

FDI elasticity of employment and poverty in Odisha

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Abstract

Objectives: Given the large amount of inflow of Foreign Direct Investment to Odisha, this study aims to find out the FDI elasticity of employment and poverty in Odisha (India).

Methods/Statistical Analysis: Mostly secondary data are used in this study, which is supplemented with grassroots level evidences. FDI inflows and industrial employment data are collected from RBI and Directorate of Industry. The analysis has been done by tabular and graphics presentations and through regression. Semi-log model is fitted to compute the growth rate of FDI inflow and economic growth of the state. Double log model has been fitted to examine the FDI elasticity of poverty via employment.

Findings/Application: The study found that there is huge inflow of FDI into the industrial sector of Odisha during 2002-03 to 2016 especially contributed by POSCO, Arcelor Mittal and Vedanta. However, both the FDI elasticity of employment and FDI elasticity of workers have shown statistically insignificant relationship and hence failed to reduce poverty. FDI by Vedanta in Lanjigarh, Jharsuguda and by POSCO in Jagatsingpur has captured agricultural land and forest, where a large proportion of people were depending for their livelihood, which have laid down multiple burdens among the displaced households. The displaced households got deprived from their permanent source of livelihood as the establishment of the factory destroyed the forest on which the households have been depending for ages together. The factory also encroach the agricultural field, which was the source of staple food security for the displaced as well as nearby living households. Further, the company has failed to provide a permanent source of livelihood to these households, which has broken down the health and education conditions of these households. Hence from the policy perspective agricultural land may be refraining from FDI venture.

Keywords: FDI, Employment, Poverty, Odisha, Livelihood.

1. Introduction

Investment is the important determinant of economic growth. A higher level of national income can generate a larger level of saving and investment in the country. But developing countries like India and within the country, the Indian states are neither having higher state's income or national assistance nor having higher saving and investment. In such a situation Foreign Direct Investment (FDI) can fill the gap between desired investments and desired saving [1] and also between desired foreign exchange requirements and net export earnings [2]. In case of India there is scarce of capital resources that are not sufficient to invest in different sectors for various developmental activities at the domestic level, which led to a large variation in the share of Government investment across the states of India. Thus, India has gone for external finances and opened up her economy for FDI inflow.

FDI is the investment made by a country in terms of long term equity investment in the form of new plant, machinery and in other real assets in the other country [3]. It is made by Multi-National Enterprises (MNEs) or by a non-resident in an enterprise of host (recipient) countries. Broadly, FDI would help in complement and supplement domestic investment for achieving a higher level of economic growth and providing opportunities for employment generation there by poverty reduction, for technological up gradation, access to global managerial skills and practices, optimizing utilisation of human and natural resources in a developing country like India. It helps the country for competing internationally with higher efficiency and promote higher rate of growth.

After liberalisation, different states of the country allowed FDI to operate in their own state including Odisha. Hence, it became a major concern, particularly to Odisha as the state received a bulk amount of FDI. Further, given the extreme poverty in the state, it was expected that the bulk inflow of FDI may ameliorate such high magnitude of poverty via employment. The major attraction of FDI to Odisha is her rich mineral resources and low labour cost. The major reason of allowing FDI to the state is rampant poverty, lack of employment generation and low economic growth. A large amount of FDI inflow into the state might have generated employment and there is possibility of poverty reduction. But no such study has carried on so far. Therefore, the study attempts to discuss the impact of FDI on poverty reduction through employment generation in Odisha. The rest of the paper divided into four sections. Section II presents the reviews of the literature on FDI and poverty situation in Odisha, followed by section III presents the objectives, hypothesis and methodology of the paper. Section IV analyses both the secondary as well as primary information and section V concludes the paper.

