



Study of Socio-economic Conditions and Livelihood of the Dongaria Kondhs and the Issues related to proposed mining in Niyamgiri Hills

SPWD



Society for Promotion of Wastelands Development



Livelihood of Dongria Kondhs



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TERMS OF REFERENCE FOR THE STUDY

Representatives from National and Regional NGOs, Jharkhand University, Mining and Environmental Institutes at Dharbad and representative from local Institutes attended a workshop on mining issues in Ranchi in March 2009.

SPWD had initiated work on reclamation of wastelands 25 years earlier which focused primarily on rehabilitation of mine dumps, TSRDS took the issue forward in the mine dumps of Bokaro river basin catchment area. Recently Center for Science and Environment published a book called Rich lands poor people which reopened the issue of mining from the point of view of natural resources and livelihood. The CSE book draws the link between India's rich mine resources poverty and forest resources, and it appears that mining is being done to uproot forest dwellers which is not the case. Prior to the British over 200 years earlier the technology was different. Large scale mining was first started in the coal fields of Raniganj West Bengal Coal. From 1970-80 onwards mechanisation in the mining sector has increased. Due to the geological formation, commercially viable minerals are located in the forest area and hence mining has become synonymous with environment destruction. In Rajsamand district of Rajasthan the issue is different as it is not tribal area nor is the forest area in the upper catchment being mined.

Jharkhand State is at the heart of mining in India (primarily of coal) accounting for 13.2% of its GDP and it employs 26% of the workforce engaged in mining across the country. In the context of coal, 78% of the production is being used for electricity and till 2030 also 42% of India's energy requirement will continue to depend on coal. As coal & petroleum are also used for locomotion the role of mining in other sectors of development extend far beyond what is shown as its contribution to the GDP and employment. In the case of Phosphate mining, 90% of phosphate production in the country comes from Udaipur. While a number of people are affected, there are benefits to a large section of the society.

The alternative to coal from hydroelectricity is limited as it leads to submergence of vast areas and consequently one also has to deal with large scale displacement of the human population and effects on the bio diversity. In Chamabal river, Wild life promotion board has put a halt to the construction of four hydro power stations as they will affect the alligator and dolphin sanctuary which is located in a 26 km stretch.

In case of energy, bio fuel and solar energy will be the major source after many years (less if political will exists). America's use of maize for ethanol has doubled the world prices of maize, leading to a crisis for the poor in Africa and other developing countries.

Production of coal and iron ore have increased exponentially over the last ten years in order to fuel the growth in other sectors. Since this is predominantly through large scale mechanization facilitated by open cast mining labour demand has reduced considerably. Prior to 2000, for every one crore rupees worth of production in mining sector 25 people were employed now this has reduced to 8 people in 2008. This kind of development without corresponding employment potential, is leading to large number of agitations across the country.

The basic areas covered were

- Perspective on mining and its relation to natural resources on one hand and livelihoods on the other. The perspective focused mainly on mining issues SPWD has come across in its project areas vis coal (Jharkhand), phosphate (Rajasthan), bauxite (Orissa), stone mining (predominantly from Rajasthan, A.P., Karnataka and Orissa).
- Specific study on coal mining drawing on the study done by SPWD in this regard.
- Some features from other mining studies - issues related to the phosphate mines near Udaipur region, bauxite mining and its potential impact in forest areas and the Dongria Khonds case study of Lanjigarh and Sterlite.
- Issues related to environment impact assessment.

Need for a closer look at the Niyamgiri issue

Niyamgiri Mountains of Lanjigarh area (Kalahandi district, Orissa state of India) is 4248 feet high. It is the source of 32 rivulets contributing to Vansadhara and Nagavali River flowing through Kalahandi and Rayagada. It contains elephant, sambhars, leopards, tigers, barking deers, various species of birds and other endangered species of wildlife in 672.018 ha forest land. More than 75% of the hill is covered by thick forests with an average density of 0.6. It has more than 300 species of plants, trees, etc. including about 50 species of medicinal plants. Six of the species are listed in the Red Data Book. These forests are yet to be surveyed properly for their floral and faunal wealth. This is because the bauxite is oolitic and pisolitic with high level of porosity resulting in high water retention capacity. It occurs beneath the laterite-capped plateaus and is characterized by the existence of a plateau supported by relatively impervious laterite layer with poor water retention capacity.

Two major rivers - Vansadhara and Nagavali and 64 perennial streams are flowing through this forest. Three Primitive/ most vulnerable communities Dongria, Kutia and Jharania Kondha live in Niyamgiri for generations.

Impact of mining in Niyamgiri

- Vedanta - Sterlite want to mine bauxite from Niyamgiri and process the same at the foot hill of Niyamgiri.
- Increased heat and depletion of ground water
- Bio Diversity under attack through blasting
- Deforestation of indigenous variety of trees killing number of tubers and creepers
- Plantation of commercial tree - No food
- Drying up of tributaries & rivers
- Blasting leads to sand casting on cultivable land
- Water, air and soil already contaminated by industrial waste
- Sharp fall of NTFP food items and medicinal plants
- Poisoned water, air and land
- Liquor flow through mafias causing violence against women (Trafficking)
- Company goons exploit the community especially women

The Plight

- The community hung between modern civilization and their lost identity
- Suffer from break of social fabric leading to forms of violence especially against women
- Lack of alternative livelihood and loss of livelihoods forces them to flee from the area
- Indigenous/ tribal communities facing extinction in the process

Campaign to Save Niyam Raja

- PTG/MVT groups struggling for survival in Niyamgiri - Schedule area - Niyamgiri Surakshya Samiti, Sachetan Nagarik Manch, Adim Adhikar Surakshya Samiti
- Dongaria, Kutia and Jharania Kondh have taken vow to protect their place of worship Niyamgiri through Mass Worship of Niyam Raja
- Participation in the AGM held in London during '06, '07 and '08
- Massive online and Post Card Campaign
- Photo exhibition in important locations in Delhi to sensitizs others on tribal issues
- Highlighted in the International Media
- Peoples' struggle going strong on the ground - burning cloth distributed by Vedanta
- Stopped Vedanta from mining Niyamgiri
- Construction work by Vedanta was delayed due to the peoples' protest
- Action against Vedanta by Norway by withdrawing pension fund
- Case of Human Rights presented to UNSR - Prof. Annaya
- Network with Chatishgarh, Jharkhand & Andhra Pradesh

Concern - Recommendation

- From where will the tribal community draw the traditional food, medicines and livelihood they are depended on for generations?
- What about the loss of traditional knowledge that sustained not only the tribal but the civilisation?
- How do they deal with the pollution and the poison emitted from mining and processing?
- How would their development be ensured while protecting their environment?
- What sustainable alternatives could be proposed to displacement induced development?
- Will the indigenous community get extinct because of our benefits in the name of development?
- How can mother earth be protected from dying - global warming and climate change?

