

COAL MINING AND ENVIRONMENTAL CONCERNS



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CHAPTER ONE

HISTORY OF COAL MINING,

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STAGES OF COAL FORMATION

Coal takes millions of years to develop, and is derived from ancient plant matter that has been subjected to intense heat and pressure that affected physical and chemical alterations. The process through which coal forms from such ancient plants is known as coalification. In general, coal forms from the remains of plants which died in prehistoric swamps and wetlands. Organic plant matter at various stages of decay form peat, which, under certain pressure, time and heat conditions experiences slow rates of bacterial decay and eventually goes on to form coal. As peat is buried by sediment and becomes compressed, it slowly releases water and other elements contained within it, resulting in an increasingly compact and carbon rich substance. A swampy setting in which plant growth is lush and where there is water to cover fallen trees, dead leaves, and other debris, is especially favourable to the initial stages of coal formation [Montgomery,2000;309]. The process requires anaerobic

conditions, in which oxygen is absent or nearly so, since reaction with oxygen destroys the organic matter. The first combustible product formed under suitable condition is peat. Peat can form at the earth's surface, and there are places on earth where peat can be seen forming today. Further burial with more heat, pressure, and time, gradually dehydrates the organic matter and transforms the spongy peat into soft brown coal[lignite] and then to harder coal[bituminous and anthracite]. As the coal become harder, their carbon content increases, and so does the amount of heat released by burning a given weight of coal[Montgomery, 2000]

As noted earlier, the natural process converting plant matter to peat may go through different stages, first forming lignite, then sub bituminous coal, bituminous coal and eventually anthracite coal.

Understanding the different types of coal involves first developing a basic understanding of how coal forms within the earth. The types of coal are differentiated by specific properties which result from having undergone varying degrees of heat and pressure over different lengths of time during formation.

When we mine coal from the earth, it may be at any of the above mentioned stages of formation, which contain increasing levels of carbon. Below we examine some of the characteristics of each rank:

-Lignite: Lignite coal is the lowest ranked coal for its heat energy producing capability and carbon content. A soft, brownish coal, lignite contains the highest levels of moisture of the coal types and is known for its crumbly texture. Lignite deposits are the youngest of the coal types and have

undergone the lowest intensity of heat and pressure. The coal deposits in Imo and Delta States are mainly lignite.

-Sub Bituminous: With higher carbon content[as in Enugu and Kogi States in Nigeria] and thus a higher heating value than lignite, sub bituminous and bituminous coal collectively make up the majority of coal produced in the United States. Sub bituminous coal contains less water and is therefore harder than lignite, facilitating easier transportation and storage. The relatively low sulfur content in sub bituminous coal makes it an attractive option for power plants.

-Bituminous: Estimated to be between 100 and 300 million years old, bituminous coal makes up the majority of coal mined in the U.S. Bituminous coal is heavily utilized for energy in power plants and for the production of steel.

-Anthracite: Having the highest concentration of carbon, anthracite is also the hardest coal. Anthracite coal is known to be the cleanest burning coal, but is one of the rarest, being found mainly in limited reserves in Pennsylvania.

The History of Coal Mining

Large-scale coal mining developed during the Industrial Revolution, and coal provided the main source of primary energy for industry and transportation in the West from the 18th century to the 1950s. Coal remains an important energy source, due to its low cost and abundance when compared to other fuels, particularly for electricity generation{Freese, 2003). However, coal is also mined today on a large scale by

open pit methods wherever the coal strata strike the surface and is relatively shallow.

Britain developed the main techniques of underground coal mining from the late 18th century onward with further progress being driven by 19th century and early 20th century progress{ Freese, 2003).

However oil and its associated fuels began to be used as alternative from this time onward. By the late 20th century coal was for the most part replaced in domestic as well as industrial and transportation usage by oil, natural gas or electricity produced from oil, gas, nuclear or renewable energy sources.

Since 1890, coal mining has also been a political and social issue. Coal miners' labour and trade unions became powerful in many countries in the 20th century, and often the miners were leaders of the Left or Socialist movements as in Britain, Germany, Poland, Japan, Canada and the U.S.{ Geoff Eley, 2002); Frederic Meyers, (1961).; Kazuo & Gordon (1997); Hajo Holborn, (1959); David Frank, and. McLachlan, (1999) and David Montgomery, (1991) . Since 1970, environmental issues have been increasingly important, including the health of miners, destruction of the landscape from strip mines and mountaintop removal, air pollution, and coal combustion's contribution to global warming.