2. FDI and poverty in Odisha

Though a positive impact of FDI on poverty reduction was expected, as literature suggests FDI led mineral extraction has no significant impact on poor people living in the locality where FDI projects are located. Rather large numbers of people live without shelter, food, medical facilities and employment. As pointed out in the literature [4] - the FDI led mineral extraction have three basic features – (1) it is violating the constitutional Act by weakening the democratic rights of the poor through forceful acquisition of land, habitat, common property resources (water, forest), livelihood sources and socio-cultural milieu; (2) inducing poverty and human under-development by providing negligible and tardy compensation (rehabilitation and resettlement); (3) creating scope for people's agitation in democratic/undemocratic ways. Hence the present patterns of industrialisation are more displacing, exclusionary (exclusion of labour in lieu of technology) and undemocratic in nature. It produces immediate gainers but permanent losers. There by it has increased the corporate profit but human misery as well. Hence, the Authors have opposed the current pattern of growth, i.e. the corporate-led industrialisation and suggested for public investment on employment generation by involving the poor, mostly the uneducated and illiterate in the creation and distribution of wealth not by destroying the livelihood but by using the vacant or uncultivable land. This may also reduce disparities among caste, religion and regional.

In Odisha FDI by Vedanta and POSCO have displaced and exploited the livelihood of the large number of people. In [5] pointed out that agricultural sector is the only significant determinant of state domestic product of the state but that is declined while the mining sector increasing. On the other hand the mineral based projects are facing opposition from the people, especially those are to be displaced and those are to be indirectly affected. He stated mining projects displaced people, therefore the locality of the project area opposed for construction because these are capital intensive project and do not create jobs. Based on the National Sample Survey data, the state had the second highest rural and urban unemployment rate in 2004-05. Besides, as per the District Level Household and Family Survey 3 in 2007-08 this state is very poor in the Human Development Index. The Author concludes that industrialisation to take place under some rules and principles, so that there would be no negative externalities out of project.

In [6] the motive behind the FDI through POSCO-India project is to seek natural resources and hence it has faced hurdles from the very beginning of the setting up its integrated steel plant. The main reasons for the delay in the project are the failure to build local political consensus on the project, regulatory complexities, dispute on government record on the land, and compensation. In this regard, the reasonable and fair compensation for the affected peoples is essential. Creating sustainable new employment in the relocation zone is necessary as well. Framing of socially responsible resettlement policy and fostering of local consensus on the cost and benefits of resource seeking FDI projects can be useful in expediting the implementation of such projects. In [7], in their study 'Role of FDI in Economic Growth in Odisha', stated that Odisha is a rich house of natural resources. These include Iron ore; Manganese, Coal, Bauxite, Dolomite, Tin, etc. Besides, reforms in infrastructure have made an atmosphere conducive for major industries of the world to look forward to Odisha for industrial growth. They have mentioned Odisha is a hub of mineral resources.

The combination of domestic private foreign investment and multilateral investments is likely to propel Odisha's economic growth momentum in future'. From 1991 to 2004 Odisha attracted 0.9% of India's investment nearly US\$ 370 million. Majority of the investment are in electricity generation and mineral-based industries including aluminium and steel. In [8] pointed out the domestic exploitation of natural resources by Tata Steel from Odisha and transporting them to different projects set up in other state, which resulted that the value addition take place in other state but Odisha left over with pollution, health hazard, and adverse livelihood. The state continued to suffer from high social costs of mining like environmental degradation, waste land, air and water pollution, damage to agriculture, etc., due to increased mining activities by Tata Steel and other corporate entities in the post-Independence period but got no benefit in terms of local value-addition. In [9] stated the FDI related mining induced displacement as jettisoned the affected people from their land and livelihood has pushed them to hunger and deprivations, where the SCs/STs face multiple burdens and the FDI has led marginalisation in the state. Therefore, the author has proposed for adequate and effective rehabilitation and resettlement provisions.

The above reviews suggest that FDI could have help the people of Odisha either by generating additional employment along with fair compensation, rehabilitation and resettlement or by boosting the state economic growth. But FDI has negative impact on people. People are affected from displacement, lost land, forest etc., which is considered an important sources of livelihood for them. They also suffered with different air pollution related disease, polluted water from river, noise pollution rather getting benefitted from FDI project and poverty yet remained one of the important issues of concern. Hence, there is a need to discuss the trends and patterns of FDI and its impact on employment generation and poverty reduction in Odisha. The present study covers the FDI elasticity measures to examine the changes of poverty with respect to change in per unit of FDI inflow (via employment) and to study how far FDI has been successful in poverty reduction in the rural primitive tribal area of Odisha where the FDI project has started.