People of Niyamgiri are saying that they will not sell their god for profit. So they want that Vedanta to Quit Niyamgiri. Slogan of the people of Niyamgiri is *if We die ... you die too*. What rate of extraction of mining is necessary and for whom benefit. One group is running forward. Development should be broad based and participatory system to be adopted by civil society, local community, mining company and regulatory board and should have cultural value.

Proposed Study

1. Socio-economic status of the Dongria Kondhs in Niyamgiri Hills with special reference to bauxite and any other mining operations.
2. Current livelihoods of the Dongria Kondhs and the effect that mining has had on livelihoods and way of living of the Dongria Kondhs. (The ecological context will be juxtaposed on livelihood).
3. Exploring the possibilities of adding value/building forward linkages to the NTFP and other livelihood options of the Dongria Kondhs .
4. Recommending strategy that SPWD should adopt in this mining versus forest debate (ecology and sustainability) .

Bauxite, Alumina and Aluminium - in the World, India and Orissa

Aluminium has important domestic, industrial and military usage all over the world. The strategic importance of this metal for a country's advancement is immense. The major consumers of bauxite and alumina are the developed countries and countries such as Russia, China, Australia and India are the major suppliers.

The consuming nations such as the U.S.A. and the European nations have well thought out policies and infrastructure in place to safeguard their interests - when it comes to fetching supplies of bauxite, alumina and aluminium on the world market. The same is not true for India at least. There is also no evidence to believe that the terms of trade in these commodities favor the producing nations.

In India, while we have a National Mineral Policy, not much is known about our bauxite mining policy, except that the public and private sector alumina refineries in Orissa and other states have access to bauxite reserves at prices / cost under agreements with the State. In such a situation it is difficult to comment on whether mining in Niyamgiri is really needed and when.

Ecology - Land, Air, Water, Flora and Fauna

The Honorable Supreme Court has expressed its views in these matters. After consideration of the findings and opinions of the Central Empowered Committee (CEC) of the Supreme Court, Wildlife Institute of India (WII), Central Mine Planning and Design Institute - and others.

Bauxite mining is proposed in the Niyamgiri Reserved Forest (RF). There are no villages or hamlets in the proposed mining area. There are at least two hamlets on the way up to the proposed mining area. These are Ejrupa and Phuldumer. While there is a conveyor belt system leading up to the mining area - on the top - for bringing bauxite to the plant, it is quite likely that the movement of men, supplies and vehicles will irreversibly change the existing ecosystems in these two villages.

M/s. Vedanta Aluminium Limited's (VAL) plant at Lanjigarh has been in operation since 2007. As per Orissa State Pollution Control Board (OSPCB) officials, there have been some air and water pollution issues with VAL during the plant's running. Some pipe leakages and seepage in some areas of the red mud pond {designed by the Indian Institute of Sciences, Bangalore (IIS)} were also taken up and attended to by VAL. These issues not been out of the usual expected in an alumina refinery (including NALCO, Damanjodi) and have been attended to by VAL. There have also not been any reports of any air and water pollution out of the usual.

The water requirement of the VAL plant is met by bringing water by pipeline from the Tel river, 60 kilometers away. The Tel river should not be considered as a perennial river - with two-thirds of its river bed dry in March. The Tel river empties into the Mahanadi river.

When it comes to afforestation of the areas that will be mined out, it has been gathered that VAL will emulate NALCO. Here what may need examination is the extent to which the NALCO achievements have been a result of planned efforts or merely the long passage of time (the Damanjodi plant commenced operations in 1986). VAL's sincerity here is questionable as in three years of the Lanjigarh plant's operations, there is not even a passable green cover in the plant at Lanjigarh. This is despite a Supreme Court ruling in 2007.

Niyamgiri RF, an elephant corridor, was proposed as a wildlife sanctuary by the Ministry of Environment and Forests (MoEF) in 1998. In 2004, it was declared as an elephant reserve. The present status is not known.

Livelihoods - a change for the better?

There are two primitive tribal groups (PTGs) in Niyamgiri area. These are the Kutia Kondhs on the plains and the Dongria Kondhs in the hills. There are also two tribal development agencies working for their welfare - for some 35 years now. These are the Kutia Kondh Development Agency (KKDA), Lanjigarh and the Dongria Kondh Development Agency (DKDA). Interestingly, one of the villages where the plant has now been constructed, had been the recipient of KKDA's efforts and funding till recently. Despite a ban on sale of land in the area, it has been reported by the community that land has been acquired and is being acquired, for all practical purposes, by VAL.

The Kutia Kondhs live peacefully with members of other communities in the villages around the VAL plant. Many of them are from the villages displaced by the alumina plant construction. They also work as labourers at the VAL plant. That employment and business opportunities have been generated for the local populace of Lanjigarh by the plant cannot be doubted. But these livelihoods, be it a pan shop or jeep hire, have been more in the nature of a fall out of the VAL's plant's construction and operation and not by design. The livelihoods resulting are urban and industrial in character. In the rural areas, i.e. in the villages close to the plant, the livelihoods sought to be generated are token in nature, insufficient and do not make business sense (without significant value addition and/or branding) e.g. leaf plate making.

The Dongria Kondhs live mostly in the hilly areas. They have a close knit and viable society with the simplest of human needs. Their traditional livelihood priorities have been shifting cultivation, horticulture, plain land cultivation and collection of forest

products. The self sufficiency of these traditional livelihoods have been declining and is expected to decline in the days to come - given the State and Central government industrial concerns that influence such livelihood priorities.

Kalahandi district and Lanjigarh block in particular have a rich agricultural heritage despite poor irrigation facilities. The Agriculture Department has taken into account only the loss in area sown due to the VAL's plant construction which amounts to saying that the impact on agriculture will be limited to the area displaced by the plant's construction only. The major crops grown are paddy, maize, ragi, arhar, kulti, moong, biri, niger, mustard, cotton, vegetables and fruits such as mango, banana, jack fruit and guava. Presently in the areas around Lanjigarh town, food grains, vegetables and fruits are still available at reasonable prices as most produce is sourced locally.

Development

In the Niyamgiri context, the first question that arises when we talk about development is "Whose development?"

To quote the Supreme Court judgement of 23rd November 2007...

"...As a matter of preface, we may state that adherence to the principle of Sustainable Development is now a constitutional requirement. How much damage to the environment and ecology has got to be decided on the facts of each case. While applying the principle of Sustainable Development one must bear in mind that development which meets the needs of the present without compromising the ability of the future generations to meet their own needs is Sustainable Development. Therefore, courts are required to balance development needs with the protection of the environment and ecology. It is the duty of the State to under our Constitution to devise and implement a coherent and co-ordinated programme to meet its obligation of Sustainable Development based on inter-generational equity..."