Prehistory

In Roman Britain, with the exception of two modern fields, "the Romans were exploiting coals in all the major coalfields in England and Wales by the end of the second century AD". Roman historians describe coal as a heating source in Britannia{ Freese, 2003).

The earliest use of coal in the Americas was by the Aztecs. They used coal not only for heat but as ornaments as well. Coal deposits were discovered by colonialists in Eastern North America in the 18th century{ Freese, 2003).

Early coal extraction was small-scale, the coal lying either on the surface, or very close to it. Typical methods for extraction included drift mining and bell pits. In Britain, some of the early drift mines (in the Forest of Dean) date from the medieval period. However, the Romans exploited coal on a large scale as shown by the stores of coal at many forts along Hadrian's Wall, and the remains of smelting industry at forts such as Longovicium nearby{ Smith, 1997).

As well as drift mines, small scale shaft mining was used. This took the form of a bell pit, the extraction working outward from a central shaft, or a technique called room and pillar in which 'rooms' of coal were extracted with pillars left to support the roofs. Both of these techniques however left considerable amount of usable coal behind.

The Industrial Revolution

The Industrial Revolution, which began in Britain in the 1700s, and later spread to Europe, North America, and Japan, was based on the availability of coal to power steam engines. International trade expanded exponentially when coal-fed steam engines were built for the railways and steamships in the 1810-1840 Victorian era. Coal was cheaper and much more efficient than wood burning in most steam engines. As central and Northern England contains an abundance of coal, many mines were situated in these areas as well as the South Wales coalfield and Scotland. The small-scale techniques were unsuited to the increasing demand, with extraction moving away from surface extraction to deep shaft mining as the Industrial Revolution progressed{ Flinn and Stoker, 1984).

Beginning of the 20th century

Britain

Pre -1900

Although some deep mining took place as early as the late Tudor period (in the North East, and along the Firth or Forth coast.{ Archives Hub: Ppers on Mining in Scotland 18th and 19th Centuries & BBC: Culross}. Deep shaft mining in the UK began to develop extensively in the late 18th century, with rapid expansion throughout the 19th century and early 20th century when the industry peaked. The location of the coalfields helped to make the prosperity of Lancashire, Yorkshire, and of South Wales. The Yorkshire pits which supplied Sheffield were only about 91.44m deep. Northumberland and Durham were the leading coal producers

and they were the sites of the first deep pits. In much of Britain coal was worked from drift mines, or scraped off when it outcropped on the surface. Small groups of part-time miners used shovels and primitive equipment {<http://www.pdavis.nl/ErskineMay.Html>. & <http://www.scotishmining.co.uk/260.html>}. Before 1800 a great deal of coal was left in places as extraction was still primitive. As a result in the deep Tyneside pits (91.44m to 304.80m . deep) only about 40 percent of the coal could be extracted. The use of wooden pit props to support the roof was an innovation first introduced about 1800. The critical factor was circulation of air and control of dangerous explosive gases. At first fires were burned to create air currents and circulate air, but replaced by fans driven by steam engines. Protection for miners came with the invention of the Davy lamp and Geordie lamp, where any firedamp (or methane) burnt harmlessly within the lamp. It was achieved by restricting the ingress of air with either metal gauze or fine tubes, but the illumination from such lamps was very poor. Great efforts were made to develop better safe lamps, such as the Mueseler lamp produced in the Belgian pits near Liège.

Coal was so abundant in Britain that the supply could be stepped up to meet the rapidly rising demand. About 1770-1780, the annual output of coal was some 6¼ million tons (or about the output of a week and a half in the 20th century). After 1790 output soared, reaching 16 million tons by 1815 at the height of the Napoleonic War. The miners, less menaced by imported labour or machines than were the cotton mill workers, had begun to form trade unions and fight their grim

battle for wages against the coal owners and royalty-lessees{ Steven Watson,1960).

Post 1900

Coal mining passed into Government control in 1947, although coal had been a political issue since the early part of the 20th century. The need to maintain coal supplies (a primary energy source) had figured in both world wars{Fine, 1990).