3. Objectives and Hypothesis

The broad objectives of the study are to examine the trend of FDI inflow and its effectiveness on poverty reduction, and improvement on other socio-economic condition of the rural people, particularly the project displaced people. The precise objectives are (a) to examine the trend and pattern of FDI inflows to Odisha and its association with poverty, (b) to examine the FDI elasticity of poverty via employment in Odisha. And hence this may be hypothesised that FDI inflow holds no statistical significant relations with poverty reduction in Odisha.

4. Data sources and Methodology

The study is primarily based on secondary data but supplemented with grassroots level evidences. Secondary data on FDI inflows, and on industrial employment are collected from Fact Sheets on FDI provided by RBI, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Government of India (GOI), Directorate of Industries; Government of Odisha, Secretariat of Industrial Assistance News Letters, data provided by Team Odisha, RBI Bulletin, Handbook of Industrial Policy & Statistics, Government of Odisha and Government of India.

The data analysis has been done by tabular presentations and through regression analysis. Semi-log model is fitted to compute the growth rate of FDI inflow and economic growth of the state. Double log model has been fitted to examine the FDI elasticity of poverty via employment. Information collected from primary field is qualitative in nature and hence descriptive analysis has been carried on.

1. Semi-Log model

To find out the growth rate of FDI inflow (F), industrial workers and industrial employment over a period of time different log-linear regression functions are fitted, where the dependent variables are FDI inflow, industrial worker, Industrial employment and independent variable is time (T). Here the equation is $F = \alpha T^\beta$.

$$\text{Log (F)} = \alpha + \beta (T) \dots\dots\dots (1)$$

Here, 'α' is constant and dependent variable F is independent of α. Hence,

$$\text{Log (FDI inflow)} = \beta (T)$$

$$\text{Log (Industrial Worker)} = \beta (T)$$

$$\text{Log (Industrial Employment)} = \beta (T)$$

Since FDI inflow is nonlinear in nature, log of FDI has been taken and regressed with time (T). In this model the slope coefficient β measures the relative change in 'FDI' for a given absolute change in 'T'.

$$\beta = \frac{\text{Relative change in FDI}}{\text{Absolute change in T}}$$

The trend growth rate of FDI inflow, trend growth rate of industrial Worker and trend growth rate of Industrial Employment from 1991-92 till 2009-10 can be obtained by using the Semi-log model. That is

$$\text{Growth rate} = [\text{Antilog}(\log \beta) - 1] * 100$$

$$\text{Or} \quad \quad \quad = [\text{Antilog}(B) - 1] * 100$$

$$\text{Log } \beta = B$$

2. Double-log model

The FDI Elasticity of industrial worker (W) and industrial employment (E) from 2002-03 to 2009-10 can be obtained by using the double-log Model.

$$W = \alpha F^\beta \dots\dots\dots (2)$$

$$E = \alpha F^\beta \dots\dots\dots (3)$$

Further to compute elasticity logarithms has been taken in both sides and hence

$$\text{Log (Industrial Worker)} = \log \alpha + \beta \log (\text{FDI Inflow}) \dots\dots\dots (4)$$

$$\text{Log (Industrial Employment)} = \log \alpha + \beta \log (\text{FDI Inflow}) \dots\dots\dots (5)$$

Here, α is intercept coefficient and β is slope coefficient. Double-log Model helps in calculation of FDI elasticity of industrial worker and industrial employment that is percent change in industrial employment due to percent change in FDI inflow and percentage change in industrial employment due to percent change in FDI inflow.