Talking of development, there are some who have got their act right and some who are just plain at the receiving end. The East Coast Railway has been working on rail lines (for freight and passenger traffic) in the Lanjigarh Road station area (to become a Junction) while the VAL matter was in the courts. At the other end is the Roads and Bridges Public Works Department (R&B PWD), whose sanctioned roads have not been built to bear the brunt of heavily overloaded VAL coal and bauxite trucks, caustic tankers and alumina bulk containers. Of the gross tonnage transported on the subject roads, some ninety per cent is VAL plant traffic and at least three out of every five Light/Heavy Motor Vehicle is a VAL plant vehicle. It makes economic sense for the truck owners and drivers to overload - with a lower cost passed on to VAL.

Recommendations

i. Forest Management

The Forest Department has the onerous task of safe guarding our green wealth, without sufficient manpower, funds and modern day management inputs. This results in high levels of apathy, poor transparency and accountability. However at the end of the day it is some shining examples of forest protection that make rather than mar the day. An example is a Forest Division in Orissa which gladly parted with the following:

- a. Copy of the Range wise map of the Division with different categories of forests.
- b. Copy of the Division, Range wise Reserved Forests (RFs) and Protected Reserve Forests (PRFs) areas and boundary lengths.
- c. Latest Working Plan of the Division for study.

The above, along with GIS imagery, should make the task of monitoring afforestation and deforestation of a particular forest - over a period of time - a transparent exercise.

There is also a need for more funding for forest maintenance and afforestation. Along with greater citizen participation, so that the Forest Department can do its job unhindered. The Forest Department also needs to be more receptive to new horizons such as the Forest Rights Act and National Rural Employment Guarantee Act (NREGA). It may also over a period of time feel some need for NGO and other partnerships.

ii. Sustenance of Tribal Way of Life

The emphasis should be on preserving and promoting indigenous knowledge, and traditional livelihood resource bases while being receptive to any new opportunities in a fast changing world.

Conclusion

There is a need for informed discussions and consensus amongst subject matter specialists on bauxite mining and development in Orissa.

Background report on the study of socio-economic conditions and livelihoods of the Dongria Kondhs (PTG) in Niyamgiri

1. Of the five sections of the Kondh tribe, all the three major groups, namely the Deshia Kondh, the Kuttia Kondh and the Dongria Kondh are found in Rayagada district.
2. The Dongria Kondhs live in mountain villages in higher altitudes and they move down for marketing and for attending office jobs.
3. It would be of great interest and importance to determine the chronology of bauxite deposit finds in the various hills and the settlement of the Dongria Kondhs in the subject hills.
4. In a spiritual (and religious) backdrop, the Dongria Kondhs have developed an intricate relationship with nature and as far as social, economic and political circumstances permit; they maintain a holistic mode of resource use.
5. In the cultural history of Orissa, the Kondhs are well known though they had earned infamy for human sacrifices during their Meria festival.
6. In the beginning, the high terrain and topography hindered traders from reaching the Dongria Kondh.
7. The Dongria Kondhs are an assortment of subsistent foragers, shifting cultivators and horticulturists with connections to the local markets through the mediating role of the Dombs, an untouchable caste groups that coexists with the Dongria Kondh - in symbiosis (?). Along with the Dongria Kondhs, the Dombs may also be considered as forest dwellers.
8. The oral history of the Dongria Kondhs refer to the importance of the Niagara hill range as a place of heavy rainfall, cold climate and the birthplace of perennial hill streams.
9. Mythical attributes create a strong sense of attributes of conviction among the Dongria that they are the direct or indirect progeny of Niyamraja.
10. A patchwork of about 115 sq. km. of rugged mountain region is named Niyamgiri (Niyam) Hills. Further, the entire Niyamgiri comprises of four blocks enumerated in the Revenue Administration as Bissamcuttack, Kalyansinghpur, Muniguda and Bishrampur.
11. According to the opinion of many people interviewed in Kurli and its adjoining area, there were no people and settlements anywhere in the Niyamgiri hill range. The Dongria Kondhs were residing in the pockets of Lanjigada area and in some other places. People from these areas were casual visitors to Niyamgiri area. They were visiting the area with the purpose of hunting and food gathering. Since the hoary past, the area is considered very rich in natural resources and a fertile land for food production. After visiting the area in course of time they settled down permanently. But they never moved to the peaks of the mountains, as such places

- were regarded as the abodes of Niyamraja's kin. Niyamraja is the sole protector of the Dongaria and accordingly he is highly esteemed in Dongaria tradition.
12. Settlements were abandoned once the natural resources of that area were exhausted by the group. They subsisted on collecting material from their environment. Although the forest was dense and minor forest produce was adequately available, people did not give importance to produce due to a lack of need and knowledge.
 13. Very few patches of land belong to village communities and can be utilized for a settlement. For example, hill top forests are owned communally but no settlements can be built there.
 14. A village settlement may be denominated in two ways. Either by the name of the kudu (clan) of the first settle or a name referring to the name of the nearby hill stream, vegetation, any other physical features or any remarkable incident. However, the settlement is mostly known by the name of the kudu or clan of the people who settled there first or whose population is dominant. Though in the beginning, each settlement was inhabited by only one kudu, later families from another kudu, also resided with the permission of the members of the first clan.
 15. It is said that in the past legitimate land acquisition was decided by the king of Jeypore who reigned over the Niyamgiri hill range. People were of the opinion that the king of Jeypore had even a right over the land of the kudu in the past.
 16. Settlements are usually made on foothill slopes or the in the plains.
 17. Although the Dongaria Kondhs love to settle at a higher altitude, no settlement is made on the top or peak of a hill. Settlements are always made either on the hill slopes or at the foothills.
 18. The Dongaria Kondh clan is divided into twenty five clans called kudu.
 19. Belief in ancestral spirits is prevalent among the Dongaria Kondh. They regard Niyamraja as their first ancestor. He is said to have direct communication with sun god gama penu. The Dongaria call their ancestral spirits dumba but Niyamraja is never considered to be a dumba.
 20. Besides the traditional festivals, the Dongaria Kondh also show interest in Hindu gods and goddesses in events like Ganesh Puja, Saraswati Puja, Shivratri, Rath Yatra, Dashahara and others.
 21. Women play multiple roles as livelihood-earners, child bearers- as well as child rearers. The conception of a woman is greeted by everybody and a pregnant woman deserves dignity. A woman and a girl child are given a better status in comparison to the local Hindu society. A woman, right from conception till the last month before delivery, works in the field unless she feels uneasy. She is neither specially cared for nor neglected during pregnancy.
 22. It is believed that an embryo in the mother's womb does not have a life of its own.
 23. Barren women (banjani) are advised to organize a ritual named angusi dakina with the desire to have a child. But they are never looked down by the society for their childlessness.

