



# Technical Assistance Consultant's Report

---

Project Number: 37618/TA 4680  
March 2007

## PEOPLE'S REPUBLIC OF CHINA: Alternative Livelihood Options to Facilitate Coal Sector Restructuring (Financed by the Poverty Reduction Cooperation Fund)

Prepared by:

PricewaterhouseCoopers Private Limited (PwC)

New Delhi, India

For China National Coal Association (CNCA)

This consultant's report does not necessarily reflect the views of ADB or the Government concerned, and ADB and the Government cannot be held liable for its contents. (For project preparatory technical assistance: All the views expressed herein may not be incorporated into the proposed project's design.)

Asian Development Bank

# TA4680-PRC

## Alternative Livelihood Options to Facilitate Coal Sector Restructuring



Final Report

March 2007

## Disclaimer

1. This report is intended solely for the use of China National Coal Association (CNCA), Governments of Jiaozuo and China and Asian Development Bank (ADB) and should not be referred to or distributed for any other purpose without our written consent.
2. For purposes of the exercise, we have used primary data obtained from the Jiaozuo local Government and the Jiaozuo Coal Group as well as secondary data obtained from relevant sources, which we believe to be reliable and our assessment and recommendations are dependent on such information being complete and accurate in all material respects. We disclaim all liability to any third party who may place reliance on this report and therefore does not assume responsibility for any loss or damage suffered by any such third party in reliance thereon.
3. Assumptions on expected manning requirements against proposed projects during the 11<sup>th</sup> five year plan are indicative and have been based on benchmarking with current industry standards.
4. PricewaterhouseCoopers Private Limited (PwC) makes no representation or warranty as to the accuracy or completeness of the information used in this report and shall have no liability for any representations (expressed or implied) contained in, or for any omission from, this report. Furthermore PwC will not be bound to discuss, explain or reply to queries raised by any agency other than the intended recipients of this report.

## Contents

1. Executive Summary.....	1
2. Introduction .....	8
2.1. Objectives of the assignment .....	9
3. Methodology and Approach .....	11
3.1. Methodology.....	11
3.2. Our approach .....	12
3.2.1. Kick off meeting .....	12
3.2.2. First field visit to the city of Jiaozuo.....	12
3.2.3. Inception Report.....	13
3.2.4. Second field visit to the city of Jiaozuo .....	13
3.2.5. First workshop with key stakeholders.....	14
4. Setting the Baseline .....	16
4.1. Overview of Jiaozuo’s economy and industrial development .....	16
4.2. Coal Sector Restructuring in Jiaozuo.....	18
4.3. Socio-economic profile of the displaced miners.....	19
4.3.1. Age Mix .....	19
4.3.2. Education Mix.....	20
4.3.3. Income mix .....	21
4.4. Existing training facilities .....	21
4.5. Existing social protection policies .....	22
4.5.1. Old Age Insurance .....	22
4.5.2. Basic Living Allowance.....	23
4.5.3. Unemployment Insurance .....	23
4.5.4. MLSS .....	24
4.5.5. Medical Insurance.....	24
4.5.6. Work Related Injuries Insurance.....	24
4.5.7. Maternity Insurance .....	25
4.5.8. Education for children.....	25
4.6. Assessment of socio-economic protection levels.....	26
4.7. Existing environment regeneration policies.....	28
4.7.1. Environmental baseline in Jiaozuo and opportunities .....	30
5. Redeployment Options and Challenges.....	32
5.1. Proposed Jiaozuo Coal Group projects .....	32
5.2. Other key projects in Jiaozuo as outlined in the 11 <sup>th</sup> 5 year plan.....	33
5.3. Tourism for Economic Development.....	35
5.4. New projects in Henan and neighboring provinces .....	36
5.5. Leveraging foreign direct investment (FDI) for economic development.....	37
5.6. Supply side analysis.....	38
5.7. Summary of opportunities and challenges .....	38
6. National and International Case Studies.....	40
6.1. The Shanxi experience.....	40
6.2. The Shanghai experience .....	41
6.3. The Lorraine Experience .....	41
6.4. British Coal Enterprise and restructuring of the UK coal industry .....	42
6.5. The Ruhrgebiet experience .....	43
7. Recommendations .....	45
7.1. Augmenting economic development through FDI.....	45
7.2. Considering tourism as the sixth pillar of Jiaozuo’s economy.....	45
7.3. Redeployment and training.....	46
7.3.1. Redeployment strategy.....	46
7.3.2. Retraining.....	47
7.4. Employment Resource Centre (ERC).....	50
7.4.1. Rationale of setting up the ERC and the required institutional arrangements .....	50

7.4.2. Scope of work for the ERC .....	51
7.4.3. Manning requirements for the ERC .....	52
7.5. Jiaozuo Coal Group and Government relationship .....	53
7.6. Monitoring and Evaluation (M&E) .....	55
8. Annexure .....	58
8.1. Key findings from the study tour .....	58
8.2. List of people met in the kick off meeting, the two field visits and the two workshops .....	61
8.2.1. Kick off meeting in Beijing.....	61
8.2.2. First field visit to Jiaozuo.....	61
8.2.3. Second field visit to Jiaozuo .....	62
8.2.4. First workshop in Beijing.....	63
8.3. Job Descriptions of the ERC employees.....	64
8.4. Proposed projects with a potential for funding from ADB and others.....	69
Figure 1: Diagrammatic Depiction of the Sustainable Livelihoods Approach .....	11
Figure 2: Employment by Sector in Jiaozuo from 2003 to 2005 .....	16
Figure 3: Employment by the Coal Sector in Jiaozuo from 1990 to 2005.....	18
Figure 4: Coal Miner Retrenchments .....	19
Figure 5: Age Mix of Displaced Workers .....	19
Figure 6: Education Mix of Displaced Workers.....	20
Figure 7: Income Mix of Displaced Workers .....	21
Figure 8: Vulnerability of miners following job losses .....	27
Figure 9: Comparison of the Resource Utilization Efficiency in Jiaozuo with the National Average .....	30
Figure 10: Environmental impact of mine closure and associate remedies and opportunities .....	31
Figure 11: Proposed Coal Sector Projects .....	32
Figure 12: Proposed Non Coal Sector Projects .....	33
Figure 13: Proposed Projects in five pillar industries in the 11 <sup>th</sup> five year plan .....	34
Figure 14: Estimated Incremental Employable Population in 2005 .....	38
Figure 15: Representative training programmes for workers in the age group of below 40 years .....	48
Figure 16: Representative training programmes for workers in the age group of 40 years and above.....	49
Figure 17: Monitoring and Evaluation system .....	55

# 1. Executive Summary

## Coal Sector Restructuring in China – Key Challenges

China is the world's largest producer and consumer of coal at the moment. The rising energy demand and the dependence of coal in the foreseeable future prompted the Government to restructure the coal sector in the country in the 1990s. The Government decided to close all resource depleted and economically unviable coal mines and promote the development of modern, mechanized and large scale mines to sustain the existing production base of coal and funnel the required investments to enhance the capacity of the large mines to meet the projected energy demands.

The process of closing small illegal mines and economically unviable state owned coal mines has led to the rise of social hardship for inhabitants of many mining towns and communities. Displaced miners have struggled to find alternative employment owing to multitude of factors ranging from the location of many mines in remote areas far from the cities, limited education and work related skill sets and the exponential rise in incremental employable population in the cities leading to a very tight labour market. Apart from the redundant miners who have struggled to find sustainable, alternative employment following job loss, the local Governments have been experiencing difficulties too. The difficulties faced by the local Governments are twofold. On one hand, they have experienced a decline in revenue as a result of the closure of the mines and on the other hand pressure has been mounting on them to provide reemployment to the displaced miners.

## Context of the current study

Recognizing the urgent need for developing sustainable alternative livelihood programmes for the displaced miners to prevent social instability, the Government of China requested the Asian Development Bank to assist the China National Coal Association (CNCA) conduct a comprehensive study to explore the alternative livelihood options. Jiaozuo, historically regarded as a coal mining city in the Henan province was selected as the pilot city. The findings and recommendations from the current study are expected to be leveraged to replicate the experience of helping the displaced mining community of Jiaozuo in other coal mining cities of China.

## Our approach

The PwC team employed the Sustainable Livelihoods Approach (SLA) to understand the existing livelihood conditions of the coal miners and their dependants. Assessment of household resources of the miners was carried along five dimensions:

- Financial Capital – income, savings, credit, remittances from relatives and family members, pensions
- Human Capital – educational attainments, vocational and professional qualifications, occupational level in the mining workforce
- Social Capital – community groups, associations, guilds, societies and clubs
- Physical Capital – access to essential services and infrastructure such as clinics, hospitals, telephones, electricity, transport, roads etc
- Natural Capital – community or household ownership of natural resource stocks such as land, water, poultry and livestock.

Meetings and focus group discussions with key stakeholder encompassing the officials from the Jiaozuo local Government, Jiaozuo Coal Group, already and to be displaced miners from the Jiaozuo mining community were held to understand the ground realities of Jiaozuo's coal mining sector and the concerns and apprehensions of the miners.

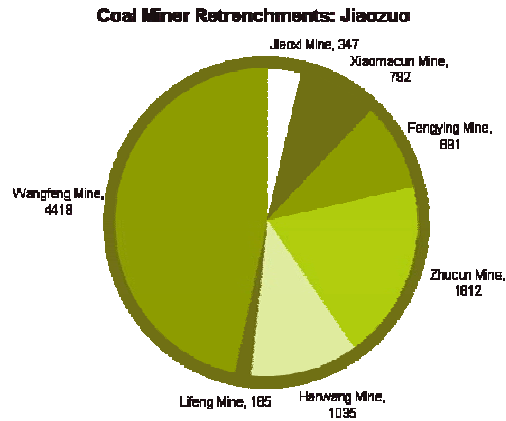
Findings from the information collected through meetings with Government, Jiaozuo Coal Group officials, the already and to be displaced miners were then used to compile a comprehensive baseline dataset.

**The context in Jiaozuo**

Jiaozuo, affectionately known to many as the “coal city” of China produced 6.06 million tons of coal in 2005. It is estimated that by 2020, the total production of coal would be around 20 million tons. However, like many other coal mining cities in China, Jiaozuo has been plagued by the problem of a number of small illegal mines responsible for disorderly excavation and excessive exploitation of its coal reserves. In line with the central Government’s policy to close down small illegal mines, the Jiaozuo Coal Industry Group Corporation Limited (JCIG referred to as Jiaozuo Coal Group hereafter) was established in 1999 to act as the catalyst towards rationalizing the coal sector in city by consolidating legal mines into large state owned conglomerates. In the last few years, 33 small mines have been closed in the city, 2 are likely to be closed down soon with the remaining two having been integrated into the state owned mines.

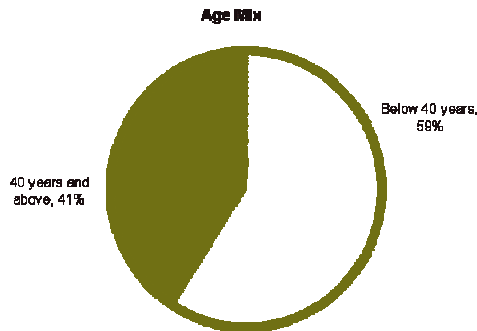
Information on the miners of the 33 closed down small illegal mines is not maintained by the local Government as the miners were primarily rural migrants and the Government had no responsibility for their resettlements. It is anticipated that many of the erstwhile miners have become involved in informal economic activities.

The Jiaozuo Coal group on the contrary maintains detailed records on its miners. In the recent years, six state owned mines have been declared bankrupt with the Wangfeng mine scheduled to go for bankruptcy in the near future. The total number of miners already displaced so far is 10,432 while the estimated number of miners expected to be displaced by 2010 is 9460.

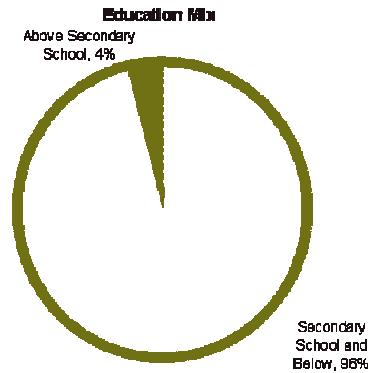


**Setting the baseline**

The baseline dataset revealed that of the 9,460 miners poised to lose their jobs, 41% are in the age group of 40 years and above while the remaining 59% are below 40 years.



The dataset also revealed that 96% of the miners have educational qualification of secondary school and below.



The baseline dataset captured in detail the existing social protection policies offered by the central Government and the local Government in Jiaozuo including the old age insurance, basic living allowance, unemployment insurance, minimum living standard scheme (MLSS), medical insurance, work related injuries insurance and maternity insurance and the extent of coverage available to the miners.

Following is an assessment of the vulnerability of the miners representing different age groups from an economic perspective following their loss in jobs mapped against the existing socio-economic protection levels.

Age Group	Basic Living Allowance (BLA)	Unemployment Insurance (UI)	MLSS	Old Age Insurance (OAI)
40 – 49 years	Average allowance of RMB 180 – 200 per month for 3 years, an income protection of around 24%, excluding savings	Average allowance of RMB 170 – 180 for up to 2 years, an income protection of around 20%, excluding savings	All male retrenched workers in the age group not involved in high risk jobs would require support post BLA and UI but may not be eligible following inspection	Female retrenched workers in the age group of 40-49 and female cadres between 45 – 49 years are eligible post BLA and UI  All male retrenched workers in high risk jobs in this age group are eligible post BLA and / UI
30 – 39 years and below 30 years	Average allowance of RMB 180-200 per month for 3 years, which translates to income protection of around 24%, excluding savings	Average allowance of RMB 170 – 180 for up to 2 years, which results in income protection of around 20%, excluding savings	All retrenched workers would require support post BLA and UI but may not be eligible based on existing approval procedures	None of the retrenched workers in this age group would be eligible even post BLA and UI support

The analysis clearly indicates that the two most vulnerable groups of the retrenched miners would be:

- Male and female retrenched workers in the age group till 39 years assuming that they do not get reemployment within five years i.e. the period when they are entitled to enjoy the basic living allowance (the first 3 years) and the unemployment insurance (the subsequent 2 years). However, their chances of getting reemployed following retraining are somewhat higher than their colleagues in the age group of 40 and above.
- Male retrenched workers in the age group of 40 - 49 years with below middle school education and not involved in high-risk jobs assuming that they do not get reemployment within the first five years of retrenchment. Limited skill sets and their age are likely to have an adverse effect on their chances of finding a new job in the formal sector.

The environmental baseline of Jiaozuo showed that the city suffers from severe air and water pollution. Over excavation has resulted in sinking of the surface in pockets of the Zhong Zhan district. Alarming the Chemical Oxygen Demand (COD) discharge for production of 10,000 RMB of GDP was 41.42 Kg in 2002, which was 2.05 times higher than the national average. Similarly, the discharge of amino-nitrogen, stockpiles of industrial solid wastes and generation of industrial particulate matter for production on 10,000 RMB of GDP were 5.5, 1.2 and 1.9 times higher than the national average.

### Redeployment options and challenges

Projects in the pipeline with a potential to provide alternative livelihood opportunities for the displaced miners have been grouped into three categories:

- Proposed Jiaozuo Coal Group projects in both the coal and non coal sectors – Approximate number of retrenched miners expected to be redeployed against the proposed coal sector projects stands at 3956. The four new proposed non-coal sector projects in water supply, new materials, fly ash bricks and iron and steel is expected to create vacancies for another 772 people.
- Other projects in Jiaozuo expected to be rolled out during the 11th five year plan – If all investments envisaged in the 11th five year plan materialize, it is expected that the proposed projects in the aluminium, agriculture and by products, auto ancillary, power generation and chemicals sectors would have direct manning requirement of around 304,000 people. However, the requirement for unskilled workers against these projects is expected to be around 75,000 or around 25% of all vacancies only. It is estimated that around 70,000 employable people would join the job market each year from the city.
- Proposed projects in Henan and neighboring provinces during the 11th five year plan – It is expected that during the 11th five year plan the Henan, Shandong and the Shanxi province would roll out new projects in the coal sector. Other projects with a potential to employ the displaced miners include power generation and speedway / highway projects in Henan, Shandong and Hubei.

Considering that close to 70% of the to be displaced workforce's education is limited to primary education supplemented by work experience in unskilled activities, it is likely that the workers would find it extremely difficult to compete against the new employable population for the unskilled positions that are likely to be on offer in Jiaozuo city and its neighboring provinces in the next five years. An analysis of the proposed projects yields the following observations:

- Displaced workers are more likely to be absorbed in the 4,000 odd jobs in the coal sector provided the Jiaozuo Coal Group reserves the positions for the retrenched workers
- Training would be essential to equip the workers especially the ones in the younger age group with the necessary skills to be eligible for absorption in the four non coal sector projects of the Jiaozuo Coal group
- Stiff competition is expected from the incremental employable population in Jiaozuo including the people who are shifting from agriculture against the unskilled positions in the proposed projects under the 11th five year plan in Jiaozuo city

- The small proportion of retrenched workers with higher education (college degree and above) and skills are likely to find alternative deployment opportunities given the significant number of projects utilizing state of art technology expected to be implemented under the 11th five year plan
- Provinces like Henan, Shandong, Hubei and Shanxi are all facing problems with unemployment and it is unlikely that workers from Jiaozuo city would have much of a chance to find a new job in the proposed projects with a requirement for unskilled workers.