3. Trend and pattern of FDI inflow in Odisha

Odisha is one of the Indian states endowed with varieties of mineral resources, which includes Iron ore, Manganese, Coal, Bauxite, Dolomite, Tin etc. These huge mineral resources have played an important role to make Odisha one of the hot destinations for industries. Because of the existence of these resources big industries like Rourkela Steel Plant, National Aluminium Company, National Thermal Power Corporation have established their positions in India. However, due to lack of adequate financial resources to explore the mineral resources, the state may look for capital assistance either from central government, international organisations or in the form of FDI. Hence, FDI inflow may be an important source of capital for Odisha [7]. Government of Odisha allowed FDI into different sectors only after the introduction of economic reforms, i.e. after liberalisation. The FDI inflow into the state is highly concentrated in two sectors – (a) mineral sector and (b) coal sector to produce electricity. Prior 1991 the domestic private investors especially Tata Steel was exploiting the mineral resources of the state at lower cost and supplied it to different parts of the country for manufacturing value addition. In the post 1991, Odisha Government allowed four major FDI led company namely POSCO India Pvt. Ltd at Paradeep in Jagatsingpur and Arcelor Mittal India Ltd. at Patna in Keonjhar district in steel, Vedanta Aluminium Ltd. at Lanjigarh and Jharsuguda in Aluminium.

POSCO is the largest FDI attract company projected cost with ₹51,000 crore signed MoU with state Government on 22.06.2005 to produce 12 MTPA (million ton per annum) steel. The increasing demand for steel in Asia and abundant iron ore in Odisha made the POSCO to look towards India. POSCO has planned to invest about 12 billion US dollars to produce 12 million tons of steel per annum. It is the largest single FDI project in Odisha. Growth in the iron and steel sector remained marginal in the 1995-2000, but in the post-2000 it increased rapidly [6]. Like POSCO, Vedanta is also a large mineral based company in the process of establishing a major project in Odisha. By November 2005, government in Odisha had signed 43 Memorandum of Understanding (MoUs) in the iron and steel sector. The Odisha government notified its new industrial policy in March 2007. In order to attract investors, the policy created a framework of governance structures with the sole purpose of speedy and easy establishment of industrial projects. Vedanta at Lanjigarh signed MoU in 07.06.2003 with projected cost Rs.4000 crore to produce 1.00 MTPA aluminium. Arcelor Mittal India Ltd signed MoU on 21.12.2006 to produce steel 12.00 MTPA with project cost ₹40,000 crore and Vedanta in Jharsuguda Signed on 04.04.2007 to produce 0.25 aluminium with projected cost ₹8400crore. The high growth rate of the State's economy in recent years has been led by high growth in the industrial sector. This sector has averaged a real annual growth rate of 12.56%, at 2004-05 prices, during the first three years of the 11th Five Year Plan. The industrial sector has been included manufacturing, mining and quarrying and electricity- gas-water supply. The manufacturing subsector contributes about 60 percent of real GSDP within the industrial sector. Within manufacturing, the share of registered manufacturing is high 86 percent and it is increasing over time [10].

Most large-scale industries in Odisha are mineral based and in producing of steel, Odisha retains 10% of the total capacity of the country. Odisha has been receiving heavy investments in the industrial sector in recent years. If the investments from Vedanta, Arcelor and POSCO are fully materialised the steel producing capacity of the State will improve substantially and the state will grow at a much faster rate. NALCO and Vedanta Aluminium Limited (VAL) have started to produce aluminium and in January 2010 it is observed that total aluminium production in Odisha is 48% of total production by all the four big plants in the country. The mining sector contributes about 7.5% of real GSDP of Odisha. Being a favourite investment destination of global investors, this sector seems important for rapid growth. Odisha ranks highest due to a large value of mineral output in the country. Its share is also increasing over a time period along with exports of minerals and ores from the State. Besides, the sub-sector has been increasingly employing capital intensive and labour saving technologies with a view to enhancing its global competitiveness, which may go against the expectation of poverty reduction by employment creation [11]. Further data on FDI inflow on time series basis are very scanty. However, by collecting the discrete data, the trend behaviour of FDI inflow into the state can be understood. Trend of FDI inflow into Odisha from 1991 to 2016 are presented in Table 1, which depict that-since 1991 there have been regular FDI inflow into the state. As a cumulative sum it touches worth of around one lakh million rupees by 2016.

