10. Pathak, P. (2017): Promoting Workplace Inclusion. The Pioneer, New Delhi. January 15, 2017.
- 11. Sisodia, R. and Mackey, J. (2013): Concious Capitalism: Liberating the Heroic Spirit of Business. Harward Business Review Press.
- 12. www.business-standard.com. (2015): Business responsibility reports must for Top 500 listed companies. December 24, 2015.
- 13. www.forbes.com, The Flag off of CSR Rules: India Inc.'s To Do List for Compliance to Section-135.
- 14. www.india-briefing.com. Corporate Social Responsibility in India. January 11, 2017.
- 15. www.nlcindia.com, Annual Report of NLCIL (2015-16).
- 16. www.sebi.gov.in

JOURNAL OF MINES, METALS & FUELS

Special Issue on

SECURITY OF SUPPLY OF RAW MATERIAL RESOURCES – CHALLENGES AND OPPORTUNITIES

CONTENTS

- 1. SECURITY OF SUPPLY OF MINERAL RESOURCES CHALLENGES AND OPPORTUNITIES
- 2. SECURITY OF SUPPLY OF ENERGYRESOURCES IN EMERGING ECONOMIESMANAGING COMPLEXITY
- 3. COKING COAL SECURITY FOR STEEL MAKERS INDIA'S PERSPECTIVE
- 4. MINERAL RESOURCE MODELLING: A REVIEW OF MATHEMATICAL TECHNIQUES
- 5. UNDERSTANDING CERTAIN ASPECTS OF GLOBAL MINERAL TRADE

Prof. S.K. Choudhuri

Ex-Controller General, Indian Bureau of Mines; presently Consultant, Kolkata

Prof. A.K. Ghose

Formerly Director ISM Dhanbad, presently Editor, Journal of Mines, Metals & Fuels, Kolkata

Sandeep Kumar

Managing Director, S&T Mining Co Ltd (Sail-Tata JV), Kolkata

Dr. B.C. Sarkar

Professor & Head, Department of Applied Geology, Indian School of Mines, Dhanbad and **A.R. Samal**, Sr. Geologist/Geostatistician, Pincon Alalen and Holt, Lakewood, Colorado, USA

Dr. J. Bhattacharya

Professor, Department of Mining Engineering, Indian Institute of Technology, Kharagpur

For copies, contact:

E-mail: bnjournals@gmail.com/pradipchanda@yahoo.co.uk