## Recommendations

The redeployment and training strategy for the to be displaced miners of Jiaozuo has been formulated after categorizing the miners into two groups namely, below 40 years of age and 40 years and above.

Miners below 40 years of age	Miners who are 40 years and above
<p><b>Redeployment strategy:</b> 70% of the miners are in this age group and it has been suggested that top priority is given to retrain and equip them with the necessary skills to find a new job in the formal sector.</p> <p>It has been recommended that the Jiaozuo Coal Group focuses initially on the opportunities expected to be available against the group’s proposed projects in the next five years.</p> <p><b>Training:</b></p> <p>It would be important to roll out training programmes that are market driven. Courses could be a mix of practical and theoretical training and could include short-term (one to six months) and on the job training programmes.</p> <p>Representative training programmes in line with the unskilled positions likely to arise from proposed projects due to be implemented in the 11<sup>th</sup> five year plan, could be:</p> <ul style="list-style-type: none"> <li>• Welding</li> <li>• Fitting</li> <li>• Basic mechanical and electrical maintenance</li> <li>• Material handling</li> <li>• Driving</li> <li>• Cleaning and sanitation.</li> </ul>	<p><b>Redeployment Strategy:</b> 30% of the miners in this age group are unlikely to be absorbed in the formal job market owing to their age and limited skills.</p> <p>It has been recommended that focus is given to self-employment for this group of miners.</p> <p><b>Training:</b></p> <p>The training programmes for the miners in this age group would have to be conducted in two phases. In the first phase, the workers, many of whom have little formal business experience would gain basic understanding on seed capital / credit facilities, marketing concepts etc. Following that they could trained in specially designed programmes to increase their chances in self-employment.</p> <p>Training programmes with an aim to self-employ miners in this age group could include:</p> <ul style="list-style-type: none"> <li>• Cattle raising for milk and meat supply</li> <li>• Poultry farming</li> <li>• Apple and orange growing</li> <li>• Bakery</li> <li>• Tailoring / Dress making</li> <li>• Bi-cycle and vehicle repairing</li> <li>• Plumbing</li> <li>• Nursing</li> <li>• Handicrafts</li> <li>• Tour guide</li> <li>• Household electronics repairing.</li> </ul>

We have suggested the creation of the Employment Resource Centre (ERC) which would act as a “single Window” agency to assist displaced workers find alternative livelihood activities. The centre could

function as a special cell under the aegis of the Jiaozuo Coal Group with the sole aim to help displaced workers. The scope of work for the centre could include:

- Information dissemination to the displaced mining community about their statutory entitlements on one hand and appraise them about the potential job opportunities on the other
- Provide psychological and financial counseling
- Maintain a baseline data of the displaced workers and prepare an evaluation sheet to record their skills, aptitude for jobs / self-employment
- Inform workers about the training programmes available at their disposal and provide assistance to help them decide the programme they should opt for depending on their aptitude and skill levels
- Liaise with potential employers with an aim to create an employment information network
- Act as an incubation centre to assist displaced workers set up their own small businesses.

We envisage that ERC would require 4 employees namely, a centre manager, two experienced counselors and an office assistant to perform its functions effectively.

A mutually beneficial relationship between the Jiaozuo Coal Group and the local and central Governments would be extremely critical to achieve the targeted outcome of:

- Providing optimal support to the displaced miners
- Improving financial performance of the Jiaozuo Coal Group without any negative socio-economic impact on the miners
- Reducing cash outflows from both Government and the Jiaozuo Coal Group.

We have recommended that:

- The Government explore the possibilities of availing assistance from Asian Development bank and then on lend it to the Jiaozuo Coal Group to set up the ERC
- The local Government share the responsibilities of providing an alternative source of income to erstwhile miners with the Jiaozuo Coal group
- The Government introduce “policy loans” on non-commercial terms similar to the ones that were provided in the steel sector to the Jiaozuo Coal Group to enhance its capacities in non-coal sectors
- The Government may liaise with companies like the State Development and Investment Corporation who are keen to invest in coal gangue fuelled power plants and explore the possibility of constructing some of the proposed plants in Jiaozuo.

We have suggested a comprehensive monitoring & evaluation (M&E) framework to capture the process of minimizing the adverse socio-economic impact of coal restructuring in Jiaozuo by redeploying displaced miners in alternative livelihoods. Following is a snapshot of the proposed M&E framework.

Goal	Purpose	Outputs	Activities
Minimize adverse socio-economic impact of coal sector restructuring in Jiaozuo	Redeploy displaced miners in alternate livelihoods	Jiaozuo’s economic growth registers an increase in the next five years  Safety net programmes and the 3 guarantees scheme enable displaced workers’ families to secure economic and social viability	Annual study on the GDP growth in Jiaozuo is conducted  Disbursing Government departments submit their monthly monitoring progress reports; the ERC conducts periodical impact studies

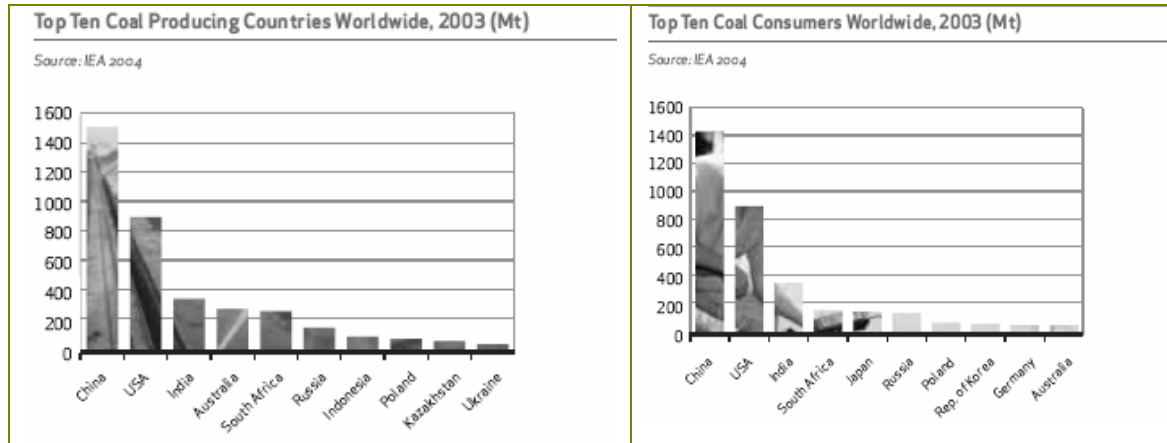
		<p>Retrenched workers register themselves at the ERC, get counseled, receive training to upgrade their skills in their quest for an alternative livelihood option</p> <p>Jiaozuo's energy efficiency is improved and measures are taken to protect the environment of the city</p> <p>Jiaozuo's environmental quality registers an improvement</p>	<p>ERC produces monitoring reports</p> <p>Qualified provincial agencies prepare energy audit reports</p> <p>Jiaozuo municipal environmental protection bureau conducts impact studies</p>
--	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

We have also recommended a list of projects that Jiaozuo city could implement with an aim of environmental regeneration on one hand and employment generation on the other. Representative projects that could be rolled out with a potential for funding from Asian Development Bank and other agencies include:

- CMM residential use project through installation of gas holders, transmission and distribution networks to meet the expected demand in gas from residential users
- Coal gangue based power generation projects to meet the significant demand for electricity by the end of the 11<sup>th</sup> five year plan
- Land rehabilitation programmes to meet the demand of land for residential and commercial enterprises
- CBM project to meet the expected demand for electricity in the next five years
- Coal gangue and ash based project to produce building materials.

## 2. Introduction

Coal production around the world has increased by 38% in the last two decades with 4050 MT of coal consumed by the world currently. More than half of this is consumed in Asia with China using the most. The World Coal Institute's publication 'The Coal Resource' (2005) predicts that by 2030 the production capacity will be around 7 billion tones with China, already the world's largest producer, accounting for almost half the projected increase.



Source: 'The Coal Resource' (2005) published by the World Coal Institute

China relies heavily on the domestic production of coal to meet its rising demands for energy. At the moment, coal accounts for 76% and 69% respectively in terms of China's energy production and consumption. Triggered by rapid economic growth, China's coal production experienced a significant growth in 2005. Coal production reached 2.205 billion tons while the country's consumption of coal registered an increase of 11% (2.019 billion tons) accounting for almost 80% of the total growth in consumption in the world. The four main coal consuming industries are power generation, building materials, metallurgy and chemical production with power generation being the largest consumer. Over the last two decades, China has experienced a continuous increase in coal consumption and predictions are that the trend will continue in the foreseeable future. According to the 11<sup>th</sup> five year plan prepared by the National Development and Reform Commission, China's coal production will be pegged around 2.6 billion tones by the year 2010.

Traditionally, China's coal mines have been classified into three categories, namely, Key State Owned Mines (KSOMs), State Owned Coal Mines (SOCMs) and township and village Coal Mines (TVCMs). In 2004, the KSOMs accounted for almost 50% of the total coal production while the smaller TVCMs (including many illegal small mines) contributed to one third of the total production. Although the contribution of the TVCMs to the coal industry was quite substantial, they were characterized by lack of modern equipment and mining practices, lower wages, lower safety measures for the miners, non conformity to environmental standards resulting in frequent accidents in the mines on one hand and serious air and water pollution on the other. However, the Chinese coal industry is facing a transition as many of the country's mines near exhaustion of their coal reserves after decades of continuous extraction. The environmental impact of coal mining has had serious implications on the regional eco-systems and the country has been plagued with fatal accidents to miners especially in the small illegal mines. A World Bank study conducted in 2004 on the coal sector in China pointed out that from 1980 to 2002, although the number of mine accidents were reduced from 4.5 persons /Mt to 1.3 persons/Mt in the Key State Owned Mines, the accidents in the TVCMs on the contrary were consistent, with around 12.7 fatalities/ Mt in 2002<sup>1</sup>.

<sup>1</sup> Source: *Toward a Sustainable Coal Sector in China June 2004 – A joint UNDP / World Bank report*

Against this backdrop, the Government decided to close resource depleted and economically unviable mines and started encouraging the formation of large mechanized mines and initiated the process of modernizing the existing large and medium sized coal mines. The Government has also been very active in closing the small mines, especially the illegal ones.

The central Government's reform measures in the coal sector have resulted in a rapid increase in the number of displaced miners in many mining cities in China. This has resulted in increasing the pressure on local governments to provide re-employment to the displaced miners and countering decreasing revenue and poor environmental conditions following mine closures. Anticipating the need for the development of sustainable alternative livelihoods programmes for the displaced miners to prevent social instability, the Government of the People's Republic of China (PRC) requested the Asian Development Bank (ADB) to assist the China National Coal Association (CNCA) in conducting a study for exploring the alternative livelihood options to facilitate China's coal sector restructuring.

The ADB consequently came up with a Technical Assistance programme in consultation with the PRC Government and the CNCA. The contract was awarded to PricewaterhouseCoopers India Pvt. Ltd (referred to as PwC hereafter) to undertake the assignment titled TA 4680-PRC: Alternative Livelihood Options to Facilitate Coal Sector Restructuring.

Following a comprehensive research of the available literature with CNCA and studies conducted by the multilateral and bilateral agencies on the Coal Sector Restructuring process, the city of Jiaozuo in the Henan province, till recently considered as a premier mining city of China was chosen as a pilot city for the assignment.

## 2.1. Objectives of the assignment

The study is being conducted in two phases with associated objectives against each individual phase. The two phases are:

- Phase I: Data collection and preliminary analysis
- Phase II: Methodology for identifying alternative economic activities and investments and other support programmes.

The objectives of phase I included the following:

- Collect and undertake a comprehensive analysis of the existing literature including secondary data, reports etc on coal resources and the mine closures in China
- Prepare a profile of regions / provinces that are known to be largely dependant on coal mining but whose coal reserves are being depleted based on available secondary literature
- Understand and review the impact of coal mine closures in Jiaozuo in terms of poverty incidence and environmental degradation
- Collect data on Jiaozuo city's past and present employment in coal mining and review the extent of unemployment in the coal sector likely to happen in the next five years
- Review the entitlements received by displaced miners in the past and present against commitments from the Governments at different levels
- Review the efforts of economic restructuring undertaken in the city of Jiaozuo
- Analyze the socio economic impacts and the extent of environmental degradation likely to happen due to closure of mines in Jiaozuo in the next five years
- Conduct focus group discussions with the displaced and the likely to be displaced miners to understand their key concerns following the closure of coal mines leading to loss of jobs
- Understand and review the existing policies and laws in practice to promote reemployment and introduce relevant experiences from other countries
- Identify the key barriers in reemployment training for the displaced miners

- Organize a study tour to a country in Europe for two Government officials to understand and review the steps taken by concerned authorities to mitigate social and environmental impacts following the closure of coal mines.

The objectives of phase II comprised the following:

- Develop a methodology for identifying alternative economic and livelihood activities in Jiaozuo
- Analyze and assess the investment required and programmes that may have to be rolled out for creating new job opportunities and the subsequent training required on one hand and policy options for the Governments at various levels to mitigate the social and environmental impacts of coal mine closures on the other
- Leverage international experiences in developing and developed countries to analyze potential modes and methods for restructuring and environmental protection
- Formulate potential economic restructuring strategies for Jiaozuo to address the anticipated economic problems due to mine closures and the likely social hardships to be experienced by the retrenched miners
- Suggest and develop a model for job creation and training programmes to assist the redundant unskilled workforce find alternative livelihood activities
- Develop a monitoring and evaluation (M&E) system following careful review of all related documents and come up with monitoring indicators for poverty and social aspects, environmental improvement etc
- Assess the requirements in terms of resource and institutional arrangements for monitoring the impact of the current study and identify skills in data collection, analysis, reporting and management information system skills to implement the M&E system and identify the training requirements that may be required

The interrelated objectives of phase I & II leads to the overarching objective of the study to assist CNCA develop and apply a methodology for identifying alternative livelihood options for people dependent on coal mines as their main source of income in a city like Jiaozuo, where the coal reserves are either decreasing or are close to being exhausted.

The key findings and the recommendations made for Jiaozuo are proposed to be replicated by CNCA in other mining cities in China facing a similar problem.

### 3. Methodology and Approach

The overall approach undertaken by the PwC team was based on a comprehensive analysis of the existing livelihoods situation of the coal miners and their families in Jiaozuo using the Sustainable Livelihoods Approach (SLA). On understanding the current livelihoods situation, the SLA was further applied to identify the pathways that displaced coal miners could take to access and benefit from alternative livelihood options along with the required policy support and institutional mechanisms that would enable the miners to capitalize on these options.

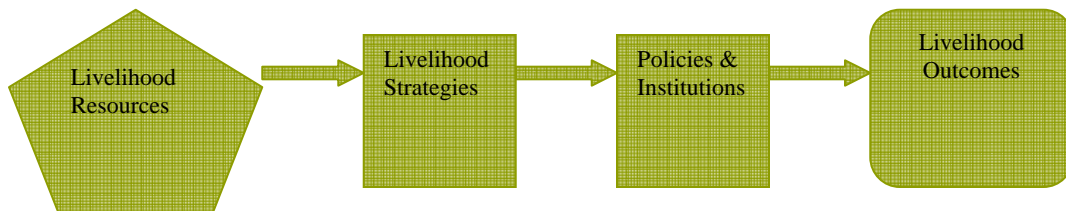
#### 3.1. Methodology

Our methodology comprised the following steps:

- Establishing a comprehensive baseline encompassing issues such as coal sector restructuring and miner retrenchments, demographic mix of the displaced miners, income level and social protection, existing environment regeneration policies, existing training facilities, assessment of the vulnerability of the miners in income protection etc through a combination of secondary data research and focus group discussions
- Assessing the redeployment options and the likely challenges to be faced by the miners through a comprehensive analysis of the possibility of miners being absorbed in the new projects to be rolled out in Jiaozuo city, Henan and other neighbouring provinces during the 11th five year plan covering both the coal and non-coal sectors
- Using the results of the baseline, identify and recommend alternate livelihood options for various categories of the workforce in terms of retraining for redeployment and self-employment, business incubation support and job counseling, etc. required to enable the displaced coal miners to attain redeployment and self-employment
- Recommending a monitoring and evaluation (M&E) framework, based on international best practice that can measure the progress of the displaced coal miners towards achieving alternate livelihood strategies throughout the process of implementation.