Table 1. Trend of FDI inflow in Odisha from 1991 to 2016

Year	Amount of FDI in Rs. Million
August 1991-December 2003	82293.13
January 2004-December 2004	0
January 2005-December 2005	2616.64
January 2006-December 2006	1035.94
January 2007-December 2007	302.63
January 2008-December 2008	0
January 2009-December 2009	3990.81
January 2010-December 2010	3979.79
January 2011-December 2011	1368.51
January 2012-December 2012	2876.37
January 2013-December 2013	923.71
January 2014-December 2014	2474.69
January 2015-December 2015	380.07
January 2016-December 2016	650.34
Cumulative total	102891.84

Source: Department of Industrial Policies and Promotion, Govt. of India

4. Trend and pattern of poverty in Odisha

Though Odisha is rich in natural resources, a major proportion of total population of Odisha are living below the poverty line. They are unable to get even their basic necessities of life. Table 2 shows the percentage of people living below the poverty line in Odisha from 1973-74 to 2009-10. Data reveals that percentage of people living below the poverty line in the state has increased from 66.18 % in 1973-74 to 70.07% in 1977-78 and then declined to 65.29% in 1983-84, 55.58% in 1987-88, 48.56 % in 1993-94, 46.4 % in 2004-05 and then it declined to 37% in 2009-10. Poverty in Odisha started declining after 1978; decline was more pronounced between 1977-78 and 1987- 88 that is 14.5% points. Similarly, in rural Odisha, the percentage people were living below the poverty line has increased from 67.28% in 1973-74 to 72.38% in 1977-78. It has reduced from 72.38% in 1977-78 to 67.53% in 1983, 57.6 % in 1987-88, 49.7 % in 1993-94, 46.8 % in 2004-05, 39.2% in 2009-10 and reduced to 35.69 % in the year 2011-12. Between years 1993-2005, poverty has declined only 2% points and rural poverty has declined 2.9% points. Though, poverty is reducing over the period in Odisha, the rate of reduction is not significant and the percentage of poor is still too high.

Table 2. Percentage of people living below the poverty line in Odisha (1973-74 to 2011-12)

Year	Rural	Urban	Combined
1973-74	67.28	55.62	66.18
1977-78	72.38	50.92	70.07
1983-84	67.53	49.15	65.29
1987-88	57.64	41.53	55.58
1993-94	49.72	41.64	48.56
2004-05	46.80	44.30	46.40
2009-10	39.20	25.90	37.00
2011-12	35.69	17.29	32.59

Source: Planning Commission, Govt. of India

5. FDI elasticity of poverty via employment in Odisha

The analytical linkage stated here is that if there will be inflow of FDI then it can generate labour employment and hence can reduce poverty and therefore the FDI elasticity of poverty (via employment) may be inversely related but FDI elasticity with employment can be positively related. But the contradictory view is that since there is inflow of FDI and it destroyed the sources of livelihood of the people especially the forest and the agricultural field, it may dampen employment and can have also positive relationship with poverty, i.e. increase in FDI can increase the poverty.

6. Trend in industrial employment in Odisha during 1991-92 TO 2014-15

Employment generation is the most important indicator of economic development as it boosts the per capita income of people. There is positive relationship between employment and per capita income. Foreign Direct Investment (FDI) is regarded as a driver for economic development as it brings capital, technology, management know-how, jobs and access to new markets. It is stated that an inflow of FDI improves economic growth and thereby enhances employment opportunities of a country [12]. The Social and distributional impact of FDI in the host country has been generally favourable in developing countries of various regions. Apart from, bringing a package of highly productive resources into the host economy, there has been a visible positive impact on the creation of jobs in FDI attracting sectors as well as in the supportive domestic industries. There are three channels through which poverty can be reduced by FDI inflow, first is through employment generation directly, second is through increasing revenue of the country which percolated down in terms of government-led programs that improve social safety nets and redistribute assets and income among poor indirectly [13] and the third is Government of India imposes tax on the production activity of foreign investors in order to generate the tax revenue which is required to fund assistance to the poor through their tax contribution and by stimulating growth and broadening the tax base indirectly. Here, we have tried to see to what extent FDI inflow is employment sensitive? In Odisha, FDI could have generated employment in mining sector and Tata steel and Aluminium industries. But, due to opposition of Tribal of the locality in order to extract the raw materials the Vedanta aluminium industry at Lanjigarh confronted continuous people's opposition.