24. The types of marriage observed in Dongaria society are arranged marriage, marriage by elopement, marriage by force and remarriage. To avoid paying a bride-price, the boys prefer marriage by elopement and marriage by force. In case of remarriage, no ritual is observed.
25. Divorce is not very common in tribal societies. However, there are cases of divorce among the Dongaria Kondh and there is a socially approved divorce system. Usually a divorce results from serious misunderstandings between husband and wife.
26. In each village the cremation ground is somewhere in the nearby forest.
27. There are restrictions regarding the type of firewood for the funeral pyre, depending upon the social status.
28. Amongst all kinds of wood, mango wood is believed to be an auspicious one. It is used for the cremation of all corpses, irrespective of any differentiation.
29. The ethnic groups closest to the Dongaria Kondh and in constant touch with their socio-economic life are the Domb. The Domb are a scheduled caste Hindu community. They have been co-settling with the Dongaria since long. It is held that in the beginning, the Domb were visiting Dongaria settlement as traders and in course of time, settled down in the Dongaria localities. They provide the Dongaria matchbox, dry fish, salt, tobacco, confectioneries in exchange of various agricultural, horticultural and forest produce.
30. Now, the Domb are the prosperous people (rich compared to the Dongaria Kondh) on the hills as a result of successful trading of the agricultural produce. Cash and barter system both are in operation now. Dongaria Kondh are said to be perpetually exploited by the Domb. While exploiting the Dongaria Kondh in transactions, it may also be said that Domb are helping the Dongaria by marketing their products from their door steps. The Domb usually pay little to fetch a large quantum of Dongaria produce. They have their strategies to do so. When meeting a crisis, a Dongaria gives his land on mortgage to the Domb or makes an agreement to dispose the agricultural produce on the receipt of a little advance money from the Domb. Normally the Dongaria market their products through the Domb with little or no profit for themselves. In this way, the Dongaria fetch only a little amount for their produce, which could be sold at a much higher price in the market. Due to a little literacy as well as greater exposure to the plain people, the Domb become aware of the rationale of official matters, legal matters and market transactions. They act as middle men or consultants for the Dongaria. It is through the Domb that the Dongaria have got some access to the world outside their community.
31. In the political organization of the Dongaria, Domb too play some key role, both positive and negative. As already discussed, each Dongaria village has the tradition of employing a barika (messenger) from the Domb community. The role and responsibilities of the barika are six fold - social and economic in nature.

32. There is another Domb family, who usually act as cowherds for the Dongaria. The cowherd is called kading garia. His job is to take care of the livestock and guard them while grazing in the forest.
33. The Dongaria refer to themselves as the kings (raja) and to the Domb as their subject (praja) and on this basis they claim their authority over the Domb and the area. When a Domb tries to make a bargain with the Dongaria, he addresses the Dongaria as the king and pretends that he is living on the Dongaria mercy. This attitude pleases the vanity of the Dongaria and the Domb gets his due benefit.
34. Down the hills of the Dongaria, we come across a local backward Hindu community known as Sandi. They are also traders. The Sundhis have a higher position than the Domb mainly because they are not considered untouchables by the Dongaria. Due to this, the Sundhis deal with cooked food items, cakes, snacks, etc., at the markets visited by the Dongaria Kondh. Through this business, the Sundhis became petty traders. Since they reside near the market-place they have good connections with big traders and local consumers (Domb, Sundhi and others). The Sundhi collect materials from the villages directly and sell them to big traders in the market.
35. Manual labor, knowledge, skill, and technology are the chief inputs of the Dongaria in their production process. All the able members of a family cooperate in the production process. Since they insist on dry land agricultural practices mainly, the input-output ration varies considerably depending upon the climate. All families in the village get the provision of utilizing the cooperative labor unit of the village for the quick and successful completion of cultivation work.
36. As fruit growers, the Dongarias should be rich, but most of their products are knocked off by the Domb on account of their cleverness as intermediaries. Once their economy was good and bountiful natural resources were at their disposition. Nowadays it has come seriously under pressure and its dominant feature is the indebtedness of tribal, mainly due to their integration into a market economy.
37. Dongaria Kondhs are primarily shifting cultivators. Agriculture and fruit-growing are the secondary occupation of the Dongaria Kondh which is developed especially after Independence. In order to check the destructive shifting cultivation practice in most of the cases, swiddens were converted to permanent horticultural land by the Dongaria Ko9ndh Development Agency (DKDA).
38. Wage-earnings are traditionally looked down upon by the Dongarias.
39. The traditional economy of the Dongaria Kondh is an undifferentiated one. Most of their economic activities revolve around their modes and methods of exploiting and utilizing natural resources. The Dongaria economic activities include food gathering, collecting edible plants from the forest, hunting, fishing, pastoralism, shifting cultivation, horticulture and plain land cultivation.
40. While various stages of development in the Dongaria economy involved technological changes, the social system did not change considerably.
41. In the distribution of plots and work on swidden farms, the socio-political and religious organization of the community as a whole was a decisive factor as it made

agricultural tasks in cooperative labor groups possible. The communal aspect has lost its importance in the practice of horticulture, plain land agriculture or in other occupations, mainly owing to the fact that ritual aspects related to cultivation are of minor importance in plain land agriculture and horticulture is exclusively based on family labor.

42. Although the forest is in a severe state of degradation, the collection of forest products and hunting continue to be subsidiary occupations for the Dongaria as a whole. Thus, shifting cultivation is given the highest priority, with horticulture coming second and plain land agriculture third; apart from this, several tribals complement their earnings by taking up small businesses or service, or seek wage-paid jobs or other off-farm activities.
43. Every Dongaria family possesses cattle, pigs, goat and poultry. The animals are not, however, reared for trade purposes, but mainly for religious reasons. They are sacrificed to the gods and goddesses who are believed to influence their economic life in many ways.
44. Several dairy farming principles are rooted on religious purposes. In this sense, livestock management is not considered to be a means of earning a livelihood. In times of need, however, animals are sold for cash.
45. The collection of non-timber forest produce with the intention of selling it influences the Dongaria economic life to a small extent. The severe degradation of forests, arising from shifting cultivation and horticulture has led to a decline in the yield of non-timber forest produce. Broom grass is the only forest produce which the Dongaria collect on late winter or early summer days, and is a means of improving their household budgets.
46. Hunting is now a rare occupation among the Dongaria, although group hunting is still a traditional feature of their socio-cultural life. Fishing is mainly a form of recreation, and the focus is on leisure rather than yield. As the Dongaria habitat rarely includes ponds, they go for fishing in hill streams.
47. Nowadays Wild life has become scarce and finding game is a matter of luck.
48. One of the positive aspects of the Dongaria Kondh hunting is that they never set the forest on fire. Even during summer hunting they never resort to a forest fire in order to startle game into leaving the forest.
49. The staple food of Dongaria Kondh is rage. Ragi is a major product of swidden agriculture and cultivated by them on a large scale. Gradually Dongaria are motivated to plant rice. Besides their staple food the Dongaria depend upon a variety of edible seasonal products like sweet potato, little millet, vegetables, in winter, boiled yam, ragi, leafy vegetables, banana, mango, jackfruit in summer, and pineapple, millet gruel, rice and maize in the rainy season.
50. With boiled rice or ragi gruel they usually take dry fish, greens, vegetable curries or non-vegetarian food as available. Dal (lentils) is a most preferred and cherished dish, but people consider it as a food item of the rich. During the winter, the Dongaria take boiled red gram, a local pulses variety.