We applied the Sustainable Livelihoods Approach (SLA) in assessing the baseline conditions in Jiaozuo and identify alternate livelihood strategies. The schematic diagram below illustrates the approach used by the team.

**Figure 1: Diagrammatic Depiction of the Sustainable Livelihoods Approach**



The SLA is an analytical tool for understanding livelihoods systems and strategies and their interaction with policies and institutions. Interactions between the first three stages is expected to result in outcomes for the target group in terms of more income, increased well being, reduced vulnerabilities, improved food security and more sustainable use of the natural resource base.

In line with the SLA, we assessed household resources along five dimensions:

- Financial Capital – income, savings, credit, remittances from relatives and family members, pensions

- Human Capital – educational attainments, vocational and professional qualifications, occupational level in the mining workforce, health and disability status
- Social Capital – membership of , work teams, community groups, associations, guilds, societies and clubs
- Physical Capital – access to essential services and infrastructure such as clinics, hospitals, telephones, electricity, transport, roads etc
- Natural Capital – community or household ownership of natural resource stocks such as land, water, poultry and livestock.

Findings from the information collected through the combination of literature review, interviews with the concerned officials from the Jiaozuo Coal Group and the Government and focused group discussions with the miners are provided in the next section.

Based on the data collected from the field visit to Jiaozuo city and the interviews conducted with Government officials of the city and the concerned people from the Jiaozuo Coal Group, we assessed the likelihood of the displaced miners getting absorbed in new projects in the pipeline in both the Jiaozuo city and Henan and other neighboring provinces. Our assessment covered the projects expected to be implemented by the Jiaozuo Coal Group in the next five years in both the coal and non-coal sectors. We also analyzed the possible manpower requirements from the projects outlined in the 11th five year plan for Jiaozuo and tried to assess the possibility of the miners getting redeployed in these projects.

We recognized that Jiaozuo's location in Henan province puts it in a position to leverage economic links with the neighboring provinces as well as capitalize on its proximity to the north-eastern coast of China. Our approach to the macroeconomic assessment was therefore based on identifying inter/intra-industry and sector linkages (i) within Henan province and (ii) between Henan province and the adjacent provinces such as Shanxi etc. Details on our findings on redeployment options and challenges have been provided in section 5 of this report.

## **3.2. Our approach**

Our approach consisted of meeting key stakeholders from the Jiaozuo Coal Group, the concerned officials from the local Government, displaced and likely to be displaced miners during the project kick off meeting, the first and second field visits to Jiaozuo and conducting the first and second workshop in Beijing to present the findings and recommendations.

### **3.2.1. Kick off meeting**

The kick-off meeting involving all the stakeholders was held in Beijing on July 27, 2006. During the meeting, the stakeholders came to a mutual consensus on the key project objectives, the deliverables, the approach, the pilot city and the envisaged timelines for the deliverables. The meeting was attended by the ADB representative, Government officials from CNCA and the project team members.

A list of people who attended the meeting is provided in Annexure 8.2.1.

### **3.2.2. First field visit to the city of Jiaozuo**

The first field visit to Jiaozuo was conducted between August 15 and August 18, 2006. Prior to the visit, detailed questionnaires with an aim to understand the coal industry in particular and the overall economic scenario of the city in general were developed and shared with the Jiaozuo Coal Group and the local Government agencies. During the field visit, the PwC team met representatives from the Jiaozuo Coal Industry Group (JCIG), the Zhongma mine and the Xinzhuochun Industrial Company to learn about the issues and collect relevant data on the coal industry of Jiaozuo including demands, projections of output and the number of people employed. Data on the employees of the Jiaozuo Coal Group was gathered including age groups, the ratio of male to female workers, educational level of the workers etc. The key objective of the visit was to gauge the:

- Degree of dependence of the city and its inhabitants on the coal sector for their livelihoods, and
- Examine the extent of the emergence of new industries like power generation, chemical, construction and tourism and their manpower requirements in the short-term future.

To understand the prevailing laws and policies related to coal mining, policies in place to help displaced miners and available social safety net mechanisms, team members met a number of local Government departments. These included:

- National Reform and Development Commission (NDRC)
- Department of Finance
- Department of Environmental Protection
- Department of Enterprises
- Department of Civil Affairs
- Department of Labour, Employment and Social Security
- Department of Statistics
- Office of Poverty Alleviation
- Department of Land and Resources

The key aim was to understand the prevailing laws and policies related to coal mining, applicable policies to help displaced workers following loss of jobs and the social safety net benefits available.

A list of people met during the field visit is provided in Annexure 8.2.2.

### **3.2.3. Inception Report**

The inception report was submitted in the first week of September, 2006 incorporating the findings from the first field visit. The report encompassed an overview of the coal industry in the city of Jiaozuo including the operational status of the mines, number of jobs created and retrenchments from the sector, re-employment training for the displaced workers and existing social security programmes for coal miners. The report also mentioned the existing coal sector laws and policies as well as generic environmental legislation.

PwC suggested that the Sustainable Livelihoods Approach (SLA) be used to analyze the existing livelihood status of the coal miners and their families in Jiaozuo. It was also pointed out that the SLA could be applied to identify viable options for the displaced miners. The importance of having a monitoring & evaluation framework in place to measure the socio-economic, environment and training and counseling related indicators was also mentioned.

As a way forward the following activities were earmarked for implementation for the subsequent phases of the study:

- Profiling of displaced and soon-to-be displaced workers
- Assessing the alternative employment / livelihood opportunities in the coal and non-coal sector in Jiaozuo
- Identifying specific projects for implementation
- Assessing existing social safety net provisions
- Analyzing existing policy and institutional arrangements.

### **3.2.4. Second field visit to the city of Jiaozuo**

The second field visit to Jiaozuo was undertaken between 7 & 8 November 2006. Prior to the visit two detailed questionnaires were developed and circulated. The first questionnaire targeted the officials from the Jiaozuo local government and the Jiaozuo Coal Group and aimed to obtain:

- Specific data on the number of workers poised to lose their jobs between 2006 and 2010
- Demographic profile of those workers
- Income level of the workers post retrenchment and the income protection mechanisms available
- Preferential policies already in place and ready to be rolled out
- Existing training institutions and the training programmes
- Entitlements in relation Social Security Net mechanisms
- Projects in the pipeline in Jiaozuo with a potential to absorb some of the retrenched workers.

The second questionnaire was developed and subsequently translated into Chinese to capture first hand information from coal miners (both displaced and currently working) during the focus group discussions in Jiaozuo.

Focus group discussions were conducted in two mines namely Weng Feng and Xinzhuchun with participation from 20 miners who have either lost their jobs or who expect to lose them soon. The primary aim of the discussion was to capture key issues and concerns in terms of post retrenchment income levels, health and education, family income profile, expectations from the Jiaozuo Coal Group etc. Following the discussions the miners were requested to fill up the questionnaire to capture data on their current income, education profile, job profile (present and past), savings, social safety net measures enjoyed etc.

Two separate group discussions on poverty alleviation and environmental problems, remedies and opportunities were initiated involving Jiaozuo city officials from the concerned departments, representatives from CNCA and the Jiaozuo Coal Group.

Separate discussions with the Jiaozuo city officials were also held to understand the current and future key projects included in the 11<sup>th</sup> five year plan and the potential of these projects to absorb displaced miners. A meeting with the Work and Employment Bureau of Jiaozuo was also set up to understand the various policies for providing social security to displaced miners together with their implementation mechanisms. A detailed list of the people met during the second field visit is provided in Annexure 8.2.3.

### **3.2.5. First workshop with key stakeholders**

The workshop was held in the premises of CNCA in Beijing on December 15, 2006. Mr. Zhang Jiwu, Director General of the Department of Enterprise Restructuring started the proceedings with a brief speech in which he expressed the concerns of the Chinese Government regarding the job losses of workers from resource depleted mines. Mr. Zhang commended on the efforts made by the Government to tackle the issue of job loss and emphasized on the importance given by the Government to implement laws and regulations put in place to provide an air of transparency about coal mine closures and bankruptcies. He also pointed out the specific measures adopted by the Government for miners in a higher age group and young employees of State Owned Enterprises (SOEs). These measures include the utilization of existing assets of the abandoned coal mines for the benefit of the displaced workers, transfer of public utility units previously run by the abandoned mines to the local city authorities and training programmes to help the displaced miners find re-employment.

Mr. Zhang mentioned that the new Bankruptcy Law would be rolled out in 2007 and the current practice of policy driven coal mine closures and bankruptcies would be phased out by 2008. He stressed on the importance of closely scrutinizing the current situation in the cities affected from the closure of mines like Jiaozuo. He hoped that specific projects could be recommended which would help Jiaozuo and cities similar to it to cope up with the problems of providing alternative livelihoods to displaced workers as well as improving the environmental standards in the city.

The team leader from PwC made a presentation detailing the key initial findings in terms of economic development, environment, poverty alleviation, social protection including training. He also highlighted a few case studies from the France, Germany, the United Kingdom and Japan from where lessons could be learnt and applied in the context of Jiaozuo. Initial recommendations were presented including the setting up of a dedicated Employee Resource Centre to facilitate the process of redeployment for displaced coal

mine workers to a shift from supply driven training to demand driven training mechanism were presented. The team leader also spoke in length on the proposed new projects scheduled for implementation in the 11<sup>th</sup> 5 year plan for the city of Jiaozuo and tried to provide a rationale for estimated employments for both skilled and unskilled workers in those projects.

Ms. Hu Yuhong, Deputy Director General of CNCA expressed her satisfaction on the progress of the project and opened the floor for further comments from the workshop participants. Key comments and suggestions included:

- Government should play a proactive role in the economic regeneration efforts of resource depleted cities like Jiaozuo and work hand in hand with organizations such as the Jiaozuo Coal Group
- Assess whether policy driven close mine closures and bankruptcies should be totally stopped by 2008
- Segmentation of horizontal (regional) and vertical (industrial) administration should be abolished as it has proved to be a barrier to the full utilization of available resources which might result in fostering re-employment
- Provide an assessment of the pricing regime in the coal sector and analyze the existing practices
- Highlight the role of the Jiaozuo Coal Group in relation to the miners and the city in general and explore the linkages required between the group and the Government
- Incorporate the lessons from neighboring provinces like Shanxi in the final report.

Members from the PwC team pointed out that though many of the suggestions were highly pertinent to China's unemployment problem, some were beyond the scope of the project. A consensus was achieved that only inputs from the participants which are directly relevant to the project's goals and objectives would be incorporated in the final report.

A list of participants in the first workshop is provided in Annexure 8.2.4.

## 4. Setting the Baseline

Based on interviews with the Jiaozuo Coal Group and the different departments of the Jiaozuo local government and focus group discussions with the displaced and soon-to-be displaced miners a comprehensive baseline data set was created by the PwC team. The data was gathered to:

- Establish the current situation of the miners
- Understand their marketability in the changed economic scenario of Jiaozuo according to their age and education
- Review the available social protection measures to the miners
- Identify the environmental hazards faced by the city and its inhabitants due to the closures of the mines and explore possible opportunities that may arise from the abandonment of mines etc.

### 4.1. Overview of Jiaozuo’s economy and industrial development

Jiaozuo has traditionally been a coal mining city and was often quoted in the past as the “Coal City” of China. Coal played a major role in the city’s prosperity with the earliest incidence of coal mining going back to the days when China was ruled by the Ming dynasty.

In 1949, Jiaozuo’s coal industry accounted for 82.1% of the city’s total gross industrial output value. The production of raw coal was around 5.9 million tons contributing around 66.7% of the total production of the Henan province. However, due to the depletion of coal reserves, the coal industry’s contribution to the city’s total gross industrial output value came down to 7.1% only in 1990 and by 1995 it got further reduced to 5.8%.

During the 9<sup>th</sup> five year plan, Jiaozuo’s GDP grew at an annual rate of 3.5% but it was way behind the growth experienced at both the provincial and national level (10.1% & 8.3% respectively). By the end of 2000, there were 352,700 laid-off employees and another 12,000 unemployed workers in the city. To tackle the problem of unemployment and keep pace with the economic growth of the province and the country as a whole, the local Government of Jiaozuo decided to diversify into newer sectors and promote employment opportunities in areas other than coal leveraging the city’s abundant natural resources.

The local Government’s initiative saw a reversal in the city’s performance in terms of GDP growth. During the 10<sup>th</sup> five year plan, the city experienced a growth of around 15.2% in GDP for five consecutive years. In terms of the local financial income parameter, the city rose to the 3<sup>rd</sup> position from the erstwhile 9<sup>th</sup> and in terms of total exports it moved to the 3<sup>rd</sup> position in the Henan province. Non-ferrous metal smelting and processing industry, the energy industry, the chemical industry, the auto ancillary industry and the agro based product processing industry became the new five pillars of Jiaozuo’s economy. Tourism which accounted for only 1% of the GDP in the 9<sup>th</sup> five year plan increased to 10% in the 10<sup>th</sup> five year plan and became widely recognized as a sector with immense potential. An analysis of employment generated by various sectors in Jiaozuo during the period 2003 and 2005 highlights that manufacturing activities have been consistently accounting for the largest share of employment.

**Figure 2: Employment by Sector in Jiaozuo from 2003 to 2005**

(In 10,000 persons)	2003		2004		2005	
	Number of Persons	(%)	Number of Persons	(%)	Number of Persons	(%)
<b>Total</b>	48.06	100	51.23	100	54.38	100
Agriculture ,Forestry, etc.	0.42	0.88	0.63	1.23	0.68	1.25

Industry	20.80	43.28	21.73	42.42	23.78	43.73
<b>Mining</b>	<b>4.61</b>	<b>9.58</b>	<b>3.6</b>	<b>7.03</b>	<b>3.42</b>	<b>6.29</b>
Coal mining	4.52	9.40	3.22	6.29	3.35	6.16
<b>Manufacturing</b>	<b>14.57</b>	<b>30.31</b>	<b>16.61</b>	<b>32.42</b>	<b>18.89</b>	<b>34.74</b>
Production and Distribution of Electricity, Gas and Water	1.62	3.38	1.52	2.97	1.47	2.70
Construction	1.71	3.56	1.72	3.36	1.76	3.24
Transport, Storage and Post	1.32	2.76	1.47	2.87	1.44	2.65
Information Transmission, Computer Service and Software	0.17	0.36	0.24	0.47	0.27	0.50
<b>Wholesale and Retail Trade</b>	<b>9.93</b>	<b>20.67</b>	<b>9.25</b>	<b>18.06</b>	<b>9.7</b>	<b>17.84</b>
<b>Hotel and Restaurants</b>	<b>0.27</b>	<b>0.56</b>	<b>2.45</b>	<b>4.78</b>	<b>2.54</b>	<b>4.67</b>
Financial Intermediation	1.03	2.14	0.99	1.93	0.99	1.82
Real Estate	0.12	0.25	0.17	0.33	0.25	0.46
Leasing and Business Services	0.29	0.60	0.42	0.82	0.56	1.03
Scientific Research, Technical Services, and Geological Prospecting	0.18	0.37	0.18	0.35	0.18	0.33
Management of Water Conservancy, Environment and Public Facilities	0.54	1.12	0.56	1.09	0.58	1.07
Services to Households and Other Services	1.74	3.62	1.58	3.08	1.67	3.07
<b>Education</b>	<b>3.80</b>	<b>7.91</b>	<b>3.79</b>	<b>7.40</b>	<b>3.83</b>	<b>7.04</b>
Health, Social Securities and Social Welfare	1.53	3.18	1.59	3.10	1.56	2.87

*Source: Computed on the basis of data provided by the Jiaozuo Statistics Bureau*

The importance of the coal sector and its contribution to the economy of Jiaozuo has significantly decreased in the last decade or so. The trend can be seen in the number of people employed by the industry too. Between the period 1990 and 2005, the number of people employed by the coal industry has been reduced sharply from an estimated 62200 people in 1990 to 33500 people in 2005 only.

**Figure 3: Employment by the Coal Sector in Jiaozuo from 1990 to 2005**

Year	1990	1995	2000	2001	2002	2003	2004	2005
Number of persons (in 10000 persons)	6.22	5.94	4.90	4.52	4.68	4.52	3.22	3.35

*Source: Computed on the basis of data provided by the Jiaozuo Statistics Bureau*

However, coal is still critical in China's rising energy demand and its ability to meet it. In the recent past, China has taken all necessary measures to ensure the sustainability of the existing production base and stimulate new investments to add to the existing capacity levels in the coal industry. The 11<sup>th</sup> five year plan for Jiaozuo too recognizes coal's importance to the city. The realization that the city still owns relatively rich potential coal resources has led to plans to construct new mines to meet the demands from the five principal pillar industries, especially power.