The People living in the village near by Niyamagiri hill were directly or indirectly lost their sources of livelihood as they were fully dependent on the forest for sources of income. People living in that area mainly dominated by Tribals and they are not quite educated to be employed in the industry. They may be employed mainly as a casual labour and industrial worker. FDI mainly associated with these industrial workers. Mining and quarrying provides employment to different sections including tribal. But this sector has been increasingly employing labour saving and capital-intensive production techniques and technology over the years. Hence, the employment growth in this sector is either tardy or has been decreasing over the years. In 2004-05 there about 49837 people are directly employed in mining sector. The total employment in organised sectors has declined slightly over the period 2000-2009 that is 7.98 lakh in 2000 and 7.31 lakh in 2010 while the share of private sector employment has been steadily increasing. Table 3 provides the data on total workers and total employment generated in industrial sector, which depicts that the trend growth rate of workers and employment in industries during 1991-92 to 2014-15 are 0.21 and (-), 0.01 percentages respectively. It is also observed that there have been fluctuations both in total workers and total employment. This may increase the vulnerability of workers.

Table 3. Industrial workers and Employment trend in Odisha during 1991-92 to 2014-15

Year	Total Workers	Total Employment	Col2/Col3*100
1	2	3	4
1991-92	129963	166462	78.07
1992-93	138016	176092	78.37
1993-94	138363	180343	76.72
1994-95	147686	189480	77.94
1995-96	151471	186538	81.20
1996-97	134786	177860	75.78
1997-98	136146	178925	76.09
1998-99	95669	140087	68.29
1999-00	99735	147452	67.63
2000-01	99127	128662	77.04
2001-02	89349	116434	76.73
2002-03	92686	120367	77.00
2003-04	98430	125166	78.64
2004-05	116706	145747	80.07
2005-06	110246	144554	76.26
2006-07	125195	162558	77.01
2007-08	145276	184886	78.57
2008-09	174774	213534	81.84
2009-10	187756	227525	82.52
2010-11	229404	282860	81.10
2011-12	223571	284637	78.54
2012-13	213079	263651	80.81
2013-14	206788	260771	79.29
2014-15	214836	262817	81.74

Source: Annual Survey of Industry, Govt. of India

7. FDI elasticity of total workers and total employment in Odisha

To examine the FDI elasticity of employment, the log (FDI) has been regressed with log (employment), i.e. log FDI is the independent variable and found that in every one percent change in FDI inflow has only 0.03 times a change in total industrial employment which is less elastic. The 't' statistics shows that the relation is not statistically significant. Further, we have also regressed the log (FDI) with log (workers), and found that in every 1% change in FDI inflow has only 0.039 times changes in total industrial workers, which is less elastic in itself and worsen than the total employment case.

Here too that statistics shows that the relation is not statistically significant. Hence, this can be concluded that FDI inflow is not having significant impact on poverty reduction through employment generation. However, it is found that poverty in Odisha has reduced during this time, which might be due to some other reasons.

8. Impact of FDI at the grass root level

The impact of FDI at the grass root level has been studied in some of the villages of Jharsuguda district of Odisha. Several villages such as Bhurkhamunda and Baghiamal and affected areas such as Brundamal, Bhagipali, Banjari, Kureibuga, Siriapali, and Samleswari Colony (displaced persons' new home itself) have been affected due to Vedanta Factory in Jharsuguda district. These areas are mainly dominated by Scheduled Tribe and Scheduled Caste. We have visited the affected area and undertaken the interview of different households in formal way and from which the following field report have been presented.