As well as energy supply, coal in the UK became a very political issue, due to conditions under which colliers worked and the way they were treated by colliery owners. Much of the 'old Left' of British politics can trace its origins to coal-mining areas, with the main labour union being the Miners' Federation of Great Britain, founded in 1888. The MFGB claimed 600,000 members in 1908.

The Miners' Federation of Great Britain was established in Newport, Monmouthshire in 1888. As its title suggests, it was not a unified, centralised trade union. It represented and coordinated the affairs of the various existing local and regional miners' unions, but those associations remained largely autonomous. The South Wales Miners' Federation was not founded until 1898, joining the federation in 1899, while the Northumberland Miners' Federation joined only in 1907, followed by the Durham Miners' Federation in 1908. As noted earlier its membership in the latter year was 600,000. The MFGB was involved in many serious trade disputes, including the National Miners' Strike of 1912 and the General

Strike in 1926. (The MFGB later became the more centralised National Union of Mineworkers).

Although other factors were involved, one cause of the UK General Strike of 1926 was concerns colliers had over very dangerous working conditions, reduced pay and longer shifts.

Technological development throughout the 19th century and 20th century helped both to improve the safety of colliers and the productive capacity of collieries they worked. In the late 20th century, improved integration of coal extraction with bulk industries such as electrical generation helped coal maintain its position despite the emergence of alternative energies supplies such as oil, natural gas and, from the late 1950s, nuclear power used for electricity. More recently coal has faced competition from renewable energy sources and bio-fuels.

Post World War II, the coal industry in Britain was Nationalised, and remained in public ownership until the 1980s and the decline of the industry after the UK miners' strike (1984-1985).

The 1980s and 1990s saw much change in the UK coal industry, with the industry contracting, in some areas quite drastically. Many pits were considered uneconomic (Thatcher, quoted in Fine,1990.) to work at then current wage rates compared to cheap North Sea oil and gas, and in comparison to subsidy levels in Europe. The Miners' Strike of 1984 failed to stop the Conservative government's plans under Margaret Thatcher to shrink the industry. The National

Coal Board (by then British Coal), was privatised by selling off a large number of pits to private concerns through the mid 1990s, and the mining industry disappeared almost completely{ Fine,1990).

In January 2008, Wales's last deep pit mine, Tower Colliery in Hirwaun, Rhondda Cynon Taff closed with the loss of 120 jobs. The coal was exhausted. {BBC , 2008).

However, coal is still mined extensively at a number of deep pits in the Midlands and the north, and is extracted at several very large opencast pits in South Wales and elsewhere. There are proposals to re-open several deep pits with Russian capital, owing to the soaring price of the commodity.

United States

Anthracite (or "hard" coal), clean and smokeless, became the preferred fuel in cities, replacing wood by about 1850. Bituminous (or "soft coal") mining came later. In the mid-century Pittsburgh was the principal market. After 1850 soft coal, which is cheaper but dirtier, came into demand for railway locomotives and stationary steam engines, and was used to make coke for steel after 1870{ Binder, 1974).

Total coal output soared until 1918; before 1890, it doubled every ten years, going from 8.4 million short tons in 1850 to 40 million in 1870, 270 million in 1900, and peaking at 680 million short tons in 1918. New soft coal fields opened in Ohio, Indiana and Illinois, as well as West Virginia, Kentucky and Alabama. The Great Depression of the 1930s

lowered the demand to 360 million short tons in 1932(Netschert and. Schurr, 1975).

Under John L. Lewis, the UMW became the dominant force in the coal fields in the 1930s and 1940s, producing high wages and benefits(Dubofsky and Tine, 1977). In 1914 at the peak there were 180,000 anthracite miners; by 1970 only 6,000 remained. At the same time steam engines were phased out in railways and factories, and bituminous was used primarily for the generation of electricity. Employment in bituminous peaked at 705,000 men in 1923, falling to 140,000 by 1970 and 70,000 in 2003. UMW membership among active miners fell from 160,000 in 1980 to only 16,000 in 2005, as coal mining became more mechanized and non-union miners predominated in the new coal fields(U.S Census Bureau, 2002 and IBIS World, 2009).

Australia

In 1984 Australia surpassed the US as the world's largest coal exporter. One-third of Australia's coal exports were shipped from the Hunter River region of New South Wales, where coal mining and transport had begun nearly two centuries earlier. Coal River was the first name given by British settlers to the Hunter River after coal was found there in 1795. In 1804 the Sydney-based administration established a permanent convict settlement near the mouth of the Hunter River to mine and load the coal, predetermining the town's future as a coal port by naming it Newcastle. Today, Newcastle, NSW, is the largest coal port in the world.