51. The most affluent period for the Dongaria is the harvest time during winter and the lean period is the rainy season, when no foodstuffs are available either from the field or from the forests except some greens or mushrooms.
52. The Dongaria Kondhs are very very fond of alcoholic drinks and narcotics, Fermented jackfruit juice, fermented pineapple juice, sago palm toddy, distilled mahua liquor and fermented date palm juice along with powdered tobacco chewing and smoking.
53. The gathering of food from the forest and local surroundings is a subsidiary occupation of every Dongaria family. In lean periods, however, particularly from early May until the late rainy season, when food supplies dwindle, food gathering from the forest gains special importance. On the whole, however, wild but edible materials are collected throughout the year.
54. Families which are economically well-off rarely collect edible forest plants whereas for the marginalized families, this is a common activity. In poor families, women are joined by the men in gathering food.
55. The forest constitutes the main working environment of the Dongaria, who spend most of their time there and in the swiddens. The forest also plays a dominant role in terms of culture, domestic well-being and spirituality, as they believe it is the home of many of their deities.
56. Cultural and traditional values are imparted in the dormitories, the dhangdabasa for boys and dhangdibasa for girls. At some point between the age of 10 and 12, boys leave their parents' home to go to the dhangdabasa where they will continue to spend the night until they marry.
57. The dhangdibasa plays an even more important role in the Dongaria Kondh life. The dhangdibasa is governed by a set of rules laid down and enforced by its two senior most members (kajari).
58. Market day is the highlight of the each week for all Dongaria, both girls and boys enjoy their trip there. Direct contact with the market made the Dongaria aware of their previous exploitation by the Domb community.
59. By visiting places outside their usual environment and coming in contact with other people, the Dongaria Kondh are confronted with new ideas and non-tribal cultural values which have brought them closer to the modern world. This has given the Dongaria an insight into a lifestyle which they find very attractive.
60. The Dongaria also demonstrate a growing awareness of politics, fundamental rights and, voting in and contesting elections.
61. Female literacy is unknown in Dongaria society; and among males it is scarcely better.
62. A woman can never occupy a senior position in the Dongaria Kondhs religious hierarchy.
63. By far the largest proportion of specialized knowledge in the community (relating to areas such as rituals, medicine, agriculture, hunting, tool-making and material technology, house-building, landscape planning for settlement, construction and watershed management) is firmly in male hands.

64. It is believed that supernatural forces led to the hills and mountains being covered with plants, trees, creepers and grasses, and that the huge rocks on which the hills rested rose to protect the Dongaria. At that time, the hills and forests had no names, and it was Niyamraja, the guardian deity of the Dongaria, who is said to have named them.
65. The deification of streams and rivers belonging to the Dongaria habitat indicates the high value given to water by the Dongarias. While a stream may be regarded as a component part of a hill, both are considered separate entities, distinguishable according to name. Water represents the goddess eyu penu (water deity), who, however, is also known by other names, mainly because several streams may originate from the same hill. The most common name for eyu penu is gangi penu.
66. Eyu penu is highly covered owing to the fact that water is a crucial element to life. It sustains life, but can cause disease through water-borne diseases.
67. The Dongaria language does not have a script.
68. To the Dongaria, the contour of the sky is semi-circular, while the earth and space beneath it (narka) exist in linear conjunction.
69. Niyamraja penu is also known as maharaja penu. As mentioned earlier, the Dongaria regard Niyamraja as their first king and consider him to be their eternal spiritual sovereign. The entire territory inhabited by the Dongaria Kondh is thought to be the kingdom belonging to Niyamraja.
70. A prime concern is to delineate the ways in which a hill is perceived as a living entity. The Dongaria attach social significance to hills. Entire hills are believed to be possessed by a particular spirit who is respected as the authority of the hill from whom the people seek permission before settling there temporarily or permanently. It is only after the appeasement of the hill god that the people begin to convert patches of land into settlements.
71. The peak of the hill where lada penu is said to have his abode is called lada and is considered to be a very powerful spot. A general term describing this area, penu basa, refers to the abode of the deities there. Although there are numerous tree species in the penu basa, they are not felled excepting when wood is needed for festivals or house construction.
72. The area below the hill top is used for swidden cultivation and is named danger in colloquial Oriya or neta (when under shifting cultivation) by the Dongaria.
73. The forests are closely related to the routine work and commercial interests of the people. The Dongaria Kondh classification system derives from their dependence on forest produce and the conversion of forest lands into agricultural plots.
74. Hills with a plateau are known as putra or dasak. The Dongaria understand them to be a result of tamdi ajane or barren soil. Few large trees grow on some some plateaus, but not even grass grows on those with hard soil. Other plateaus are completely covered by grass and devoid of large trees. Perennial streams may also flow down to the the plains from a plateau. To the Dongaria, a plateau represents the playground of gods and goddesses.

75. The Kaman forests that still exist on the hill-tops can be credited to the people's perception of such areas as being the abode of hill gods.
76. The category of plants and trees which the Dongaria are familiar with are relatively limited in comparison to the wealth of species as a whole. They are mainly knowledgeable about plants with high utilitarian value, which is either determined according to their need of wood for household, religious and medicinal use, or based on their consumption of edible plants.
77. Sal dust resin (hajda) is used as incense in the majority of ceremonies, rituals and festivals. Sal leaves are extensively used for making cups and plates for the Dongaria household. The leaves are also used to serve food to the deities, but today, however, due to a lack of sal trees, they have been replaced by siali and mahua leaves. Sal wood is highly valued as construction material and door frames, house poles and beams are made from this wood.
78. Dongaria men are good carpenters, being very skilled in the use of chisels, carving and engraving images in wood.
79. In shifting cultivation, a plot is usually cultivated for two to three years and then abandoned or left fallow to regain fertility. This is a continuous process. After a fallow period of 5 to 6 years the cultivator again returns to the same plot.
80. In spite of several advantages, the practice of shifting cultivation is very hard and demands adequate labor. However, it is an ecological adaptation due to adequate plain lands in the hilly areas. Further the yield always remains optimum provided the fallow period is given due attention. In the beginning when land-to-man ratio was quite favorable due to scanty population, much of valuable forests were being saved from the burning from shifting cultivation. But as the man-to-land ratio became unfavorable due to population rise, people went for wanton destruction of the forests to create more swidden for cultivation. Facing this situation, the Dongaria Kondhs followed two strategies. They tried to find out suitable alternatives which resulted in a technological shift from widening to horticulture and plain land agriculture. The second strategy followed due to lack of enough cultivable lands and due to the larger demand for crops, was to cultivate the lands without allowing the required fallow period. This, however, resulted in a drastic fall of the yield.
81. In shifting agriculture, fields per acre and per man-hour normally compare with those of permanent field agriculture within regions in which comparison is properly made but yields are often below those of mechanically powered, permanent-field agriculture.
82. The hill lands or neta and the bada (horticultural orchards) are divided among Dongaria families traditionally by the clan heads. The inheritance of such lands is maintained in the patrilineal order.
83. Patches of land under the father are equally distributed among the sons after his death. In some cases daughter also get share from their father's land. If a man has only a daughter(s) or if a daughter is divorced or widowed then she may get share from her father's land property.