## 4.2. Coal Sector Restructuring in Jiaozuo

In Jiaozuo, the total confirmed capacity of coal production in 2005 was 6.06 million tons. By 2010, the planned production is expected to be around 15.40 million tons per year while by 2020 it is expected to be around 20 million tons. However, like other mining cities in China, Jiaozuo was plagued by the problem of small illegal economically unviable mines, responsible for disorderly excavation and excessive exploitation of city's remaining reserves of coal. To mitigate the problems with the small illegal mines, the Jiaozuo Coal Industry Group Corporation Limited (JCIG, referred to as the Jiaozuo Coal Group, hereafter) was established in 1999 in line with the central Government's policy to close down small illegal mines and consolidate the legal mines into large state owned conglomerates.

The Jiaozuo Coal Group was born out of its predecessors, the Jiaozuo Mine Affairs Bureau and the Jiaozuo Mining Bureau. Following the formation of the Jiaozuo Coal Group, a number of TVCMs have been closed in Jiaozuo and of the 37 small operational mines, 33 have already been shut down with another 2 poised to be closed soon. The remaining 2 mines have been integrated into the mines operated by the Jiaozuo Coal Group. The total output of the coal group during the period 2001 & 2005 was 3.5 million tons, 3.65 million tons, 3.93 million tons, 5.17 million tons and 6.06 million tons respectively. In 2005, the group accounted for 0.26% of the total coal output in the country and the gross industrial output value of 3.65 billion RMB translating to 2.8% of the city's GDP.

The Jiaozuo Coal Group in the recent years has evolved into an enterprise that specializes in coal but which has diversified into newer areas like power generation, cement, calcium carbide, ferro alloys, caustic alkali, aluminium products, building materials etc. By 2005 the group had reached an annual production capacity of 255 MW of electricity generation, 750,000 tons of cement, 20,000 tons of calcium carbide, 15,000 tons of ferro alloys, 27,000 tons of caustic alkali and 3,000 tons of aluminium profile products.

During the data collection exercise, it proved extremely difficult to gather any data on the workers of the TVCMs as the miners were primarily migrant rural labourers for whom the local Government had no responsibility in terms of resettlements. Interactions with the concerned officials did reveal however, that these miners had extremely limited skill sets and many had migrated from farming to enhance their dwindling income from agriculture. Following the loss of their jobs, it is anticipated that most of them have become involved in informal economic activities which pay a lot less than the salaries they earned as miners.

A lot of data was collected on the companies under the supervision of the Jiaozuo Coal Group and its workers. The data revealed that, although the output of coal in the years between 2001 & 2005 experienced a continuous increase, the number of workers employed by the group decreased every year. In 2001, the group had 42,713 people in its payrolls but by 2005 the number had gone down to 35,151 only. Of that,

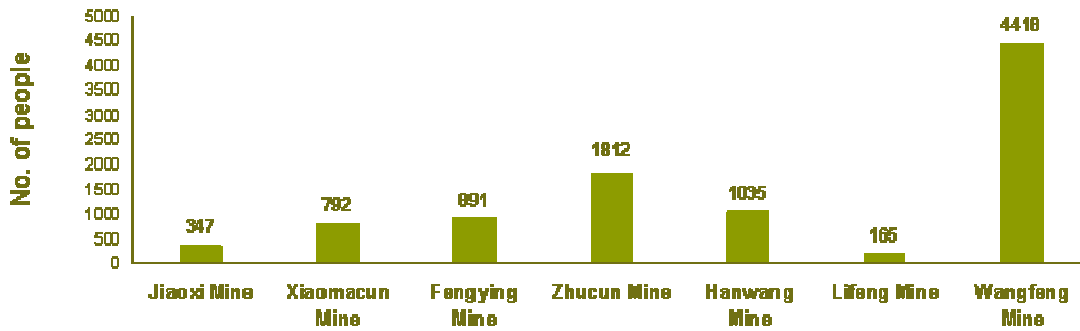
65.4% of all workers are related to coal mining activities while the remaining 34.6% were engaged in other businesses operated by the group.

Six coal mines have already been declared bankrupt with the Wangfeng mine scheduled to file for bankruptcy between the period 2006 and 2010. The total number of miners already displaced is 10,432 while the estimated number of miners to be displaced by 2010 is around 9460.

A further breakdown of the estimated job losses against the individual seven mines already and to be bankrupt by 2010 is as follows:

**Figure 4: Coal Miner Retrenchments**

**Coal miner retrenchments: Jiaozuo**



Source: Jiaozuo Coal Group

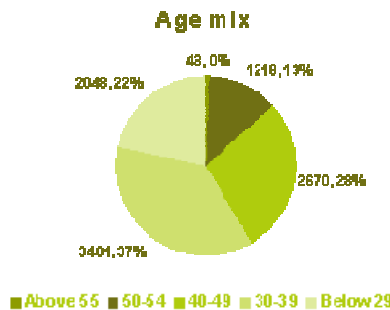
**4.3. Socio-economic profile of the displaced miners**

The following two sub sections analyze in brief the age structure and the education levels of the displaced miners.

**4.3.1. Age Mix**

The total number of miners expected to be displaced by 2010 is around 9460. Workers in the age group of 50 years and above constitute about 13% of the workforce while 28% or 2670 workers fall in the age group of 40 – 49 years. The biggest section of the workforce is aged between 30 – 39 accounting for 37% followed by workers in the age group of 29 and below, the total number of whom is 2048 (22%).

**Figure 5: Age Mix of Displaced Workers**



Source: Jiaozuo Coal Group

A substantial proportion of the workforce is relatively young and around 5,500 (59%) of them are below 40. The focus group discussions in Jiaozuo with miners in the same age group revealed that the workers are likely to experience the following:

- Limited income-generation capacity likely for entire families owing to children not yet attaining working age and parents having retired
- Average family size of four to five members, including aged parents who need to be supported
- Significantly adverse socio-economic impact likely in terms of health and education in case of inadequate social protection and poor rate of successful deployment in alternative livelihoods.

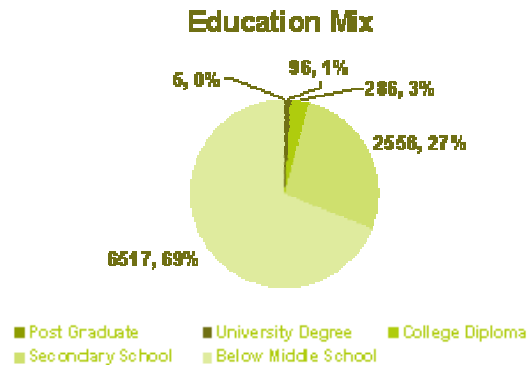
On the other hand, the cumulative number of workers in the age group of 40 and above stands at 3960 (41%). The concerns voiced by them during the focused group discussions revolved around:

- Apprehensions about getting re-deployed after being laid off due to their age and limited skill sets
- Fear of one of their family members falling critically ill and the difficulty they expect in meeting the associated expenses
- Fear of their children dropping out of school and college owing to the high fees.

### 4.3.2. Education Mix

A majority of the miners (6517, 69%) have only 9 years of formal education which in the Chinese context translates to six years of primary education and three years in the junior middle school. A miniscule portion of the miners have attended university (96, 1%) while only five have post graduate degrees. 2556 (27%) miners have attended secondary school while another 286 (3%) have college diplomas. The data collected clearly highlights that the skill sets of the miners are extremely limited and most have work experience in activities like coal digging, supportive functions, fire-gunning and coal cutting. Some of them have undergone training courses but mainly in the area of mine safety which are unlikely to be of any relevance in non-coal sectors.

**Figure 6: Education Mix of Displaced Workers**



Source: Jiaozuo Coal Group

It is anticipated that getting re-deployed in sectors and industries primarily reliant on automated processes like power generation and cement would be difficult owing to factors such as:

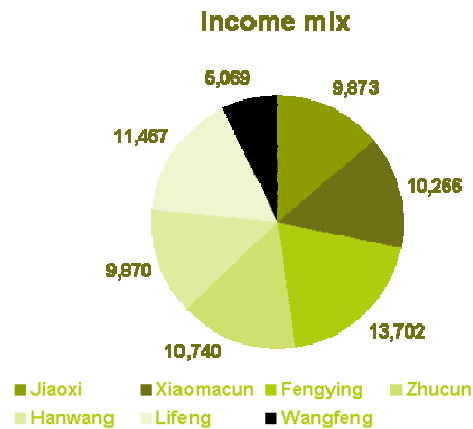
- Basic education and limited skills due to the lack of vocational and technical training is likely to prove a major impediment for many to operate process control equipments in the newer sectors
- Training is likely to yield optimum results for miners in the lower age group i.e. <40 years coupled with education levels of at least secondary school and above.

### 4.3.3. Income mix

Coal miners' wages in China have traditionally been lower than the industry average. However, the late 1990s saw the coal mining industry prosper owing to the acute shortage of energy supply in the country and the demand for coal reaching new heights. The wages of coal miners were raised to an extent but they were still lower than the industry average.

The average wage (2005) of the miners still at work in the six already bankrupt coal mines and the Wangfeng mine scheduled to go for bankruptcy was around RMB 10,000 annually translating to just over 800 RMB per month. Interviews with the Jiaozuo Coal Group and focus group discussions with the miners categorically pointed out that the economic situation of the miners revolve around their job status and the performance of their mines. The salary of a miner working in a resource depleted mine such as Wangfeng will be considerably less than that of a colleague working in a mine which is still operational.

**Figure 7: Income Mix of Displaced Workers**



Source: Jiaozuo Coal Group

It is anticipated that most of the miners still at work would lose their jobs in the next five years resulting in a substantial drop of income for them. Focus group discussions with the displaced and the likely to be displaced miners revealed that:

- Wages from the mines contribute to around 70 – 75% of the family income of miners with a job
- Limited deposits in banks and other financial institutions for both displaced and likely to be displaced miners
- Likely to be completely dependant on the social protection entitlements following job loss.

### 4.4. Existing training facilities

Training facilities in the city of Jiaozuo are offered at two different levels which are run and administered by the local Government and the Jiaozuo Coal Group. According to the data received from the Employment Bureau of Jiaozuo, a plan was laid in 2003 to train 20,000 people each year for three consecutive years. By the end of 2005, 63541 people were trained, surpassing the target of training 60,000 people. Training was imparted by six technician schools and eight working centres. The programmes offered ranged from computer skills to cooking, marketing and hair dressing as well as technical courses in mechanical, chemical, transportation etc. Additionally there are around fifty training centres which offer basic technical training and there are twenty one skill certification institutes which validate the skill levels of the trainees.

The Jiaozuo Coal Group's training institutes on the other hand trained 630 registered trainees between 2003 and 2005. There are two institutes namely the Re-employment Training Centre and the Chinese Cooking Assessment Institute. About 500 trainees found jobs after attending the training programme. The courses offered are similar those offered by the institutes run by the local Government with focus on Chinese cooking, computer operation and electrical maintenance.

## 4.5. Existing social protection policies

Over the past decades, the Chinese Government has introduced a number of changes to the old social security system practiced till the economic reforms were started in the country in 1978. The changes were made to address the issues of massive lay offs from SOEs etc. A whitepaper entitled "China's Social Security and Its Policy" was published in 2004 and the Government spared no efforts to continue with its "putting people first" principle. A lot of importance was given on the social insurance component including old age insurance, unemployment insurance, minimum living standard scheme (MLSS), medical insurance, work-related injury insurance and maternity insurance.

A lot of flexibility is provided to the provinces, autonomous regions and municipalities which come under the purview of the Central Government to make further provisions in relation to the social insurance components to reach out to more people in need keeping in mind the unique requirements of the localities and the regions.

### 4.5.1. Old Age Insurance

Statistics prove that China is fast becoming an ageing society with the number of people aged over sixty increasing very rapidly. The pressure on the Central and the Provincial Governments to provide the aged community with a quality life post retirement is on the rise. The pressure has been further intensified by the large number of displaced workers in the age group of fifty and made redundant from the SOEs following the economic restructuring.

The salient points of the current old age insurance system rolled out by the Central Government in China include:

- All SOE employees are entitled to a basic old age pension paid every month post retirement (60 in the case of male workers, 50 for female workers and 55 for female cadres), provided premiums were duly paid for a minimum period of fifteen years
- The pension is comprised of two parts namely the base pension and the pension from the personal account
- The base pension is around 20% of the employee's average monthly wage in the area in the previous year
- Pension from the personal account is 1/120 of the total accumulated sum in the personal account, with 11% of the employee's wage being deposited in the personal account every month prior to retirement

In the city of Jiaozuo, workers who have worked for 30 years can opt for early retirement and thus become eligible to receive the monthly pension. Retrenched workers become eligible for retirement five years earlier than the normal retirement age while it is fifteen years for workers involved in high risk jobs. The other key old age insurance provisions applicable to the displaced workers of Jiaozuo include:

- The Jiaozuo Coal Group pays the old age insurance premium for workers who have maintained a relationship with the company till they reach their retirement age
- Unemployed miners in the age group of 40 – 50, who have terminated their relationships with the Jiaozuo Coal Group are entitled to a subsidy of 30% - 50% on their premiums
- The total number of miners currently being supported under the scheme is estimated at 30,480 with an average monthly pension being RMB 869 on an average.

#### 4.5.2. Basic Living Allowance

The “Three Guarantees System” was established and put into operation by the Chinese Government since 1998. The first component of the system is the basic livelihood guarantee for laid-off persons from SOEs. One of the primary aims for this allowance is to minimize the workers’ shock of losing their jobs and the realization that the conventional “iron rice bowl” concept which stood for lifetime employment is no longer applicable in the changed economic context of the country. The basic points covered under the basic living allowance are:

- Retrenched workers who have registered themselves at the re-employment service centres set up by the enterprise receive the allowance
- The allowance is slightly higher than the unemployment insurance payment for a particular locality and is payable for a period of three years

In the city of Jiaozuo, the displaced miners are also entitled to the living allowance. The baseline data points out that:

- The monthly living allowance continues for the first three years provided they have maintained their working relationship with the Jiaozuo Coal Group
- The monthly allowance ranges between RMB 180 – 200 per month
- The Jiaozuo Coal Group does not have details on the number of retrenched miners being supported under this scheme
- Workers are free to sever their relationship with the Jiaozuo Coal Group becoming eligible for the one time payment of around RMB 20,000 and around 2400 have received the payment up to June 2006.

#### 4.5.3. Unemployment Insurance

The unemployment insurance system constitutes the second guarantee under the “Three Guarantees” system. The laid off workers become eligible for unemployment insurance payments if they fail to find a job in the first three years following retrenchment during which they receive the basic living allowance. The key points under the system could be summarized as:

- Retrenched workers who did not terminate their employment voluntarily and are unable to find a new job within three years become eligible
- The employee must have contributed one percent of his/her wages as a premium for a minimum period of one year to be eligible. Further, the employee needs to register himself / herself with the local Government and be prepared for redeployment
- The enterprise pays two percent of the total wage bill as unemployment insurance premium
- Unemployed insurance allowance is decided by the local Government but is typically lower than the minimum wage levels
- Employees who have paid their premiums for ten years are entitled to insurance support for up to 24 months, while those who have paid premiums for 5-10 years and 1-5 years become eligible for support up to 18 months and 12 months respectively
- An unemployed person is entitled to receive medical subsidies if he or she falls ill during the period when he or she is still receiving the unemployment insurance
- An unemployed person may receive vocational training while receiving the allowance.

In Jiaozuo, the Coal Group has no details on the number of displaced being supported under the unemployment insurance scheme. However, interviews with the officials during the field visits pointed out that according to the “Regulation of the Henan Province on Unemployment Insurance”, displaced workers receive around 320 RMB which is 80% of the minimum local salary of the city. In Jiaozuo, the minimum salary at the moment has been set at 400 RMB.

#### 4.5.4. MLSS

The third pillar of the “Three Guarantees” system is the Minimum Living Standard Scheme. The scheme is meant for people whose family’s per capita income is below the local minimum living standard. In the city of Jiaozuo, the baseline data indicates the following:

- Monthly allowance of RMB 69 per member to families with a monthly income below RMB 165 as of April 1, 2006
- Payment is made through the Social Security bureau under the purview of the Ministry of Labour
- The allowance is payable to workers subject to assessment of the various parameters such as whether any compensation was received at the time of retrenchment, existence of alternative livelihood sources, ownership of consumer durables etc
- Only 85 of the 2,445 qualified retrenched coal miners’ families received support under the scheme in 2005.

#### 4.5.5. Medical Insurance

China’s basic medical insurance system is primarily based on the “Decision on Establishing a Basic Medical Insurance System for Urban Employees” introduced by the Chinese Government in 1998. Key characteristics of the medical insurance system include:

- Both current employees and retirees are covered
- The funds for the medical insurance are primarily comprised of premiums paid by both employers and employees with the employers contributing about six percent of the total wage bill while the employees contribution is around two percent of their wages
- Retirees are exempted from paying the premiums and expenses related to medicines and treatment are considerably lower than their counterparts who are still in service
- Individuals’ premiums and thirty percent of the premiums paid by the employers go to the personal account while the remaining seventy percent getting accrued into the social pool programme funds
- Outpatient treatment fees which are typically of smaller denominations are paid from the personal account with the hospitalization expenses (larger amounts) being borne out of the social pool funds
- On an average the minimum payment is about ten percent of the average annual wage of the employees while the maximum payment is around four times the average annual local wages
- Individuals need to bear a certain proportion of the expenses with the balance being met through the social pool funds.