Canada

Canada had a small coal industry concentrated at Cape Breton in Nova Scotia. At its peak in 1949 25,000 miners dug 17 million metric tons of coal from mines. The miners, who lived in camps in the city, were politically active in left-wing politics. The Westray Mine was closed in 1992 after an explosion killed 26 miners. All the mines were closed by 2001. The United States always supplied the coal for the industrial regions of Ontario. By 2000 about 19% of Canada's energy was supplied by coal, chiefly imported from the U.S. All the coal mines were shut down two years later due to an over-exportation crises in the West.

Germany

The first important mines appeared in the 1750s, In 1782 the Krupp family began operations near Essen. After 1815 entrepreneurs in the Ruhr Area, which then became part of Prussia took advantage of the tariff zone (Zollverein) to open new mines and associated iron smelters. New railroads were built by British engineers around 1850. Numerous small industrial centres sprang up and were focused on ironworks, using local coal. The iron and steel works typically bought mines, and erected coking ovens to supply their own requirements in coke and gas. These integrated coal-iron firms ("Huettenezechen") became numerous after 1854; after 1900 they became mixed firms called "Konzern."

The average output of a mine in 1850 was about 8,500 short tons; while its employment was about 64. By 1900, the

average mine's output had risen to 280,000 and the employment to about 1,400. Total Ruhr coal output rose from 2.0 million short tons in 1850 to 22 in 1880, 60 in 1900, and 114 in 1913, on the verge of war. In 1932 output was down to 73 million short tons, growing to 130 in 1940. Output peaked in 1957 (at 123), declining to 78 million short tons in 1974(Pounds, 1952).

Belgium

By 1830 when iron and later steel became important the Belgian coal industry had long been established, and used steam engines for pumping. The Belgian coalfield lay near the navigable River Meuse, so coal was shipped downstream to the ports and cities of the Rhine-Meuse-Scheldt delta. The opening of the Saint-Quentin Canal allowed coal to go by barge to Paris. The Belgian coalfield outcrops over most of its area, and the highly folded nature of the coal seams meant that surface occurrences of the coal were very abundant. Deep mines were not required at first so there were a large number of small operations. There was a complex legal system for concessions, often multiple layers had different owners. Entrepreneurs started going deeper and deeper (thanks to the good pumping system). In 1790, the maximum depth of mines was 220 meters. By 1856, the average depth in the area west of Mons was 361, and in 1866, 437 meters and some pits had reached down 700 and 900 meters; one was 1,065 meters deep, probably the deepest coal mine in Europe at this time. Gas explosions were a serious problem, and Belgium had high coal miner fatality rates. By the late 19th century the seams were becoming exhausted and the steel industry was

importing some coal from the Ruhr(Parker and Pounds, 1957).

Rationale for Trade Unionism

Mining has always been dangerous, because of explosions, roof cave-ins, and the difficulty of mines rescue. The worst single disaster in British coal mining history was at Senghenydd in the South Wales coalfield. On the morning of 14 October 1913 an explosion and subsequent fire killed 436 men and boys. Only 72 bodies were recovered. It followed a series of many mining accidents in the Victorian era, such as The Oaks explosion of 1866 and the Hartley Colliery Disaster of 1862. Most of the explosions were caused by firedamp ignitions followed by coal dust explosions. Deaths were mainly caused by carbon monoxide poisoning, although at Hartley colliery, where the victims were entombed when the single shaft was blocked by a broken cast iron beam from the haulage engine, death occurred by asphyxiation.

The Monongah Mine disaster of Monongah, West Virginia 6 December 1907 was the worst of many mining disasters in American history. The explosion was caused by the ignition of methane gas (also called "firedamp"), which in turn ignited the coal dust. The lives of 362 men were lost in the underground explosion.

As well as disasters directly affecting mines, there have been disasters attributable to the impact of mining on the surrounding landscapes and communities. The Aberfan disaster which decimated a school in South Wales can be directly

attributed to the collapse of spoil heaps from the the town's coillery past. These and several other disasters associated with coal mining in different parts of the world prompted the formation of mining unions to protect the welfare of mine workers and press for better working conditions.