84. There are different patterns of land distribution. There can be village-wise distribution, clan-wise distribution and punja-(title group) wise distribution of lands. Villages are found with exclusively one clan or with one dominant clan. In a village-wise distribution, there is always a boundary between two villages. Keeping the boundary in view, hills are distributed among respective village communities. People of a single clan or of different clans residing in a village can occupy a hill land, convert it into swidden lands and impose their right on such lands. Till about four decades ago, different families in a village converted hill lands to swiddens without any restriction. They utilized their family labor for this conversion. According to the number of able members in the family, different families acquired required areas of land.
85. To emphasize legitimate claim over the land in the 1950s, the village communities looked for a proper and rational distribution of land. The entire land possessed by the whole community in a village was distributed both clan-wise and punja-wise. As in most of the villages there are more than one clan, the village land was distributed among the different clan members keeping in view the number of families in each clan. Each clan has four punjas viz., mandal, pujari, jani and bisimajhi. The land possessed by a clan in the village is further sub-divided among these four punjas under the clan. Among the four types of punja, pujari and jani is the priest groups, bisimajhi and the mandal are the politically active groups. Whereas the former are two are sacred leaders, the latter two are secular leaders of the village. In the past, when the population size was very small, one family of each punja could possess maximum land in one hill or even the entire hill. But when a family occupied an entire hill, it was not convenient for other families of the same punja, who settled there afterwards, to make swiddens in the same hill. Therefore, they had to make swiddens on distant hills. This condition provoked the village political chiefs (clan heads and mandal) to make a rational distribution of a hill among different families belonging to different clans and punjas. Thus, hill lands were first distributed among the clans, then among punjas and then among families. However, some patches of land were kept as buffer land to be distributed to new families who may come from outside, irrespective of their clan membership.
86. Each village in the Dongaria habitat is located at the foot of a hill and named after an important hill.
87. Although changes are evident in the Dongaria way of life, the process is a rather slow one. Thus, the traditional cultural values retain their importance, despite the increasing economic aspirations of the younger generation.
88. The changing world of the Dongaria has received impulses from the Domb, who also reside in the Dongaria habitat. The Dombs also function as agents of change. And as agents, they are also known to exploit the Dongaria.
89. The Dongaria in Lanjigada area do not take adequate interest in horticulture as they have alternative means of earning livelihood. They are more modernized in comparison

- to Dongaria in other regions, and they don't mind wage earning and show interest in business and government service.
90. The perception that forests are sacred has led to Dongaria principles that promote the conservation of forests in their region.
 91. Non-timber forest produce is the main merchandise that the Dongaria Kondh deal with. Earlier, when the market demand for non-timber forest produce was low, the Dongaria were disinclined towards collecting such items.
 92. The maintenance of natural forests was traditionally held to be a virtue. Social and economic constraints, however, led to the neglect and destruction of forests, and several tribals claim that it is not necessary to take steps to maintain the density of the forest, as they now believe it could regenerate itself.
 93. The Dongaria believe that the groundwater can be kept at an optimum level if the natural forests on hill-tops are left untouched. Hill tops devoid of such vegetation would cause the spring on such sites to dry up.
 94. The Dongaria give the impression of being more conscious of the need to preserve various types of forest than a single plant species. They leave patches of virgin forests on the hill-tops, while at the same time meeting the basic subsistence requirements of each household, and maintaining the ground water level thereby arresting soil erosion. On the other hand, they do not pay sufficient attention to the individual species which constitute such a hill-top forest, but focus rather on the density of growth. Evidently, density and not the extinction of a species are taken as the measure of a forest's vitality. Also, as long as an alternative can be found in the hill-top forests, they are rather indifferent to the disappearance of a particular forest species.
 95. Although the hill gods are regarded as protector deities, some are abandoned by the people of one region if the inhabitants of another region worship them.
 96. Initially the entire hill may be considered as an unspoiled natural resource. Depending on the people's need and amount of labor available, this intact resource becomes a converted natural resource. Prior to conversion, the forest or hill is managed on a community basis. Once converted into cultivable lands, individual claims can be made regarding such land, which then become family property.
 97. Other components of a natural forest, such as water resources, primary forest vegetation and wildlife, remain entirely community resources, though they can be used for individual purposes. As a rule, trees on individually-owned lands remain personal property, but some exceptions are made. For instance, sago palm and other fruit bearing trees in the forest are community property.
 98. The traditional customs and working practices in the forest appear largely destructive and have wide implications for the conservation of the forest and its vegetation. It is apparent that the need to conserve forests has led to economic upheaval and a change in the Dongaria society and lifestyles.
 99. The Dongaria Kondh traditionally maintains forests for religious regions. Their custom of keeping sacred groves in the area has been drastically affected by the

impact of modernization, and socio-cultural and economic factors. In short, as some outsiders started exploiting the forest and the others found that the forest deity did not retaliate, they were encouraged to do likewise. The outsiders had a substantial commercial interest in the forests, whereas the local non-tribals wanted a moderate share, and the Dongarias still less. The same prevailed in the graveyard forests, where collection of any type of material is strictly prohibited.