In Jiaozuo, the Coal Group pays a portion of the premium for the retrenched workers. The family members of the displaced workers are not covered by the insurance and one of the key concerns voiced during the focused group discussions with miners was the envisaged difficulty in meeting expenses in the event of their family members falling prey to a critical disease.

#### 4.5.6. Work Related Injuries Insurance

January 2004 saw the launch of the “Regulations on Insurance for Work-Related Injuries”, the primary objective of which is to provide the workers especially the ones involved in high risk jobs with a much needed support following the unfortunate event of someone getting injured in an accident. The highlights of the Insurance system are:

- All enterprises must participate in the work related injury insurance which in principle adopts the “no fault compensation”
- The individual employees are spared from paying any premiums and are entitled to benefits encompassing medical expenditures for work related injuries, injury and disability subsidy,

medical allowance and nursing fee depending on the degree of loss of ability for work, pension for the upkeep of the family members in case of death resulting from an accident occurred during work

- Local Government is entrusted with the responsibility of determining the premium rates after analyzing the level of risk associated with various sectors.

According to the “Interim measures of Henan Province for the implementation of regulation on accident insurance” the Jiaozuo Coal Group is responsible to bear the costs related to accident insurance for both existing and retrenched workers.

#### 4.5.7. Maternity Insurance

The maternity insurance system was put into force by the Chinese Government in 1998 to safeguard the interests of the women workers. The system comprises of the following regulations:

- Employers must pay one percent of the total wage bill towards the maternity insurance while the individual female workers are totally exempted from paying any premiums
- Childbirth allowance is provided to the employees for a ninety day period
- Female employees are entitled to reimbursements against the medical expenses.

The Jiaozuo Coal group at the moment has no system under which female retrenched workers can enjoy the benefits of maternity insurance.

#### 4.5.8. Education for children

Over the past two decades, China has made rapid progress towards achieving the key social development goals following the global benchmark of the Millennium Development Goals (MDGs) with a special emphasis on universal nine years compulsory education and eliminating adult illiteracy. Back in 1985, the Central Committee of the Chinese Communist Party issued the "Decision on the Reform of the Educational Structure" making the local Governments accountable for basic education. The "Compulsory Education Law of the People's Republic of China" was consequently announced in 1986 to put basic education in the country on a firm legal basis. The key points in the 1986 Law included:

- The state shall adopt a system of nine years of compulsory education comprising two stages namely primary school and junior school education
- All children aged six years will enroll themselves in school and receive compulsory education
- The state will not charge tuition fees for students receiving compulsory education
- The State Council and the local Governments are responsible for raising funds for the operating expenses related to the implementation of compulsory education
- The state shall adopt a vocational education system and an adult education system.

However, a recent report<sup>2</sup> published jointly by the United Nations Children’s Fund (UNICEF) and the Office of the National Working Committee on Children and Women under the Working Council has indicated that due to the decentralization of the education sector, local governments are often forced to bear the associated expenditure despite their limited financial capacities. In 2003, a break down of the total expenditure at the central and sub-national level shows that the while only 11.6% of the total expenditure on education was accounted for at the central level, the remaining 88.4% was at a provincial / local level. In reality the nine years of free compulsory education has not become universal across the country though rapid progress in achieving the target has been achieved in recent years. Jiaozuo’s children are expected to enjoy the nine year free education from 2007 onwards.

<sup>2</sup> Source: *China’s Budget System and the Financing of Education and Health Services for Children*

The report also highlighted that the net enrolment ratio for primary education was 98.9% in 2004 up from 97.8% in 1990. The gross enrolment ratio in the junior middle school segment also saw an increase from 66% in 1990 to 94% in 2004. The senior middle school enrolments saw an increase from 26% in 1992 to 48% in 2004 but as the figure suggests, this still remains the main impediment to the development of education in the country. It is believed that many children from the rural areas and pockets of urban areas with concentrations of laid off workers from SOEs and migrants do not make it to this stage. This was further validated by the education mix of the miners in Jiaozuo. Almost 69% of the miners to be displaced by 2010 did not make it to the secondary schools and during the focus group discussions one of the key concerns that was voiced time and again was the difficulty that the miners anticipated in sending their children to high school and college in lieu of the high fees which is around 100 RMB and 500 RMB per month respectively.

#### 4.6. Assessment of socio-economic protection levels

Interviews with officials of the Jiaozuo Coal Group revealed that for miners who have lost their jobs, income can be as low as 40 RMB per month with the average income being RMB 120 approximately making them totally dependent on the income protection options available. The displaced workers in the city of Jiaozuo are eligible for the Minimum Living Standard Scheme (MLSS) under which workers receive a monthly allowance of RMB 69 per person (828 RMB annually and 2484 RMB for a family of three) provided their families' income falls under RMB 165 per month (RMB 1980 annually).

Other income protection for the displaced miners maintaining a relationship with their mine companies includes the living allowance from the Jiaozuo Coal group which ranges between RMB 180 to RMB 200 per month. An analysis of the responses of the miners via the questionnaire circulated during the second field visit to Jiaozuo against their savings, deposits in banks etc revealed that on an average the miners have savings between RMB 20,000 to RMB 30,000 on an average which translates to an annual income of around RMB 1500 annually.

Analysis based on the findings states that the maximum level of income protection for the displaced workers is estimated at around 35% only of the original income. The problem is likely to be aggravated further if a family member becomes critically ill or someone from the family is ready to join college, the fees of which is relatively high when seen against the current income of the miners. It is assumed that the

#### Reemployment measures following mine closures in Japan

Japan's coal mining industry experienced a significant growth during the Korean War owing to massive demands for coal. However, the growth could not be sustained due to a fall in demand from the domestic market. Since 1956, 915 mines have been closed down making more than 202,000 coal mine workers redundant. Reemployment measures to help the redundant miners have included:

- Assist mine workers to change their jobs
- Establish vocational training schools and conduct training free of charge to willing workers
- Extend the coverage of the jobless under the unemployment insurance scheme to five years
- Provide preferential treatment to companies that hire redundant mine workers
- Provide employment to former miners in any rehabilitation or development project in the deprived mine areas
- Introduce the Black and Green Record books; the black book was for miners employed by mining companies for more than a year while the green book documented coal mine personnel who were not eligible for the black book
- Provide allowance to the coal mine job leavers
  - Under the unemployment insurance, pay the base allowance (50 – 80% of the daily wage before losing the job) for a maximum of 300 days starting from the next of job termination and extend it for another 90 days if the workers were still unemployed
  - Pay workers still unemployed even after the extension of 90 days with an employment promotion allowance till the records book expires i.e. 3 years for the black book and 1 year for the green book following job loss

*Source: Towards a sustainable coal sector in China (2004) – A joint UNDP / World bank report*

high expenses associated with college education and medical emergencies would have a severe adverse impact on the socio-economic status of the family.

This section of the report attempts to analyze the vulnerability of miners from various age groups from an economic perspective following their loss of jobs. The displaced miners have been classified in four age groups namely 55 and above, 50-54 years, 40-49 years and 30-39 years and below 30 years. The assessment is made through figure 10 below and it tries to highlight the different set of problems envisaged to be faced by the various age groups in terms of either low levels of income protection or downward fluctuations in incomes and the corresponding support they would require from the existing social protection mechanisms like Basic Living Allowance (BLA), Unemployment Insurance (UI), MLSS and Old Age Insurance (OAI).

**Figure 8: Vulnerability of miners following job losses**

Age Group	Basic Living Allowance (BLA)	Unemployment Insurance (UI)	MLSS	Old Age Insurance (OAI)
55 and above				Both male and female retrenched workers are eligible
50 – 54 years	Average allowance of 180 – 200 per month for 3 years, translating to income protection of around 24%, excluding savings	Average allowance of 170 – 180 for up to 2 years, resulting in income protection of around 20%, excluding savings	Not required for miners in this age group, barring those who did not contribute their share of premium	Both male and female retrenched workers involved in high risk jobs are eligible
40 – 49 years	Average allowance of RMB 180 – 200 per month for 3 years, an income protection of around 24%, excluding savings	Average allowance of RMB 170 – 180 for up to 2 years, an income protection of around 20% , excluding savings	All male retrenched workers in the age group not involved in high risk jobs would require support post BLA and UI but may not be eligible following inspection	Female retrenched workers in the age group of 40-49 and female cadres between 45 – 49 years are eligible post BLA and UI  All male retrenched workers in high risk jobs in this age group are eligible post BLA and / UI
30 – 39 years and below 30 years	Average allowance of RMB 180-200 per month for 3 years, which translates to income protection of around 24%, excluding savings	Average allowance of RMB 170 – 180 for up to 2 years, which results in income protection of around 20%, excluding savings	All retrenched workers would require support post BLA and UI but may not be eligible based on existing approval procedures	None of the retrenched workers in this age group would be eligible even post BLA and UI support

From the analysis, it is quite apparent that the most vulnerable groups of retrenched workers include:

- Male and female retrenched workers in the age group up to 39 years in the event they do not get re-employed within 5 years during which time they are entitled to the basic living allowance for the first three years followed by support for another 2 years under the unemployment insurance scheme. It is not certain that these workers would automatically qualify for the MLSS allowance following the BLA and UI years given the current stringent eligibility criteria which may disbar many of them from receiving the MLSS support. Their problems are further compounded by limited or no scope for augmentation of family incomes as their children would at best have reached the age for attending college. The relatively high college fees are quite likely to have an adverse effect on their savings too. However there is a ray of hope as retrenched workers in this age group are likely to be receptive to re-training and re-skilling thereby increasing their chances of getting re-deployed.
- All male retrenched unskilled workers in the age group of 40-49 years with below middle school education and not involved in high risk jobs in the event they are not re-employed within 5 years since retrenchment i.e. the period during which they are covered by the BLA and UI support. Given their age and limited skill sets, retraining and formal employment in the organized sector is likely to be extremely difficult.

#### 4.7. Existing environment regeneration policies

China has seen spectacular growth on the economic front in recent times. Unfortunately, the rapid industrialization has taken its toll on the environment in terms of higher water, air and surface pollution. The Chinese Government has tried to respond to the problem and have come up with a number of laws to protect the environment. Key laws introduced by the Government include the Environment Protection Law, Air Pollution Prevention and Treat Law, Water Pollution Prevention and Treatment Law, Environmental Impact Assessment Law, Clean Production Promotion Law etc.

The Environment Protection Law (1989) states that:

- All units and individuals are obligated to protect the environment and have the right to report and file charges against other units and individuals involved in activities that cause damage to the environment and increase pollution
- The concerned departments for the administration of environment protection under the State Council shall conduct supervisory activities of environment protection work and establish national standards for environment quality; local governments can establish their own local standards for items not covered in the national standards for environment quality
- A monitoring system would be established following the formulation of monitoring norms and in conjunction with the relevant departments, a monitoring network is to be set up to strengthen the management of environmental monitoring
- Units that cause environmental pollution needs to incorporate environmental plans in their operating strategy and adopt effective measures to prevent and control the pollution caused to the environment by waste gas, waste water, waste residues, noise, dust, electromagnetic radiation etc generated during the course of production and other activities.

The Clean Production Promotion Law (2002) on the other hand stresses on:

- The utilization of clean energy and raw materials, the sustainable implementation of advanced processes, technologies and equipment, improvement of management and comprehensive utilization of resources to reduce pollution at source. The law also highlights the importance of enhancing the rates of resource utilization efficiency on one hand and reducing pollution generation on the other to reduce harm caused to the health of human beings and the environment.

- The nation shall implement a time limited system for the elimination of obsolete production technologies, processes, equipments and products which wastes natural resources and are hazardous to the environment
- Mining exploration and exploitation activities shall adopt methods and technologies geared towards reasonable utilization of resources, environmental protection and pollution control and prevention
- Any enterprise involved with toxic and hazardous materials both in terms of production or discharge shall periodically conduct cleaner production audits and report the results to the relevant administration department for environmental protection
- Units involved in producing products from wastes and materials reclaimed from wastes will be entitled to a reduction and in cases exemption of value added tax in accordance with the relevant national regulations.

Coal mines' contribution to the environmental degradation is quite substantial as methane and other hydrocarbons are released during the extraction process. At the same time, coal mining has detrimental effects on the water resources in the mining areas and pollutes the land with mine waste leading to subsidence of the surface. Along with the key laws mentioned earlier, specific coal mining related laws have been introduced.

The Coal Law introduced in 1996 tried to tackle the problem and clearly stated the following:

- Anyone involved in the process of exploiting and utilizing coal resources would need to abide by the laws and regulations governing environmental protection, prevent and control pollution and other public hazards, and protect the ecological environment
- Coal mines would have to be closed or abandoned in accordance with the relevant laws and regulations as well as the rules of the department in charge of the coal industry under the State Council
- Establishment of new coal mines need to confirm to the requirements laid down in relation to safety measures in production and environmental protection.

There are many coal mines in China with almost depleted reserves and hardly any potential for profitability. The problem is compounded by the fact that the coal that is extracted has high ash and sulfur content which have serious implications on the environment. In 1999, the State Council came up with the directive that coal mines with the following features would be closed:

- Remaining reserve that would be exhausted in five years
- Ash content higher than forty percent and / or sulfur content higher than three percent
- Financially unviable and have been operating unprofitably for many years with little scope for improvement.

The State Council in 1989 in accordance with the regulation "Provisional Management Means for Environmental Protection of the Coal Industry" (former Ministry of Coal Industry, 1994) also stated that the mines that have caused damage to the land are responsible for reclamation for sustainable re-use of the same land. The mines have the option of conducting the reclamation exercise on their own or via contractors appointed by them. However, in reality, success in reclamation has been limited chiefly due to the lack of finance.

In recent times, the Chinese Government has been stressing a lot of emphasis on the Green Development model to ensure that environmental standards are improved around the country. The China State Council in the circular "decisions on fulfilling scientific development and strengthening environmental protection" has stated that success in environmental protection would be considered as a key parameter in the appraisal system of the officials of local Governments. Some of the measures introduced to evaluate the local officials' performance in relation to environment include:

- Provincial Governments would sign the “obligation agreement on environmental quality management” with the local Governments to formulate the performance parameters on environmental improvement
- Environmental quality indicators would be integrated in the performance appraisal system of local Government officials
- If the officials fail to meet perform satisfactorily against the agreed environmental indicators, they would not get promoted.

#### 4.7.1. Environmental baseline in Jiaozuo and opportunities

Decades of coal mining activities left the Jiaozuo city with a series of acute environmental problems. Pollution levels were high and the vegetation of the Taihang Mountains was greatly damaged. Over excavation of the mines resulted in sinking of the surface in pockets of Zhong Zhan district. In 2002, production of industrial solid waste in the city was 4.24 million tones and comprised mine tailing, coal ash, slag and gangue. Water pollution in the city was caused chiefly by Chemical Oxygen Demand (COD), amino-nitrogen and volatile hydroxybenzene. In 2002, the load discharge from these three pollutants was 55,588 tons, 9,826 tons and 19.4 tons respectively. Correspondingly, the three pollutants contributed to equivalent standard pollution load ratio of 16.8%, 79.4% and 23.5%. Air pollution too had reached alarming levels due to high densities of sulphur dioxide (SO<sub>2</sub>) and Suspended Particulate Matter (SPM) such as soot and industrial powders.

An analysis of the relevant environmental statistics obtained from the Jiaozuo Statistics Bureau suggests that the city’s efforts at preventing and controlling pollution have been rather weak leading to: (a) lower levels of efficiency in resource utilization and (b) higher levels of resource wastage.

For instance, in 2002, the Chemical Oxygen Demand (COD) discharge for production of 10,000 RMB of GDP was 41.42 Kg, which was 2.05 times higher than the national average. Similarly, the discharge of amino-nitrogen, stockpiles of industrial solid wastes and generation of industrial particulate matter for production on 10,000 RMB of GDP were 5.5, 1.2 and 1.9 times higher than the national average.

The statistics also suggest that the levels of efficiency in resource utilization in Jiaozuo are also lower than the national average. The following figure illustrates the impact of discharge of a unit of different environmental pollutants on the GDP production in Jiaozuo and compares the same with the national averages.