COAL MINING AND TRADE UNIONISM

According to Katz and Kochan (2000) , unions make strategic decisions on the form of collective bargaining and other representational activities they choose to pursue. Unions thus have political agenda. This affects their membership at the instances of the industries, occupations, and demographic realities. To this end, their growth is influenced by cyclical and structural factors. A typical example is the role of the National Union of Mineworkers-NUM in Great Britain summarized in the sections that follows.

The **National Union of Mineworkers** is a trade union for coal miners in the United Kingdom. It was formed in 1945 as a reorganisation of the **Miners' Federation of Great Britain** (MFGB) mentioned earlier.. The NUM is perhaps best known for its role in three national miners' strikes in 1972, 1974 and 1984-85. For much of the 20th century the NUM was a powerful force not only in the British union movement, but also in British politics. Its influence was shattered by the failure of the 1984-85 strike, and by the destruction of the British coal mining industry, and it is now a small union with little political power. Be that as it may, energy supply and coal in the United Kingdom became a political issue after 1900, due to conditions under which colliers worked and how

they were treated by colliery owners. This political undertone laid the foundation for trade unionism in the coal mining industry.

The miners' unions were the largest and most powerful industrial combinations of their day, and exercised a great influence on the rest of the British labour movement. The first working class Members of Parliament, Thomas Burt and Alexander Macdonald, elected in 1874, represented mining constituencies and were funded by miners' associations. Miners' unions continued to enlarge labour representation in the House of Commons in the years which followed, although they took little part in the founding of the Labour Party. Many miners' MPs sat with the Liberals and the MFGB did not affiliate to the Labour Party until 1909. (Ashenfelter and Pencavel, 1969; and Freeman, 1986). It follows that history, laws, public policies, changes in the economic structure and labour force, and internal political drifts constitute an amalgam of factors that influence union dispositions.

It should be noted that as unionization occurs, bargaining structure emerges. Consequently, it could be argued that the functional quality of the bargaining structure determines the success level of the unions. Generally, such structures are determined by a number of factors, including: bargaining leverage, the centrality of the bargaining structures, and public policies.

All these affected the bargaining powers of the NUM when it subsumes the functions of MFGB in January 1945 It was quite evident that within NUM, each coalfield continued to

exercise a degree of autonomy, having its own District Association and its own President, General Secretary, and headquarters. Originally, a national strike required a two-thirds majority in a ballot of members. This proved near impossible to achieve and the majority was reduced to 55% in 1970 and then to 50% in 1984. In addition, regions of the union could call their own strikes. Different areas of the country varied greatly in how militant they were and it was not uncommon for animosity to exist between areas. However, before the collapse of the domineering influence of coal miners' union on political developments in United Kingdom, several strike actions were initiated the by them with varying degrees of success as listed below;

Landmark events in NUM history

- National Miners' Strike, 1912
- Formation of the Triple Alliance, 1914
- Strikes in South Wales, 1915
- Black Friday, 1921
- The general strike, 1926
- Great Depression in the United Kingdom 1930s
- Second World War
- Coal miners' strike, 1972-73
- The Miners's strike 1984=85

The Miners' Strike, 1984-85

In 1984, under the leadership of Arthur Scargill the NUM went on strike in response to the decision by the National Coal Board to close twenty so-called uneconomic pits. The

strike lasted a full year, during which there were violent clashes between police and miners, before workers were forced back to work without a deal and was an era-defining moment in British politics. The British coal-mining industry never recovered. Today there are very few mines left.

The effectiveness of the strike was reduced because of its legal position and the difficulty of measuring miners' support for the action. The membership of the NUM was not formally balloted on strike action. The union had a history of voting by public meeting and an open show of hands, and the leadership presented the law requiring a private ballot as an attack on its right to conduct internal affairs. Critics claimed that a ballot was not taken because the union could not be certain of support for the strike and that the action was illegitimate. The lack of a ballot also had implications for the government's powers to counter the strike.

Iyayi (2009) submits that trade unions were of strategic importance in the evolution and functioning of modern societies. He, however, adds that unions operate in environments which range from **mildly hostile**, through **hostile**, to deeply hostile [e.g. the 1984-85 miners strike in Britain under Margaret Thatcher]. The hostile level of the environment is dependent on the level of variance the union has against the political, legal, social, economic, and otherwise environments.