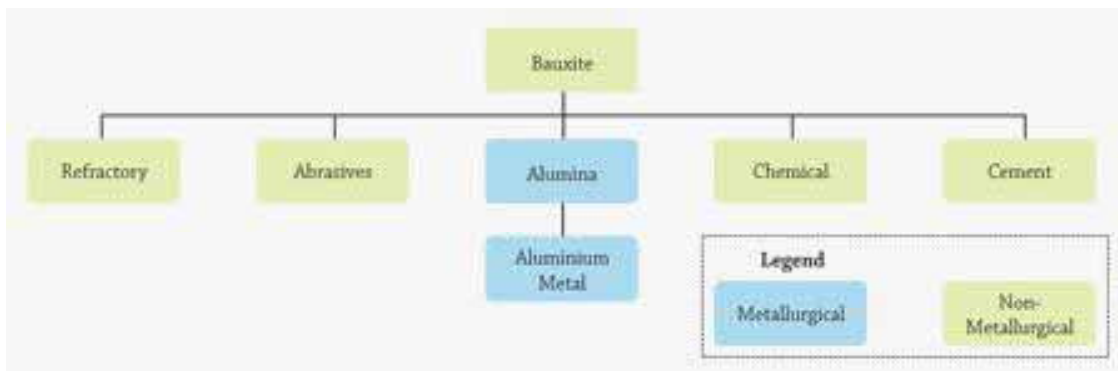
100. Although the tribal tradition has partly been affected by outside customs. Spiritual conservation practices are adhered to by the community as a whole, i.e. all members are motivated by the same ideas and beliefs, and, therefore, exhibit a collective spiritual desire to maintain the natural resources. Consequently the myths and legends play a significant role in the conservation of flora and fauna. A traditional legend tells how Niyamraja restricted hunting expeditions, tree-felling and other exploitations of his territory. This command applied to all lineages and clans in the Dongaria society.
101. Thus, religious principles, taboos and restrictions support conservation, and create an awareness of biodiversity that reinforces customary conservation practices.
102. In the Dongaria Kondh habitat, the greater part of collection involves MFP/NTFP items such as tamarind, siali, leaves, broom sticks, mahua flowers and seeds, and sal seeds. The Dongarias do not, however, have the right to sell gross quantities of tamarind and mahua at the market, as this is subject to trade limitations. With regard to the sale of tamarind, for instance, certain licensed agencies must procure the item from the tribals. Private agencies may not collect such items if they do not have a license. The licensed procurers pay even less than the fixed price.
103. The Dongaria Kondh is averse to distilling mahua flowers for liquor and is also reluctant to store them in their houses.
104. The major focus of joint forest management (JFM) is to merge the local scientific forest management scheme with that of the local people's management system. The JFM assures the local population 50 per cent of the net felling yield, and, in addition, the products of intermediate processing, such as thinning and pruning are also assigned to them. The involvement of NGOs has reinforced the JFM programmed and has consolidated its reputation as a widely-approved management policy.
105. Tribal forest economy is a subsistent sector where people organize their communities in order to survive in times of increasing scarcity and a growing number of obstacles and adverse effects that threaten their independence and cultural integrity.
106. Only by increasing the productivity of man made forests and agro forestry can India's ever increasing demand for industrial timber, pulp and ply wood be satisfied and natural forest wealth be safeguarded. Thus the segregation of natural forests as a distinct habitat of indigenous human, plant and animal communities becomes more an issue of social politics than of traditional forest policy. Timber production and the supply of non timber forest products will have to be separated in the long run from areas which have a priority for biodiversity conservation and the cultural survival of forest dwelling communities in India's natural forests. Culture in these

areas is best preserved by safeguarding their natural surroundings and their knowledge of its uses.

107. Although it is often claimed by forest officials and administrators that local forest dwelling communities contribute substantially to the degradation of their forests, it is a fact that ultimately only they care for the habitability of their environment.



Some Issues/Details Related to Bauxite and Aluminium



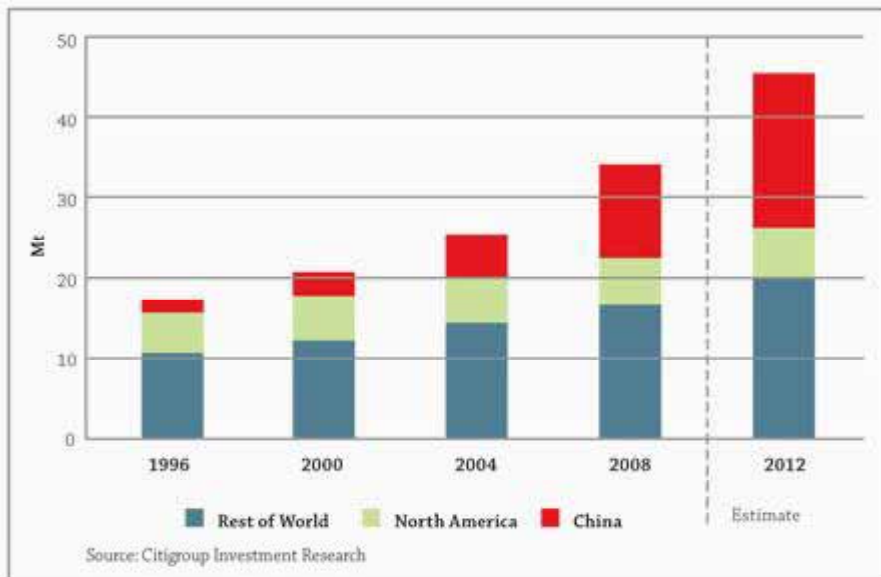
Growth in aluminium demand

China's remarkable growth of approximately 9% real GDP per annum over the past decade, has fuelled an unprecedented demand for Australian commodities.

China dominates the global aluminium industry accounting for one third of world production and world consumption. Total primary aluminium output by China was 13.1 million tonnes in 2008. Dependence on bauxite imports will remain high. China's strong domestic growth means increased consumption of aluminium which rose by 8% over 2008 and has forecasted growth of 4% for 2009. Significant growth in aluminium consumption is also taking place in India and other developing countries.

From 2008 to 2018, it is expected that the aluminium industry of China will grow by 12.5% as opposed to 7% growth for the rest of the world over the same time period.

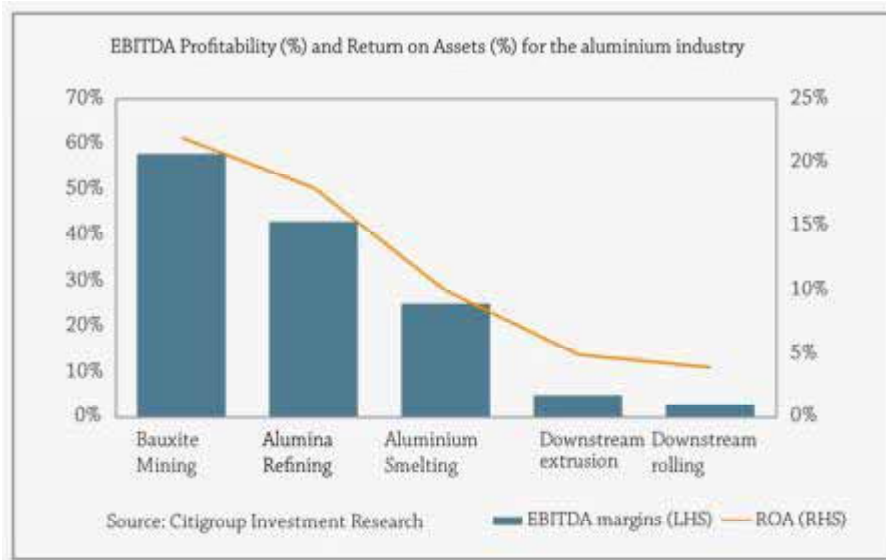
Due to inadequate infrastructure as well as increasing economic and political instability and conflicts with the tragic loss of life in some bauxite producing countries (such as recently in the Republic of Guinea), customers are likely to turn to a stable country like Australia as a reliable source of supply.



Global alumina

Currently, alumina production worldwide is operating at close to full utilisation capacity, and therefore significant increases in capacity either by expanding the capacity of existing refineries (brownfields) or by building new refineries (greenfields) are expected.

Over the next ten to fifteen years, industry forecasts predict that there will be up to fifteen million tonnes of new alumina refining capacity made available through brownfield expansions. Such brownfield expansions will not be sufficient to meet world demand. Therefore, new greenfield projects are required to meet the growing world demand. Due to expansions of capacity of existing refineries and development of new refineries, opportunities to supply bauxite will increase significantly. Premium quality beneficiated bauxite products are preferred.