**Figure 9: Comparison of the Resource Utilization Efficiency in Jiaozuo with the National Average**

Unit Environmental Load	GDP Production in Jiaozuo (Yuan)	GDP Production (Yuan) - National Average	Ratio of Jiaozuo’s GDP Production to the National GDP Production for One Unit of Environmental Load Discharge (%)
COD	369	748	49.3
SO <sub>2</sub>	430	531	81
PM	531	1011	52.5

*Source: Jiaozuo Statistics Bureau*

The Jiaozuo local Government has tried to respond to the problem and has tried to strengthen the local environment protection bureaus (EPBs) under the State Environmental Protection Administration (SEPA) to ensure enforcement and monitoring compliance with all relevant laws and regulations. The local Government has also issued a number of directives to improve the environmental standards of the city. Some of the key policies that have been issued at the local level include:

- Implementation plan for environmental renovation and treatment of Jiaozuo city
- Layout and plan for the treatment and comprehensive utilization of solid waste residues

- Environmental protection and treatment plan for mine areas in Jiaozuo
- Development plan of recycling economy of Jiaozuo city etc.

Based on an analysis of mine closure experiences in China and other countries, projects aimed at environmental regeneration can also be used to provide employment opportunities. Some representative areas which may be explored further have been presented below.

**Figure 10: Environmental impact of mine closure and associate remedies and opportunities**

Impact	Remedies and Opportunities
<p>Methane release during extraction as well as post mine closure, albeit at a decreasing rate</p> <ul style="list-style-type: none"> <li>– Methane as a global warming agent</li> </ul>	<p>High gas content and saturation levels in coal mine methane (CMM)</p> <ul style="list-style-type: none"> <li>– Meeting gas supply requirements of industries and residents through a network of gas holders, transmission and distribution pipelines as well as generating power through CMM</li> </ul>
<p>High accumulation of solid waste at the closed mines</p>	<p>Coal gangue constitutes a significant portion of coal mining waste</p> <ul style="list-style-type: none"> <li>– Coal gangue based power generation plant proposed for meeting energy requirements, tackling solid waste levels and generating employment</li> <li>– Using coal ash for making bricks used as building material</li> </ul>
<p>Over excavation leading to ground subsidence and lack of cultivation opportunities</p> <ul style="list-style-type: none"> <li>– Maximum impact estimated in the village of Zhu Chun, which reportedly has the best soil in the Zhong Zhan district</li> </ul>	<p>Project proposed by the Jiaozuo City Government for comprehensive treatment and reclamation of land</p> <ul style="list-style-type: none"> <li>– Total treated land area estimated at 82 sq.km., involving movement of soil and stones of around 60 million cu.m</li> <li>– Promotion of eco-tourism projects leveraging the attractive landscape of the city.</li> </ul>

## 5. Redeployment Options and Challenges

Based on an analysis of the information collected through secondary research and interactions with concerned officials and selected miners, potential alternate livelihood opportunities have been grouped into the following categories for purposes of assessment:

- Proposed Jiaozuo Coal Group projects
- Other projects in Jiaozuo proposed under the 11th five year plan
- New projects in Henan and other neighboring provinces.

This section of the report also highlights the increasing importance of tourism in the context of Jiaozuo's local economic development as well as the role of foreign direct investment. A supply side analysis of the incremental employable population in the city as against the estimated manning requirements from the projects expected to be implemented in the next five years has also been included.

### 5.1. Proposed Jiaozuo Coal Group projects

The Jiaozuo Coal group during the 11th five year plan intends to implement eight new projects in both the coal and non-coal sector. The group is optimistic of redeploying many of its retrenched workers through the proposed new projects.

The four coal projects to be implemented from 2006 to 2010 are expected to redeploy around 3,956 people. The Coal group is aware of the possibility of having to retrain many of the retrenched workers to fit the desired profiles in the new projects but is quite optimistic that the existing training institutes run by the group in the city of Jiaozuo will serve this purpose.

Figure 11 provides details on the four coal sector projects to be implemented and the expected number of retrenched workers to be re-deployed against the individual mines.

**Figure 11: Proposed Coal Sector Projects**

Name of the Project	Approximate number of retrenched miners who might be re-deployed
Zhao Gu Mine No.1	1081
Zhao Gu Mine No.2	1075
Encun Mine	1173
New River Mine	627

*Source: Jiaozuo Coal Group*

Additionally during the field visit to the Xinzhuchun coal mine, it was pointed out that around 300 new positions are likely to be created in the mine in the next few years. The management of the mine hopes to re-deploy around one hundred displaced workers in the next few years.

In line with its diversification plans for entering into non-coal sectors, the Jiaozuo Coal Group proposes to implement four new projects in water supply, new materials, fly ash bricks and iron and steel. Figure 12 below highlights the number of displaced workers expected to be re-deployed in the new projects. The group revealed that given that almost seventy percent of the miners possess basic educational qualifications, primarily unskilled positions have been considered for the redeployment. However, it is anticipated that 2 out of 3 vacancies for the iron and steel and the coal ash brick projects would require some technical skills and the group may have to assess the aptitude of the workers before retraining and eventually including them in the workforce. It is expected that there would be stiff competition from the market especially from young people trying to enter the labour market.

**Figure 12: Proposed Non Coal Sector Projects**

<b>Name of the Project</b>	<b>Approximate number of retrenched miners who might be re-deployed</b>
Water Utility Project	150
New Materials Project	300
Coal Ash Bricks Project	92
Iron and Steel project	230

*Source: Jiaozuo Coal Group*

## **5.2. Other key projects in Jiaozuo as outlined in the 11<sup>th</sup> 5 year plan**

The five pillars of Jiaozuo city's economy at the moment are the non-ferrous metal smelting and processing industry, the energy industry, the chemical industry, the auto ancillary industry and the agro based product processing industry. According to the 11<sup>th</sup> five year plan cumulative investments in the aluminium smelting and machining products are expected to be around RMB 22 billion. The auto ancillary industry on the other hand expects investments of around RMB 7.5 billion in selected projects including the production of new type of tyres, auto fittings etc. The chemical industry is looking at a total investment of around RMB 3 billion while power generation is poised to receive a massive investment of around 51 billion for 28 new projects. Jiaozuo in the recent years has seen tremendous development in terms of setting up of new power plants including large scale plants like Jiaozuo Power Plant, Danhe Power Plant, Aiyise Power Plant and Jinguan Energy which has boosted the total installed power generation capacity of the city to 2.6 million kw. It is expected that once all the proposed power plants become operational, the city's installed power generation capacity will surpass 10 million kw making Jiaozuo one of China's most important energy bases.

The fifth pillar of Jiaozuo's economy is the agriculture and by products industry and it is estimated that an investment of around RMB 3 million is to be made in selected projects. Although not included in the five pillars of the economy, tourism is also growing quite rapidly and is contributing more and more to the GDP of the city. In 2003, Jiaozuo was included in the list of the country's high potential tourism destinations.

If all the investments envisaged in the 11<sup>th</sup> five year materialize, it is expected that the existing employment base of 5.4 lakh (2005) would get expanded by around 150% - 200%. However, given that most of the investments are going to be made in the processing industries such as aluminum, power generation, chemicals, paper etc., around eighty percent of the new jobs are likely to require technical skills.

There would be requirements for unskilled positions too, but the tight labour market and the number of new job entrants expected to enter the market between 2006 and 2010 is likely to provide stiff competition to the displaced miners. The city anticipates a large influx new "employable" people owing to limited growth opportunities in the agriculture sector and with 70% of the total population being dependent on that sector for their livelihood.

Figure 13 below maps the key projects in the five pillar industries as mentioned in the 11<sup>th</sup> five year plan against the proposed investments and the estimated manpower deployment opportunities for unskilled workers and the nature of functions in each of those five industries. The estimated manpower requirements including both skilled and unskilled labourers have been calculated on the basis of typical asset turnover and employee productivity norms.

**Figure 13: Proposed Projects in five pillar industries in the 11<sup>th</sup> five year plan**

<b>Project / Sector</b>	<b>Key Investments / projects</b>	<b>Manpower deployment opportunities</b>
Aluminium: Alumina production from bauxite, smelting to derive aluminium which is subsequently used for making downstream products	Aluminum Corporation of China Limited's Zhongzhou aluminum factory with an estimated investment of RMB 21.2 billion in alumina production and smelting operations  Qinyang Aluminum & Electricity group with an investment of RMB 0.96 billion for manufacturing aluminium board	Estimated direct manning of 185,000*  Ratio of skilled : unskilled workers at 3:1, leading to an estimated requirement of 46,000 unskilled workers  Nature of functions for unskilled workers include material handling (loading / unloading), sanitation  Focused technical training to unskilled workers for welding, fitting and related jobs for downstream products may be necessary
Agriculture and by products: Milch cow breeding base, ice cream and milk production; paper production	Jiaozuo Ruifeng Paper Company to invest RMB 3 billion for manufacturing specialty paper  Meng Niu's production unit in Jiaozuo to invest 0.27 billion for constructing a new milch cow breeding base, dairy operations including ice cream production	Estimated direct manning of 26,000*  Ratio of skilled : unskilled manning at around 3:1, leading to an estimated requirement of 6,500 unskilled workers  Nature of functions for unskilled workers include pulp handling, milk loading, unloading and delivery, cleaning and sanitation etc
Auto ancillary: Tyres, fittings, engines etc	Fengshen Tyre expected to invest 0.27 billion for production of new type of tyres  Zhongzhou Group an estimated 2.8 billion RMB investment for making auto fittings  Zhongneipei, an 0.4 RMB billion investment in an engine plant  Tianyang Company to invest 1.31 billion RMB for making auto fittings	Estimated direct manning of 60,000*  Envisaged requirement of 15,000 unskilled workers  Nature of functions for unskilled workers include material handling, sanitation and cleaning etc  Focused technical training to unskilled workers for welding, fitting and related jobs may be necessary
Power generation, transmission and distribution	Target generating capacity of 8,000 MW by the end of the 11 <sup>th</sup> five year plan  Cumulative investments of RMB 51 billion in generation, transmission and distribution. Representative investors include the Jiaozuo Coal Group itself and the Jiaozuo Zhongzhan District Electricity	Estimated direct manning of 9,000*  Ratio of skilled : unskilled manning at 3:1 leading to an estimated requirement of 2,500 unskilled workers  Nature of functions for unskilled workers include material handling (loading / unloading), sanitation and cleaning

		Focused technical training to unskilled workers for welding, fitting and related jobs for maintenance operations
Chemicals: organic chemicals like methanol etc	Jiaozuo Haohuayuhua Chemical Company to invest RMB 2 billion for manufacturing specialty chemicals  Henan Baililian Company to invest RMB 1.08 billion for manufacturing specialty chemicals	Estimated direct manning of around 24,000*  Ratio of skilled : unskilled manning at around 4:1, leading to an estimated requirement of 5,000 unskilled workers  Nature of functions for unskilled workers include cleaning and sanitation, basic maintenance etc.

\* Based on asset turnover and employee productivity norms

The analysis suggests that if all the proposed projects in the 11th five year are successfully implemented the total number of jobs in Jiaozuo city would be around 304000. The expected requirement of unskilled workers would be 75000 or around 25% of the additional jobs. The nature of functions across the five industries is somewhat similar and includes cleaning and sanitation, basic maintenance, material handling (loading / unloading) and delivery etc. Unskilled workers could be provided focused training in welding, fitting, maintenance operations etc to augment their current skill sets to fill up some of the positions.

However, the number of additional jobs for unskilled workers may be drastically reduced if proposed investments do not materialize in time.

### 5.3. Tourism for Economic Development

Tourism in Jiaozuo has become the new economic driver for growth. The city was selected as an excellent tourism city following an inspection by the state tourism bureau in 2003. Income from tourism in 2005 was around 4.57 billion RMB and it contributed to around 8.3% of the city's total GDP, an impressive increase in contribution from 1% in 1999. The importance of tourism for Jiaozuo has been increasing and of late, the sector has started to be widely considered as the potential sixth pillar of Jiaozuo's economy.

Some of the top tourist attractions of Jiaozuo include:

- Yuntai Mountain, a world renowned eco-tourism site and endorsed by UNESCO as a world geopark in 2004
- Hanyu Tomb, set up 1200 years ago in the memory of Han Yu, the great writer, thinker, politician and educator in Tang Dynasty
- Zhu Zaiyu Memorial Museum, regarded as a national major historical and cultural site under state protection by the State Council
- Jiaying Taoist Temple, the first temple created to show respect to the Yellow River and which embodies how the Chinese people have managed the mighty Yellow River over the years
- Yueshan Temple, the biggest Buddhist temple in the north of Henan province and widely considered to be one of the three famous temples, the others being the Whitehouse Temple and the Shaolin Temple
- Taiji boxing (popularly known as shadow boxing in other parts of the world).

Mount Yuntaishan Geopark located at the southern foothills of the Taihangshan range has been Jiaozuo's number one tourist attraction in the last few years. Apart from putting Jiaozuo on the national and international tourism map, Mount Yuntaishan Geopark has also successfully managed to create employment opportunities for people in the area. A special training programme has been drafted for local people to become tourist guides of the geopark. The training programme aims to empower the trainees with

basic geological knowledge and help the tourists appreciate the natural wonders of this spectacular geopark. According to the world geopark website ([www.worldgeopark.org](http://www.worldgeopark.org)), around 8.05 million tourists visited the site in 2004, an increase of almost seventeen times from 1999 and tickets sales were around 222million RMB.

Jiaozuo has successfully hosted seven International Taijquan annual conferences attracting numerous Taiji lovers from all over the world to attend and compete. In 2000, the International Wushu Federation decided to name the month of May each year as "World Taiji Month". Taiji's popularity around the world could be measured by the fact that more than 70 countries around the world have set up Taijiquan associations.

The first World Tourism Marketing Summit in Nanjing, China in 2004 pointed out that almost 95% of all visitors to the tourism sites in China are primarily domestic tourists. The visitors to the historical, ecological and culturally rich sites in Jiaozuo too are predominantly domestic in nature. The city though has clearly a lot of potential to attract foreign tourists to its shores thereby increasing the contribution of tourism to its GDP on one hand and create employment opportunities for its inhabitants on the other.

#### 5.4. New projects in Henan and neighboring provinces

According to the 11<sup>th</sup> five year plan, a number of projects with a potential to employ both skilled and unskilled workers are expected to be rolled out in the Henan, Shandong, Shanxi and Hubei provinces. Key potential projects include:

##### Coal mining projects

- In the Henan province, a new project in the Pingdingshan area pushing the total coal production of the province by another 30,000 thousand tons
- New coal mines would be created in the areas of Juye, Jinin, Shanxian and Jibei in the Shangdong province increasing the total coal production of the province to around 150 million tons
- By 2010, the total production of coal in the Shanxi province is likely to be around 700 – 750 million tons and to reach the target new mining rights would be distributed. Leveraging the existing coke bases in Xiaoyi, Fenyang, Hongdong, Hejing, Jiexiu, Lingshi and Lichung, 30 new enterprises would be developed.

##### Power generation projects

- New power generation plants in Longhai, Yuzhong and Yu zhongman in the Henan province adding another 45,000 kilowatt to the existing power production base. It is also expected that new projects like Henan-Hubei 500,000 volt super high voltage and Luoyang Moudan-Zhenzhou Songshan 500,000 super high voltage electricity transmission and transformation projects would be implemented in the next five years
- New thermal power stations in the Shangdong province increasing the power generation capacity of the province by another 31,000 kilowatts
- In the Hubei province, new waterpower stations projects in Qingjiang Shuibuya, Bailianhe river and Beishan.

##### Speedway / Highway projects

- Three new projects namely construction of Henan section (from Nanle county to Xinxian county) of Daqing-Guangzhou speedway, Henan section (from Jiyuan to Nanyang) of Erlianhaote-Guangzhou speedway, Henan section (from Xinyang to Xixia) of Shanghai-Xian speedway in Henan province
- New speedway projects from Rongcheng to Wuhai, Bingzhou to Dezhou and Hengshui, Qingdao to Yingchuan and Qingdao to Lanzhou in the Shangdong province
- Total length of speedways in the Hubei province is expected to experience a 100% growth by 2010 following the implementation of projects like Yingchang to Lichuan, Macheng to Wuhan, Wuhan to Jingmen, Wuhan to Yichang, Huangshi to Tongshan, Jingzhou to Gongan.

### Railway construction projects

- Total length of railway lines expected to reach 2,000 kilometers in the Shandong province by the end of the 11th five year plan
- Construction of new railway lines from Hefei to Wuhan, Wuhan to Yichang, Yichang to Lichuan and Lichuan to Fuling in the Hubei province
- New railway lines in the Shanxi province from Tiayuan to Shijiazhuang, Suozhun to Taiyuan etc.

The above projects are likely to have substantial manning requirements for unskilled labourers. However, given that Shandong, Shanxi and Hubei all face acute unemployment problems of their own it is more likely that preference would be given to workers from those provinces against the vacancies that are created there by limiting the possibility of Jiaozuo's workers migrating to these provinces. Although Jiaozuo is part of the Henan province, it is only one of the seven urban regions of the central Henan cluster, the others being Xinxiang, Kaifeng, Luoyang, Pingdingshan, Xuchang and Luohe. The incremental increase in employable population in all the urban regions in the province would pose a substantial barrier for the displaced miners of Jiaozuo to find jobs in the proposed coal mining, power generation and speedway projects of the province.