Interestingly, the necessity of a union-centred commodity determines the respect a union receives from the political interests at a point in time. Thus, in Nigeria today, the oil and gas sector shows up as the infrastructure of the nation's

economy. As a result of its necessity in the nation's near-mono cultural economy, any looming strike from the unions therefrom - the National Union of Petroleum Employees and Natural Gas (NUPENG); Petroleum and Natural Gas Senior Staff Association (PENGASEN); an ally like the National Union of Road Transport Workers (NURTW); etc - is usually with grave consequences and considered with utmost seriousness by the political leadership.

It is on record that during the political impasse which was harbingered by the annulment of the June 12, 1993 Presidential election, the NUPENG spearheaded by its Secretary-General, Mr. Frank Kokori, proved a viable union that resisted the then Federal Military Government of Nigeria. The veracity with which the union defended the said elections still remains a standard bearer for union activities in Nigeria today.

Historically, time there was when coal-fired trains on narrow, single-track railways were constructed by the British government during the colonial era [1890-1950] to aid in evacuating export crops and minerals. During this period the general perpendicular orientation of the railway lines was north-south [linking the groundnut pyramids in Kano; tin, columbite mines in Jos and the cotton, hides and skin in Maiduguri with the deep-sea harbours of Port Harcourt and Lagos in the south] [Fig. 1.1].

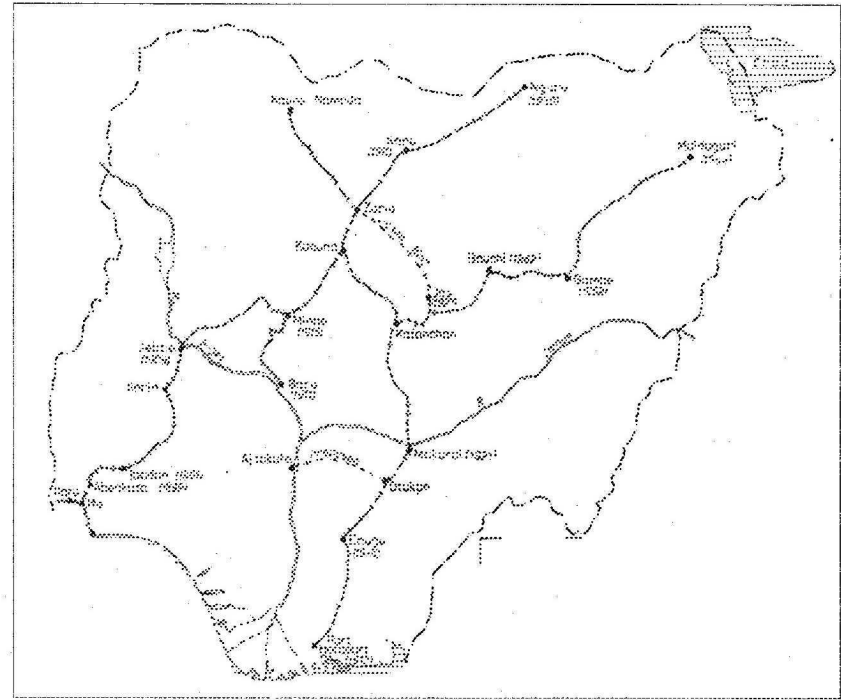


Fig. 1.1 North-South alignment of Coal-fired Railway lines
Source; Barboura, K.M. et al, [1;1982].

From these two points on the coast, the railways were pushed further into the hinterland to serve not only the main cash crop areas/tin, gold and columbite mines but to link clusters of population in the major cities for administrative conveniences. The ancient market and craft centre of Kano developed rapidly after the coming of the railway in 1911 [Nwafor, J.C.1982]. Sokoto, which refused to admit so dangerous an innovation, still languishes economically in consequence [as the rail line terminated at Kaura Namoda].

At the time, coal miners' union was delicate and sensitive for the survival of country as Nigeria's economy survived and

flourished on agricultural exports. These cash crops formed the main source of revenue, export and foreign exchange for government to provide social and economic infrastructure. Records indisputably show that 72% of total national output of the economy, GDP, came from agriculture in 1950, as against 1.1% by mining and crude oil [Ogunlowo, 2008]. The dominant role of agricultural exports [enhanced by efficient coal-fired railway services] in the nation's fortune continued in 1960 when its contribution stood at 66% compared to 1.2% from minerals [Udosen, Etok, and George, 2009]. This perhaps explains why Coal mining Union was a powerful tool for social changes and also instrumental to the success of the Nationalist movements. Miners' estates in Enugu and other places were also as a result of union activities. Remuneration in the coal industry was also among the highest as miners' welfare was of paramount importance to the government of the day.