9. Issues for protest during pre-Vedanta period

The people of the displaced villages could foresee the future loss if the proposed plant gets established in these villages. Realizing the depth of their loss, they voiced their concerns on these following issues. If the proposed Aluminum Plant is established, the homelands are to be lost which never come back again by any cost, the productive and fertile land area will decrease, the factory release poisonous gas and smoke which will pollute the air. Land pollution leads to soil erosion, may lead to massive amount of industrial solid wastes such as plastic bags and wrappers which do not decay and creating an unhealthy living condition, people especially children will suffer from health problems, associated with the chemical effluence etc.

10. Land acquisition process

M/s Sterlite Energy Limited and Vedanta Aluminium Limited required 4401.231 acres of lands, out of which 3335.04 acres of private and 1066.191 acres from Government lands for establishment of its Smelter Plant, Captive Power Plant, and Independent Power Plant at Jharsuguda. The Requisitioning Agency (IDCO, Bhubaneswar) has filed requisition for acquisition of 3335.04 of private land and 1066.191 acres of Government land for its establishment.

The affected people of Brundamal, Bhurkhamal, Baghimal, Banjari, Kuberbaga, Katikela, Dumdumi, Patrapali, Siriapali Paramou villages gathered together to form a samiti known as "Anchalika Gana Sangram Samiti" (AGSS). This Samiti created awareness among the public and encouraged the villagers to fight for their land but all failed and the Vedanta Aluminium Limited finally got lands by offering different facilities to the project displaced families such as: the resettlement of the Project Displaced Families (PDF) an R&R Colony would be established at the Brundamal. Each member from the PDF would be given technical training and after completion of training they would be employed in the Vedanta Aluminium Limited, the project authorities also give preference to local persons in the matter of employment, the project authorities would also look after periphery development such as infrastructure, health, education, environment, sport and youth development etc.

In October 2004, the Government of Odisha signed a Memorandum of Understanding (MoU) with Vedanta (a British registered company) for setting up an Aluminium refinery with the associated Captive Power Plant in the state of Odisha. This MoU also included supplying 150 million tonnes of bauxite for the Vedanta alumina refinery at Lanjigarh. Towards this the Government of Odisha identified Niyamagiri hills as the initial source of bauxite supply to the extent of 78 million tonnes.

11. Payment of compensation

The details of compensation paid to the land losers for three villages are presented in Table 4, which depicts that the maximum amount of compensation is received by Banjari (93%) followed by 72 % in Kuberbaga and 30 % in Brundamal.

Table 4. List of Compensation paid to Land looser

Sl.No.	Name of the Village	Land loses received compensation (in %)
01.	Banjari	93
02.	Kuberbaga	72
03.	Brundamal	30

Source: Agenda Notes for 4th RPDAC(Rehabilitation and Periphery Development Advisory Committee) Meeting of M/s Sterlite& Vedanta Ltd

12. Failure of R & R policy 2006

According to the R & R Policy 2006 of the Government of Odisha, all families shall be eligible for employment by the project causing displacement or loss of all agricultural land. Each original family will nominate one member of such family for purpose of employment. But, in reality it is found that, the Vedanta is unable to provide such employment to all who are eligible to get employment. According to the data collected during the field work, Bhurkhamunda village was one to lose the maximum lands (749.83 acres) and unfortunately, the maximum unemployed people belonged to this village. The RPDAC has identified 71 Project Displaced Families (PDF), who have opted for one time cash grant in lieu of employment. But, in reality, most of the PDFs are yet to get one time cash grant in lieu of employment. The RPDAC stated that, 22 persons out of 74 PDFs have been engaged in the project after completion of training has not been employed regularly. It was brought to notice by the 4th RPDAC. The meeting held on 8.01.2010 and the 52 trainees out of 74 PDFs undergoing technical training was completed in June 2010 and absorbed in the company. But, still now most of the trained persons have not been employed in Vedanta.