### 5.5. Leveraging foreign direct investment (FDI) for economic development

China has been one of the world's leading investment destinations in recent years. The World Investment Report 2006 released by the United Nations Conference on Trade and Development (UNCTAD) listed China as the largest FDI destination among all developing countries, receiving 72.4 billion U.S. dollars of FDI in 2005. The report also mentioned that the country has become the world's third largest FDI recipient.

The FDI inflow to the country has largely been in industries like automobile, chemicals, pharmaceuticals, biology and information technology. A recently published report on overseas investment trends in the next few years by the Chinese Academy of International Trade and Economic Co-operation reiterated the focus on these industries. The report was compiled after surveying multinationals, many of whom are listed in the Business Week's top 1,000 companies from Europe, the Americas, Japan, South Korea and Hong Kong Special Administrative Region. Salient features of the report include:

- 82% of the surveyed multinationals expressed their desire to boost their spending in China
- 35% of the multinationals are in the process of consolidating their investments in the country
- Labour costs in the country which is around one third of Brazil and Mexico remains one of the key reasons to attract overseas investors
- By 2005, around 30 multinationals have set up their regional headquarters in the Chinese mainland.

Owing to its rich natural resources, excellent road and rail connectivity and the Government's proactive measures to develop the secondary industry and the service industry, Jiaozuo has become one of the most active cities in economic development in the Henan province. According to the "Invest in Henan<sup>3</sup>" website, by the end of 2002, the Jiaozuo local Government had approved 309 foreign enterprises with contractual foreign investment of around USD 659 million among which USD 324 million has already been invested. Foreign investments to the city had come from more than 20 countries.

The city is also attracting investments from global retail organizations. Carrefour, one of the world's largest retailers has recently decided to set up its first flagship hypermarket in the city<sup>4</sup>. The proposed hypermarket would be located in downtown Jiaozuo with a total construction area of 30,000 sq. meters. It is expected that the hypermarket would become operational by June, 2007. The hypermarket will have 20,000 commodities in its stocks with about 40% of its products being locally produced in the Henan province.

<sup>3</sup>Source: <http://www.fdi-hn.gov.cn/english/news/2004/2/18/1077089074375.shtml>

<sup>4</sup>Source: <http://www1.cei.gov.cn/ce/doc/cen3/200607311732.htm>

Jiaozuo has an excellent opportunity to reap benefits from the potential overseas investments and strategic planning could ensure reemployment opportunities for the unemployed of the city in the newly created enterprises. However, the local Government of Jiaozuo would need to be conscious of the stiff competition likely to come from other local Governments in attracting foreign investment as highlighted in the Chinese Academy of International Trade and Economic Co-operation report on the investment trends.

## 5.6. Supply side analysis

In 2005, the total population of Jiaozuo was 3.52 million. Around 2.48 million inhabitants of Jiaozuo were from the rural areas accounting to more than 70% of the entire population. According to the 11<sup>th</sup> five year plan, the estimated number of people who shift from agricultural activities every year to the other sectors is around 50,000. Records of annual registrations of urban unemployed people maintained by the local statistical bureau, further estimate that around 20,000 more people join the employable population annually pushing the total employable population of Jiaozuo to around 70,000.

**Figure 14: Estimated Incremental Employable Population in 2005**

	2004	2005
Enrolled Unemployed (persons)	12520	13580
Enrolled unemployment rates (%)	3.6	3.7
Employable population(persons)	347778	367027
Incremental employable population(persons)	-	19249

*Source: Jiaozuo Statistics Bureau*

Successful implementation of all proposed projects in Jiaozuo during the 11th five year plan is expected to have a manning requirement of around 75,000 unskilled workers. With an annual shift of 50,000 people from agriculture only, the supply of incremental employable population would be much more than the jobs likely to be created.

The employment market would be farther constricted as a significant number of the unemployed people (around 20,000) from the urban areas would also join the race for the vacancies for the unskilled positions.

## 5.7. Summary of opportunities and challenges

With close to 70% of the displaced workforce possessing only primary education and a large cross-section being involved in relatively unskilled activities, one of the primary areas of focus of the above analysis has been to assess the potential redeployment opportunities for this category of displaced miners. Based on the analysis, it is evident that:

- The possibility of retrenched workers with higher education and skill levels finding alternate deployment opportunities is relatively higher given the significant number of new projects utilizing state of art technology being implemented under the 11th five year plan
- In terms of redeployment of displaced miners, opportunities in the coal sector should be given first preference to maximize learning curve benefits, followed by other projects. However, given the changes in technology, the level of mechanization in new mines is expected to be significantly higher leading to a requirement of lower proportion of unskilled workers
- The Jiaozuo Coal Group projects are expected to offer redeployment opportunities to around 4000 unskilled workers. However, stiff competition is likely in case the positions are not reserved for the retrenched workers

- The chances of reemployment in the projects to be rolled out in the next five years in the Henan, Shandong, Shanxi and Hubei province are rather slim for the displaced workers of Jiaozuo owing to the unemployment problems that the provinces themselves face
- The supply of unskilled labours will be more than the jobs created in Jiaozuo during the 11<sup>th</sup> five year plan
- Training is likely to become an important component of the redeployment exercise especially for opportunities outside the coal sector in areas like water and utility, iron and steel etc.
- The receptivity of the higher age groups (forty and above) in terms of adjusting to the new sectors may be relatively lower compared to the younger age groups.

## 6. National and International Case Studies

This section of the report presents a few case studies from both China and abroad covering countries such as France, UK and Germany. The case studies relate to the activities undertaken by regional and Central Governments to regenerate an economy and mitigate the problems of unemployment. The section provides snapshots of innovative policies employed by the Government in Shanxi to maximize the potential of coal industry on one hand to the proactive measures undertaken by the Shanghai Government to tackle the problem of unemployment on the other. International experiences from the Lorraine region in France, Ruhrgebiet region in Germany and the restructuring of British Coal industry and the role played by the British Coal Enterprise to help displaced miners find alternative livelihood options have also been included.

### 6.1. The Shanxi experience

The Shanxi province accounts for almost one third of China's total coal production. It is estimated that the province has coal reserves of more than 700 billion tons of which about 150 billion tons are available within 1,000 meters from the surface. However, the province has been seriously plagued by environmental problems and has three of the country's most polluted cities. A combination of pollution from coal mining activities, poor nutrition and lack of education has resulted in unusual incidences of birth defect problems.

Given this backdrop, the provincial Government of Shanxi has decided to close all small mines with a production capacity of less than 90,000 tons and promote modernized and environmentally compliant large mines with annual production capacity of more than 300,000 tons.

The policies rolled out by the provincial Government are innovative in the context of the coal industry of China. Some of the salient features of the policies put in place include the following:

- Introduce a comprehensive coal cost accounting method that includes cost related to safety mechanisms, environmental costs, resource costs etc. The principal aim of the method is to rationalize coal productions costs
- New mining rights to be transferred through an open market system i.e. competitive public bidding, auction and listing
- Distribute the income from mining rights transfer between the Central and Shanxi provincial Government at the ratio of 20:80. The Central Government is to invest its income in activities as prescribed by the State regulations and support the development of the Shanxi coal industry in general. The local Government on the other hand is needed to invest its share of income in improving the environmental standards and also promote activities like coal resources exploration and protection of the existing coal reserves
- The management of the coal mines would have to consider expenses for the protection of environment as part of their operational costs under the principle "owned by the business, used for a corresponding project, saved in a different account and supervised by the Government"
- Coal mining companies to contribute to a pooled fund which would be used to mitigate social problems caused by coal mining, enhance environmental protection etc. Contribution of the mining companies would depend on the type of their coal mines, the number of resources deployed by them and the type of coal that their mines produce
- Make use of the land abandoned following the closure of coal mines to develop recycling economy and successive industries with an aim to redeploy unemployed people from the region
- Encourage reemployment of displaced coal miners and ensure all possible help is extended to them in terms of resettlement and entitlement of social insurance benefits in time
- Enterprises that help the unemployed gain reemployment and promote self-employment would enjoy preferential treatment from the Government in terms of taxes etc
- Coal production enterprises to create a separate fund to be used exclusively for staff reemployment, vocational training and other benefits.

## 6.2. The Shanghai experience

The modern metropolis of Shanghai has undergone a remarkable transformation from being an erstwhile small village facing the East China Sea to one of modern China's true economic powerhouses. Since the economic restructuring measures taken by the Chinese Government, Shanghai like many other provinces in China has been affected by the unemployment problem. But to its credit, Shanghai has been extremely innovative in its approach to deal with the problem of unemployment. In 1996, the Shanghai Government introduced the concept of irregular employment which was further validated in 2003, vide the circular from Labor and Social Security Bureau of Shanghai Municipality "Issuing Several Opinions on Standardizing the Management of Labor Organizations in the Form of Irregular Employment (HULAObAOJIUFA 2003 No. 34)".

The provincial and the municipal Governments have worked together to foster the growth of labour organizations that promote irregular unemployment and have rolled out policies to ensure that these organizations receive all necessary support to be successful. An application criterion has also been set to categorize the organizations which could be classified as an irregular employment organization. Any new applicant interested to avail the certificate of irregular employment organization needs to:

- Possess the Shanghai Hukou i.e. the household registration certificate
- Provide all supporting documents to the municipal and social security bureau at the time of application.
- Ensure that 70% of their employees are either unemployed people from Shanghai or people who have shifted from agriculture in search of an alternative livelihood
- Have an aggregate capital of more than 500,000 RMB at the time of commencing business
- Have suitable work space that satisfies the requirements of the industries that they would be catering to.

Some of the salient features of the favourable policies to encourage irregular employment include:

- Providing exemptions in local taxes for organizations which promote irregular employment
- Imparting free technical training for the employees in those organizations
- Making start up loans available to the organizations
- Reducing rent on offices from which the businesses are operated.

The service areas where organizations in irregular unemployment are involved include:

- People oriented services like property maintenance; mending and repairing of household electrical appliances; catering; leasing services in terms of tools and equipment leasing, audio video products leasing, home computer leasing etc; commission services like handling wedding ceremonies, meter reading for water, electricity and gas etc
- Public services ranging from activities related to city maintenance, sanitation, maintaining and planting trees in the city, providing information on employment etc
- Other services like automobile cleaning, retrieval and utilization of renewable resources, hotel related services etc.

The Government's proactive measures to enhance irregular employment in Shanghai have been largely successful. By the end of 2005, the estimated number of organizations involved in providing irregular employment was around 34,000 employing about 355,000 people.

## 6.3. The Lorraine Experience

Located on the French-German border, the Lorraine region in France has historically been extremely active industrially. Owing to its vast natural resources the region experienced rapid growth of traditional large-scale industries like steel and coal mining till the early 1970s. However, in the mid 1970s the traditional industries faced a crisis due to a number of reasons starting from competition from overseas markets,

environmental degradation, lack of resources etc. With the decline of the large industries like coal and steel, the unemployment rate rose dramatically and out migration from the region became a reason for real concern. Between 1975 and 1995, the regional population got reduced by 47,000 inhabitants and the unemployment rate in the region rose to more than the national standards. It is estimated that in 1994, unemployment among individuals under 25 years of age had reached an alarming rate of 24.3%. To its credit, the region has managed to tackle its unemployment and out migration problems through a concerted effort and initiatives undertaken by the European Union, the French Government and other regional Government bodies.

The turnaround of Lorraine's fortunes in the last 30 years could be attributed to the following reasons:

- Drafting a strategy in the mid 1970s for industrial transformation and the decision to promote industries like electronics, telecommunications, lasers, biotechnology, automobile manufacturing, food processing etc
- Establishing the department of territorial management which was entrusted to handle problems like pollution and using the idle sites following closure of the coal mines
- Setting up a fund of 3 billion Francs to facilitate the industrial transformation of Lorraine
- Rolling out the policy to convert the abandoned mining sites into greenfield sites, entertainment centres, new factories, residential complexes
- Promoting the Pioneer Parks for laid-off workers to start small businesses with assistance from the Government ranging from availability of equipments, offices and expert consultancy in the initial stages. The initiative reaped rich dividends, as at one point of time, of all the enterprises that existed in Lorraine 91% was classified as minor enterprises with no more 10 employees on their pay roll
- Retraining the displaced workers and providing a job application hotline service at the local labour bureau which led to an impressive figure of 90% people being reemployed following training
- Rolling out the policy that enterprises which reemploy displaced workers would receive 30,000 Francs per person as well as other benefits in terms of tax, credit and loans
- Creating ATTELOR, an association which brought together universities, institutes of higher education and businesses to set up networks by mobilizing regional centres of technology transfer to make direct contacts between technological council specialists and regional SMEs. The ATTELOR was formed via a joint initiative of the French Government and the region
- Becoming the pilot region for the European Commission's Regional Technology Plan (RTP) which was later renamed to Regional Innovation Strategy (RIS). The main objective of the Lorraine project was to give more coherence to the use of all resources from the European Community, national and regional level, devoted to innovation, in order to foster innovation in the strategy of existing SMEs, and developing industry with new, high value-added activities
- Promoting cross regional cooperation with neighboring Germany, Luxemburg and Belgium since the mid 1970s. With the help of carefully drafted programmes designed to increase the attractiveness and the relatively low cost in doing business and living, Lorraine has successfully managed to lure many migrant companies to set up their shops in the region in the recent years.

The economic future of Lorraine indeed looks much brighter than it did 30 years ago. The new industries have certainly compensated the decline the traditional industries like coal and with cross-border investments flowing in, Lorraine seems poised to regain its past glory as one of the leading industrial regions in France.

#### **6.4. British Coal Enterprise and restructuring of the UK coal industry**

The UK coal industry was restructured between 1983 and 1992 resulting in the closure of unviable mines and privatization of the industry. The restructuring programme is often referred as the first concerted attempt to transform a subsidized state run coal industry and make it economically viable. The contraction of the coal mining industry led to the loss of jobs for around 200,000 workers.

British Coal Enterprise (BCE) was set up as a subsidiary of British Coal to help its former employees find alternative livelihoods through redeployment and self-employment. The BCE initially received a funding of US\$8.25 million from the UK Government which went up to US\$ 100 million by the early 1990s.

The principal activities of BCE included:

- Regenerating local economies affected by mine closure by promoting small business start ups
- Making funds available via Fast Track Loans up to 25,000 Pounds
- Developing and providing state of the art work spaces to house new units in abandoned coal mine sites
- Retraining workers in programme like self marketing training, brick laying, welding, electrical repairing etc
- Running a comprehensive Social Safety Net Programme.

The salient features of the Social Safety Net Programme encompassed:

- Job counseling and placement services
- Ensuring timely statutory payments to workers subject to the employees meeting the criteria of being employed in the coal industry for 30 years, with a maximum weekly pay of UK 300 pounds
- Rolling out the Jobs and Career Change Scheme (JACCS) located mostly in collieries under which career centres and job shops were established for both the skilled and unskilled workers.

Major achievements of BCE included the following:

- Number of redundant workers notified to the BCE was 40,769 with 32,964 registering themselves for assistance
- Among the 32,964 registered workers, 27,948 were resettled of whom 17,500 got redeployed directly based on their existing skills while the remaining 10,448 workers opted to be retrained by BCE
- 6,317 workers who had opted for training completed their training and around 3360 (55%) got a second job
- During the six years of its operation, the BCE had built an impressive 1.3 million sq.ft of workspace through 47 separate projects (with financial assistance from the European Fund), occupied by 964 units leading to the creation of 15,073 jobs
- Number of self-employment opportunities generated by BCE was 51,323, with financial assistance being provided to the erstwhile displaced workers in all these projects
- Number of jobs created from the JACCS initiative was 57,244
- Total number of jobs including redeployment and self-employment was 123,640.

The BCE's interventions to create new employment opportunities for retrenched workers were successful to a great extent. Initiatives by the BCE proved to be the catalyst in regenerating the local economies affected by the closure of mines. One of the key drivers behind the success was the seamless integration between BCE, the individual coal mines and the different tiers of the Government namely, City, Provincial and the Ministry of Coal at the centre.

## 6.5. The Ruhrgebiet experience

The Ruhr region in Germany has grown from a predominantly rural area with around 250,000 inhabitants to one of the densely populated areas in the country in the last 150 years. The process of industrialization started in the 1840s and by the turn of the 20th century, the region was considered to be as one of the most important centres of steel and coal production in Europe.

Today the term "Ruhrgebiet" is generally associated with the boundaries of the KVR (Kommunalverband Ruhrgebiet) which was earlier the planning institution for the area and which has evolved to become responsible for the promotion of regional initiatives and development of regional statistics and analysis.

By the 1960s, the Ruhr area came to be known as the "Kohlenpott" ("coal pot" or "soot bowl") of Germany and environmental pollution had reached new heights. The problems related to pollution attracted much attention in the political circles of Germany and there were demands for "Blue Skies over the Ruhr" in election campaigns.