It could be submitted that the coal miners'-inspired success story of the Pre-independent Nigeria Nationalist and union movements laid a solid foundation for the Post-independent unionism struggles in Nigeria. Thus, currently, NUPENG, PENGASEN, NURTW, the Radio, Television and Theatre Workers' Union (RATTAWU), the Academic Staff Union of Universities (ASUU), etc. have proved to be effective tools in the shaping of modern day Nigeria. These strides are traceable to the pioneering efforts of the miners' union.

COAL MINING AND COMMUNITY REALITIES

Communities are social realities and numerous communities constitute a society. Ekong (2003:390) posits that a community is

...a locality group or an aggregation of families habitually living together within a definite geographical location. Also a territorially organised population depending on each other, supporting some basic institutions and having some measures of political autonomy in relation to other communities.

The concept of community therefore concerns a particularly constituted set of social relationships based on something which the participants have in common – usually a common sense of identity. It denotes a wide ranging relationship of solidarity over a rather undefined area of life and interests. But Ferdinand Tonnies argued in terms of community type.

One difficulty for the sociology of community which ensues from the multiple intellectual origins is that it has frequently been used to identify and at the same time endorse a particular form of social association. And secondly, there is no clear and generally accepted definition of just what characteristic features of social interaction constitute the solidaristic relations typical of so-called communities. There is one element which can be found in all of the concepts...all of the definitions deal with people.

William Kornblum attempts a broker as he argues that at the level of social organisation between the primary group and the larger institutions of the nation state are communities. Communities therefore are a set of primary and secondary groups in which the individual carries out important life functions and may be either territorial or non-territorial. In other words, a community is a spatial or territorial unit of social organisation in which people have a sense of identity and a feeling of belonging. In spite of the lack of generally accepted definition, the study revolves around the definition of a community as: a local grouping within which people carry on a full round of life activities but often used (with emphasis) for any locality or category of people.

From the foregoing, it could be argued that community-based strategic planning (organisation) has become a well-defined approach that helps communities forge collective responses for dealing with community-wide problems. Thus, No one person can solve our problems... Traditionally, we looked for someone to be our answer. We are realising that we are the answer.

It is on the strength of this that communities, having regards to political ecology have collectively grown to resist any attempt at degrading their environment in any form and for whatever reason.

The communities' verve in the challenge of resisting environmental is informed by the knowledge that that coal is still the cheapest source of energy but very voracious in environmental depletion and therefore very risky to sustainable development. Therefore, for communities to allow the degrading of their environment, There is the utmost need

for a guaranteed future and the assurances of positive and active participation in the process of coal mining development. Quite recently, a private sector driven coal-mining venture has been reportedly jeopardised in India. This is sequel to a huge financial investment on the part of the private investor. Resultantly, much money has been drained yet the power and energy not realized. The negative impact inherent in coal mining is herein brought to the front burner. In sum, coal remains cheap and affordable compared to other sources of power and energy; however, environmental concerns leave much to be desired. Mining project should very seriously consider community concerns regarding environmental realities.

However, the definition of community development is cumbersome in Nigeria because of varying interests. It often constitute a fundamental setback in the mining industry because it is difficult to identify the mining community, as the neighbouring and distant communities lay claims to mining sites- as is the case between Okaba and Odagbo communities in Kogi state.

In Nigeria, the definition of community development is always a problem as youths and elders have different demands it is very difficult to evolve a sustainable economic empowerment scheme that will protect the diverse interest of all the stakeholders viz; youths, elders, women's groups and the political class. Most members of the community want money, and often they take money from the coal mining companies but deny taking money. The supervising ministry should be conscious of community development due to problems already ignited by oil community development.

Besides, there are always problems of identification during negotiations, as both youths and elders come for settlement and at times halt production in the sites. This has resulted in conflict to the regulators[particularly Federal Ministry of Mines] who hardly know who to recognize in the Community Development Agreements[CDA]