The Vedanta offered the facilities to establish R & R Colony named as Samaleswari Nagar, located at Brundamal village for the settlement of project displaced families (PDF). But, in reality, 127 families have been provided houses in R & R colony and remaining 18 families were not provided till the primary survey, which are still knocking the door of Vedanta Main Gate daily. It is very sad to explain that, the houses which are provided for displaced person maximum are not in a condition of use today. They explained that, the roof leaks in rainy season frequently. It is found during visits that, the roof of maximum houses are really broken due to poor construction. Also, the displaced people are not satisfied with their compensation which was given to them by the Vedanta Aluminium Limited.

13. Periphery development

There is a Mobile Health Unit (MHU) running in 12 displaced villages to provide health care facilities to the people. According to Vedanta's data, this MHU visits all the villages on a regular basis and attends to the patients suffering from various ailments and approximately 2000 patients are being covered every month. In contrary, the data of people's differs from the Vedanta's data. The realities opens during short visits that, the MHU visited all the villages on a regular basis and attended to the patients and it was continuing up to 2 years of its inception. Today, it is being rarely seen throughout the year, one of the witnesses told me during my visit the area.

14. Problems of the people after establishment of Vedanta

Three categories of households have been found in the field-(a) people those who had land in that area (Owner of the land), (b) people those who had no land of their own but were dependent on others land as tenant, and (c) the people those who are living nearby Vedanta company. Discussions have been carried on to know the impact of FDI on them and on their land. The land on which Vedanta Aluminium Limited was established covers larger part of the forest, agricultural and common property resources. Nearly 90 percent of Bhurkhamunda and 76% of people of Brundamal depended on forest resources for their livelihood like bidi making, broom making, kendu leaf and fuel wood collection.

It becomes a problem for those people who are depending on the forest resources for their livelihood. On the contrary, Vedanta Company doesn't take any effective initiative for providing empowerment to these people. In the Katikela region the people have raised their voiced against Vedanta Aluminium Ltd. relating to the construction of ash pond near the Bheden River. No information was communicated by company's authorities and also by government authorities to the people regarding the construction of the ash pond yet.

Secondly, the bottom ash contains harmful chemicals silica, chromium, uranium, radium etc which would be long term health hazard both for the human being and other living creatures. The harmful chemicals have been affecting different plants and crops. The people are facing scarcity of water during summer season for the last two to five years. The Vedanta Aluminum Ltd. drilled a number of deep bore-well for fulfilling its requirement of water in the Katikela region as a consequence the level of ground water was decreased.

The protest movement against Vedanta has been continuing since pre-Vedanta period till now. People are facing problems in different areas like environment pollution, employment, deforestation, agriculture, water resources etc. therefore, the project displaced people raising their voice against Vedanta. No doubt, Jharsuguda district has made strides in progress, but the villagers of proposed plant site areas are exempted from their rightful privileges so that they are protesting till date and striving to get their rightful place. The Vedanta case study at Jharsuguda district stated that – FDI has laid down multiple burdens among the displaced households. The displaced households got deprived from their permanent source of livelihood as the establishment of the factory destroyed the forest on which the households have been depending for ages together. The factory also encroach the agricultural field, which was the source of staple food security for the displaced as well as nearby living households. Further, the company has failed to provide a permanent source of livelihood to these households, which has broken down the health and education conditions of these households.

5. Conclusion

The study found that there is huge inflow of FDI into the industrial sector of Odisha during 2002-03 to 2016. The major FDI led companies contributed to such large volume of FDI inflow includes POSCO, Arcelor Mittal and Vedanta. However, these large inflows of FDI have no significant impact on poverty reduction in Odisha. FDI by Vedanta in Lanjigarh, Jharsuguda, and Arcelor Mittal in Keonjhar and by POSCO in Jagatsingpur have captured agricultural land and forest, where a large proportion of people were depending for their livelihood.

FDI has laid down multiple burdens among the displaced households. The displaced households got deprived from their permanent source of livelihood as the establishment of the factory destroyed the forest on which the households have been depending for ages together. The factory also encroach the agricultural field, which was the source of staple food security for the displaced as well as nearby living households. Further, the company has failed to provide a permanent source of livelihood to these households, which has broken down the health and education conditions of these households.

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