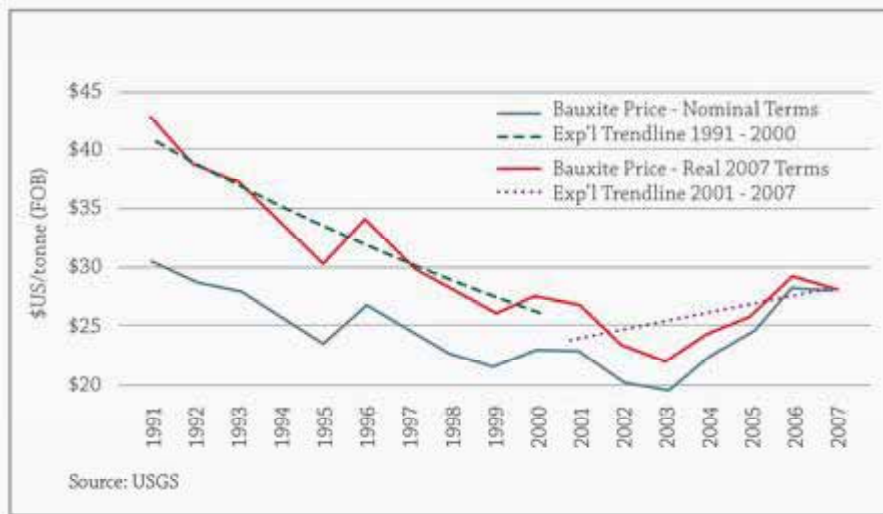


Return on assets

ABx is investing in bauxite exploration so as to identify a bauxite mining opportunity as its first priority. The following graph demonstrates the returns on assets for the various stages of the industry. Good returns on funds invested are achievable in mining provided that the deposit is in a favourable / low cost location. Even better returns are achievable in exploration, especially for discovery of premium quality bauxites.

Rising prices for metallurgical bauxite

Most metallurgical-grade bauxite and alumina are purchased under long-term contracts. Contract terms for these commodities normally are not made public.



The above graph shows (along with most commodities) a long term historical price decline of average quality bauxite in real terms and a recent reversal of this trend. It is also significant in that up until the end of 2005, the United States was the dominant driver of demand for internationally traded bauxite. Prior to 2000, the supply of bauxite from Jamaica to USA, and from the Republic of Guinea to USA was the main determinant of the prices reported by the USGS in the above graph. Most of these sales were transfer prices between mines and refineries owned by the same large aluminium companies. In 2003, China's free-traded bauxite became a large contributor to the price figures in the graph. Prices for bauxite destined for the United States in recent times have ranged on a weighted average basis between US\$25 to US\$40 per tonne FOB, averaging around US\$35 per tonne.

A similar price trend was also observed in iron ore, except that the rise started earlier and was sharper. When a country goes through industrial development, steel consumption rises first and a rise in consumption of aluminium follows after a few years.

List of persons met during the course of study

Niyamgiri study: Offices /places visited and officials met

Sr. no.	Office / place visited	Official(s) / person(s) met
1.	Census office, Kolkata and B'war	Census CD sales persons.
2.	Vedanta Jharsuguda smelter plant	Contracted security officers and guards, Vedanta Security Officer, GM, Administration – (intercom talk)
3.	Divisional Forest Office, Rayagada	DFO, ACF and two other officials
4.	Regional Center for Development Cooperation, Bhubaneswar	Local representative at Rayagada
5.	DFO, Rayagada	Visiting IIFM Bhopal officer, – NTFP related
6.	DFO, Rayagada	Visiting IIS, Bangalore Scientist – Elephant movement related
7.	ITDA, Rayagada	One official
8.	DRDA, Rayagada	Two officials
9.	DAO, Rayagada	DAO and one official
10.	LAO, Rayagada	LAO and one official
11.	Kalyan Singhpur market	Foodgrain shopkeeper
12.	Vedanta plant at Lanjigarh	One official
13.	Bishwanathpur, Kalahandi	Forest Range Officer

14.	DFO South, Bhawanipatna	Divisional Forest Officer and Head Babu
15.	DFO, Kendu Leaf, Bhawanipatna	DFO
16.	Kesinga Road railway station	Station In Charge
17.	Tel river pumping station	No person present, data collected from a distance
18.	Bhawanipatna	DAO and two other officials
19.	Horticulture Department, Bhawanipatna	DD and two officers
20.	Ambadolla railway station	Local residents
21.	Enroute – Bhawanipatna to Kesinga	Three alumina bulk container drivers
22.	OFDC, Jeypore	DM
23.	DFO, Jeypore	DFO
24.	DFO, Koraput	ACF and Head Babu
25.	DRDA, Koraput	Officer - Second in Command and two officials
26.	ITDA, Koraput	Officer In Charge
27.	Hindalco, Patangi, Koraput mines	Two villagers
28.	Hindalco office, Semiliguda, Koraput	Security Guard
29.	NALCO, Damanjodi and Kakriguma mines	Enroute, two locals only
30.	Aditya Alumina, Lakhmipur, Rayagada	No one
31.	Utkal Aluminium, Tekri	Police Party
32.	DKDA, Chatikona	Peon

33.	Weekly market, Chatikona	Only observed local Dongria Kondh shoppers. Foreign guests of Alternative Tours
34.	Jhigdi village, Rayagada	Three local Dhokra work artists
35.	Bishwanathpur, Kalahandi	CHARMS NGO, no one present
36.	DFO Working Plans office, North & South Bhawanipatna	Head Babu
37.	Lanjigarh Project Office Development Foundation (LPADF), Bhawanipatna	Two officials
38.	District Planning Office	District Planning Officer
39.	Bhawanipatna, Kalahandi	Shri R. Santana Gopalan, Collector
40.	Stone quarry near Titlagarh town	One stone crusher owner
41.	Revenue Land Department, Rayagada	One official
42.	Bhubaneswar	ORSAC – GIS Department Officer
43.	Bhubaneswar	Survey of India map sales Head and three officials
44.	Bhubaneswar	Directorates of Eco & Stats / DD Geology and DD Mining
45.	Bhubaneswar	Env. Engineer and Sr. Env. Engineer, Orissa State Pollution Control Board
46.	Bhubaneswar	NALCO Chief Managers / GMs – CSR, Admn. & Environment Divisions

47.	Bhubaneswar	East Coast Railway - GM in Freight Traffic Department
48.	Rayagada	Asst. Engineer, PWD R & B Department
49.	Bhawanipatna	NIC In Charge, DM, OFDC, Kalahandi Truck Owners Association President and six members.
50.	Bhubaneswar	MD, OFDC, Director, Academy of Tribal Languages and Culture, GM Finance, Orissa Mining Corporation Limited
51.	Rayagada	Chief Station Manager, Rayagada railway station
52.	Bhubaneswar	CCF, PCCF office
53.	Bishwanathpur, Kalahandi	Shopkeepers, weekly market