The coal industry saw a steady decline since the Second World War and by 2000, there were only six operational pits and the workforce in the sector had reduced to 40,000 from an erstwhile high of 400,000. The reasons behind the decline are largely due to two factors:

- International competition and locational disadvantages due to changed technology
- Absorption of workers in other sectors.

Much to its credit, the region has regained its blue skies over the last few decades following concrete measures by the Federal Government to economically regenerate the region.

The salient features of economic regeneration of the area could be attributed to the following:

- Setting up of the Development Society of Ruhrgebiet Coal Region which is responsible for disposing waste materials, improve environmental standards in the region and provide advisory support to cities and counties in development planning
- Rolling out of the Technology Programme for the Economy (TPW) in 1978 with a particular focus on providing SMEs with financial incentives
- Introducing the North Rhine-Westphalia Initiative for Future Technologies in 1984 to promote innovations in modern technologies especially environment and technology transfer
- Ensuring technology transfer to SMEs by the agency ZENIT (Zentrum für Innovation und Technik) under direct supervision of the Ministry of Economic Affairs
- Promoting local economic policies to foster inward investment on one hand and supporting SMEs and creating technology centres on the other hand
- Creating a robust training network to create a more qualified and flexible workforce. Training initiatives included further training for the unemployed (or those might lose their jobs) financed by the Federal Labour Office and the EU. Private providers such as chambers of commerce, trade union centres were also roped in the training process. Re-training courses, financed by the EU were also launched for disadvantaged long term unemployed people especially the young and women.
- Introducing labour market policies like the Land NRW 1992 and 1996 to promote reemployment and self-employment. In 1989, the Federal Government started a programme for employment aid for the long term unemployed
- Dynamic development of business start-ups and mobilization of private capital in the region
- Founding the International Building Exhibition project to incorporate local development projects in line with the Land NRW 1996 policy with a primary aim to promote ecologically sustainable production and conversion and re-use of the old industrial sites as part of the culture heritage of the Ruhr area
- Promoting a diversified industry structure in terms of a mix between large firms and SMEs as well as in terms of a range of various industrial and service sectors
- Ensuring a flexible administrative system comprising of competent local actors capable of initiating co-operation among between the policy implementers, industry and other stakeholders.

The success of the economic regeneration of the Ruhr region could be attributed to the pro-active role played by the Federal Government and local actors in the region and their ability to attract and manage EU funds efficiently. The economic regeneration of the Ruhr region is often quoted as an example of reversing poor economic performance through proper exploitation of existing regional resources and complementing them by funds received from an external body.

## 7. Recommendations

Our recommendations have been based on a comprehensive analysis of the available secondary research material, interactions with the miners and officials from the Jiaozuo Government and the Coal Group. We have analyzed in depth the proposed new projects in both the coal and non-coal sectors expected to be implemented in Jiaozuo during the 11<sup>th</sup> five year plan taking into consideration the education qualification of the miners, their skill levels, their age profile and their abilities to upgrade themselves through training to either reenter the formal job market or become self-employed.

The recommendations have been grouped in the following subsections:

- Augmenting economic development through FDI
- Considering tourism as the sixth pillar of Jiaozuo's economy
- Redeployment and training
- Establishing of the Employment Resource Centre (ERC)
- Facilitating Jiaozuo Coal Group and Government relationship
- Designing an effective Monitoring & Evaluation framework.

### 7.1. Augmenting economic development through FDI

There is a synergy between the designated five pillars of Jiaozuo's economy and the industries where FDI has been flowing in the country in general. Industries like chemicals and automobile, part of the five pillars of Jiaozuo's economy have been focus areas for overseas investors in recent times. The other three pillars of Jiaozuo's economy encompassing non-ferrous metal smelting and processing industry, the energy industry and the agro based product processing industry could well become key areas for investment owing to the city's rich natural resources and excellent connectivity within and outside the Henan province. To attract overseas investments in all five pillars of Jiaozuo's economy, the following could be considered:

- Showcase its natural resources and existing industry base by providing detailed information to the potential investors
- Highlight the availability of manpower, both skilled and unskilled and facilitate linkages with the local employment bureau and the Employment Resource Centre
- Create an investment micro site following the [www.fdi-hn.gov.cn](http://www.fdi-hn.gov.cn) site with exclusive sections on investment guidelines, preferential policies, Jiaozuo's advantages in terms of natural resources and location, links to foreign trade agencies like Japan External Trade Organization (JETRO), link to Jiaozuo investment project database on the Invest in Henan website etc
- Explore the possibility of setting up of an Export Processing Zone (EPZ) in the city in line with the Zhengzhou EPZ offering investors incentives such as import tax exemption, exemption of export duty, freight allowances, enterprise income tax exempted for the first two years and half of that exempted for the following three years, innovative customs policies such as "one time declaration, one time sheet-review and one time inspection" leading to a clearance within 24 hours etc
- Draft preferential policies for labour intensive projects capable of employing some of the displaced miners and the city's unemployed population
- Ensure participation in events such as the Henan International Investment & Trade Fair, the fourth edition of which was held in the Zhengzhou International Expo Centre in April 2006 and explore the possibility of hosting the interested foreign investors in Jiaozuo city and facilitate meetings with industry champions and the concerned officials of the local Government; Possibility of holding trade fairs in Jiaozuo could be explored too.

### 7.2. Considering tourism as the sixth pillar of Jiaozuo's economy

The local Government's decision to promote Jiaozuo as a tourism city in the last decade or so has reaped rich dividends. Revenues from tourism have registered a continuous increase in the last few years and

reached 4.57 billion RMB in 2005. The success of Yuntai Mountain World Geopark is an indication of the tourism sector's potential to contribute to Jiaozuo's economic development. To leverage the tourism potential, it would be important for the city to start attracting international visitors along with the domestic tourists. The following could be considered to make Jiaozuo an international tourist destination:

- Leverage its locational advantage in the Henan province and promote itself as the base for tourists to explore the city's natural splendors, historical monuments and temples and cultural heritage sites before exploring the other famous sites in Henan such as the Shaolin temple, White Horse Temple in Luoyang, Yangzigou and Tongtianxia Gorge etc
- Explore the potential of martial arts package tours to foreigners with an interest in Taiji by interacting with the Taijiquan associations around the world; Offer training courses in Taiji to individuals following the model of Shaolin and Kalarippayattu Academy in Kerala, India which has evolved to become an international center of learning and exchange of techniques, knowledge, ideas, and research on Kalarippayattu, an ancient martial art of south India
- Explore the potential of specially designed Yellow River packaged tours in line with the Nile cruise in Egypt exposing the tourists to ancient cultural cities like Luoyang, Zhengzhou and Kaifeng
- Have a separate section on tourism on the [www.jiaozuo.gov.cn/english](http://www.jiaozuo.gov.cn/english) site with all relevant details such as the tourist sites, accommodation, transportation, foreign currency exchange bureaus etc
- Translate the site to Japanese to attract tourists from Japan who are already familiar with destinations like Luoyang and Shaolin in the Henan province; Subsequent translations in other languages could be thought of after analyzing the demographic nature of the tourists
- Translate the tourism website of Henan province into English and Japanese.

### 7.3. Redeployment and training

The following two subsections present a detailed analysis of the issues related to redeployment and training of the displaced miners. The displaced miners have been categorized into two groups, namely, below 40 years of age and 40 years and above. It is expected that the first group of miners in the age group of below 40 years of age would stand a better chance of finding a new job following upgradation of their existing skills via retraining programmes. The second group of miners on the contrary is more likely to face problems in finding formal jobs and would be better suited to become self-employed following carefully drafted retraining programmes to empower them with the necessary skills to start their own businesses.

#### 7.3.1. Redeployment strategy

The principle aim of any redeployment support programme is to help displaced workers re-enter the job market and help those who are unable to do so for various reasons, become self-employed. For this assignment, we suggest a two pronged strategy to achieve optimum results in redeploying the displaced miners of the city.

From the socio-economic profile analysis of the miners likely to be displaced by 2010, it is evident that around 70% of the workers are below 40 years of age. For these workers, we think retraining for skill upgradation with an objective to find new jobs is likely to yield optimal results due to:

- Less resistance to return to the formal institutional training environment after being out of the classroom for many years
- More flexibility in terms of trying out newer career options via on the job trainings and physical mobility if the need be to relocate outside the city
- More enthusiasm to upgrade their existing skills through retraining and make the transition in growing industries
- More interest from potential employers to hire workers who could be with the firm for a number of years

Based on the above, we suggest that retraining to absorb the displaced workers in the age group of below 40 years in formal jobs is given highest priority. It would, however, be important for the Jiaozuo Coal Group to initially focus on employment opportunities available within its own projects encompassing both the coal and non-coal sectors. In purview of the tight labour market and the expected entry of the new workforce from the non mining community, the Jiaozuo Coal Group may employ the policy of “screening” the displaced miners from the other unemployed workers in the city by giving preferential treatment to retrenched workers (<40 years) from its mines. The group may then prioritize by age namely the lower the age the higher the preference, aptitude and level of interest of the workers.

The process of redeploying miners in the Jiaozuo Coal Group could be supplemented by adequate measures to create linkages with potential employers in Jiaozuo city and the neighboring provinces once the first batch of retrained miners equipped with saleable skills are ready for reemployment. Some of the measures that could be followed may include:

- Creating a resume databank and initiate the process of interacting with potential employers to understand their requirements
- Exploring apprenticeships and other similar on the job arrangements through which the employer is provided with an option of trying out the applicant for a pre-defined period at a subsidized cost.

Around 30% of the miners likely to be displaced in Jiaozuo are in the age group of 40 years and above. Compared to their younger colleagues, these workers, owing to their age, limited education and technical skills are likely to find it very difficult to redeploy themselves in the formal sector. They are likely to experience:

- More difficulties to acquire new skills required for reemployment in comparison to their younger colleagues
- Less flexibility in terms of physical mobility owing to higher number of dependants
- Less interest from potential employers owing to shorter work life post employment
- More competition from the educated but unemployed younger workforce ready to enter the formal job market and their erstwhile younger colleagues equipped with new skills.

Anticipating the problems that these workers are likely to face, we think training in self-employment skills would be more beneficial. To ensure the sustainability of the measures to make these workers self-employed, it would be essential to:

- Ensure that the benefits of the existing small business loan scheme is leveraged
- Link up with institutions and organizations which can provide the necessary technical expertise to the workers, most of whom would probably have very little formal commercial and business experience
- Provide supportive supervision to their quest for self-employment.

### 7.3.2. Retraining

Retraining is often seen as the key component of a redeployment programme. In the context of Jiaozuo, retraining would need to be provided to both age group of workers namely, below 40 years and 40 years and above with a focus on reemployment and self-employment respectively.

The importance of retraining programmes to facilitate formal sector employment for workers in the age group of below 40 years would be paramount. To maximize the results of the retraining programmes, courses could be a

#### **Retraining programme for Chile’s Miners**

With financial assistance from the Inter American Development Bank (IADB), the Government of Chile designed a retraining programme for redundant coal miners. The programme provided subsidies for counseling, retraining and placement help for displaced workers. Private agencies were selected via international competitive bidding and received a maximum subsidy of approximately US\$ 2,000 per redeployed worker. Enterprises that hired retrained workers also received a subsidy of approximately US\$ 900 per worker. *Source: Espinoza 1997*

mix of practical and theoretical training. Training programmes could include:

- Short-term (one to six months) courses for unskilled and semiskilled workers in areas such as driving, basic electrical and mechanical maintenance etc
- On the job training, where workers are provided with an unique opportunity to extend their existing skills by working as an apprentice to a skilled worker with the possibility of the employer hiring some of the trainees subject to his/her performance.

To ensure that training programmes are targeted and demand driven, the international best practices in conventional classroom teaching and on the job training could be integrated within the overall approach of imparting training. Some of the well defined international practices include:

- Meeting the demand of the displaced workers – While designing the training courses, it would be critical to keep in mind that displaced workers are essentially unemployed adults, whose primary interest is in jobs, not training. Consequently it would be essential to ensure that training is made as job relevant as possible. At the same time the training programmes would have to self-paced or at least scheduled in such a way that work time lost is reduced as much as possible.
- Training is separated from education – One of the key components for success of a training programme is its capability to be flexible to meet the changing patterns of labour demand. International best practices suggest that an adult reemployment training programme need to be structured independently from the existing educational system. There should not be any rigid ties to degree requirements and academic schedules.
- Linkages to potential employers need to developed and maintained – To ensure that the trainees are equipped with saleable skills, it is mandatory to have close linkages with the industry and potential employers. The extent of market responsiveness of the training programmes might well turn out to the difference between success and failure of the retraining programme in terms of reemployment.
- Training providers should be made accountable – In many developed countries, the trend is to reach a consensus with the training providers about performance standards. The standards may range from the proportion of placement rates in training related jobs, starting wage rates etc. The objective behind setting the standards is to provide marketable training courses. However, to ensure that training services do not translate into job search assistance to the most job ready displaced workers it is critical that the training providers are made accountable and the entire spectrum of displaced workers get benefited.

To increase the chances of redeployment for the displaced miners of Jiaozuo in the age group of below 40 years of age, it would be important to leverage the existing set up of imparting training through the institutes run by both the Jiaozuo Coal Group and the Jiaozuo local Government. Based on the market demands, possibilities of rolling out new market driven courses within the existing set up would have to be explored. At the same time, innovative arrangements involving external institutions including private providers should also be taken into consideration. Following the international best practices, the private providers' interest could be retained through incentives over and above the base payment for conducting training programmes. The incentives could be linked with the feedback received from the trainees and the extent of successful placement post training.

Figure 14 below lists representative training programmes for the displaced miners in Jiaozuo under 40 years of age. The list is based on the analysis done on job opportunities likely to available in the city in the next five years.

**Figure 15: Representative training programmes for workers in the age group of below 40 years**

Welding
Fitting
Basic mechanical and electrical maintenance

Material handling
Driving
Cleaning and sanitation

Training for redundant workers is often focused on facilitating the entry of the trainees in the formal sector. But retraining for self-employment in the context of Jiaozuo is extremely relevant, especially considering the slim chances of workers in the age group of 40 and above getting redeployed in the formal sector. The primary rationale behind the self-employment training programme is to help miners in the older age group move from economic dependency namely, basic living allowance, unemployment insurance etc to economic self-sufficiency. On a broader level, although there is no concrete evidence that all self-employed individuals create jobs, the potential of contributing to the local economic development cannot be ignored.

Training programmes for the miners in the age group of 40 and above could consist of short-term (one to two months) classroom based courses. Given that, many of the displaced workers in the target group of 40 and above would possess very little formal business experience and it would be essential to initially concentrate on areas such as:

- Basic business training with a focus on very small, low-risk, informal trading activities
- Basic concepts of seed capital / credit facilities including availing small business loans
- Basic marketing concepts.

Once the trainees gain a basic understanding on the above, specific training programmes could be rolled out. Figure 15 below lists representative self-employment training programmes for miners in the age group of 40 years and above.

**Figure 16: Representative training programmes for workers in the age group of 40 years and above**

Cattle raising for milk and meat supply
Poultry farming
Apple and orange growing
Bakery
Tailoring / dress making
Bi-cycle and vehicle repairing
Plumbing
Nursing
Handicrafts
Tour guide
Household electronics repairing

For imparting training, the same institutional mechanism suggested against reemployment could be undertaken.

### **State Owned Enterprise Restructuring in Bangladesh**

In the early 1990s the Government of Bangladesh started a large scale privatization programme of SOEs leading to loss of jobs for a number of workers. With financial assistance from DFID and in partnership with BRAC, the world' largest NGO a comprehensive social safety net programme (SSNP) was developed and is subsequently being implemented during the period 2005 – 2009.

Salient features of the SSNP programme include:

- Setting up a job information bank (JIB) consisting information of the retrenched workers for potential employers. So far the JIB has identified 39,095 retrenched workers, the name and address of around 34,000 of whom have been documented and 15,965 have been contacted via letters and BRAC field staff
- Developing market driven training programmes with emphasis on opportunities available in the market. The training programmes rolled out are under two categories namely agro-based and technical training. Agro-based training programmes include livestock rearing, farming, poultry, fisheries etc while technical training consists of courses in refrigerator / air conditioner / television repairing, vehicle driving, plumbing etc. To conduct the training programmes, BRAC, the implementing agency uses its own centres along with other available government and private training institutions
- Offering credit support through small loans ranging between US\$ 500 – 700 to encourage workers to pursue self-employment opportunities. Preference is given to workers from the lower income group to start businesses in areas like poultry, cow and goat rearing, fishing, agriculture, tailoring, running grocery shops etc. Supportive supervision in terms of technical inputs, close monitoring of business performance is carried out through small group of borrowers who interact regularly among themselves supported by the BRAC field personnel.

## **7.4. Employment Resource Centre (ERC)**

The model of creating a focused employment resource centre to regenerate the local economy affected by a large scale restructuring programme has been attempted in many countries around the world to help create new employment opportunities in areas adversely affected by the programme. The goal of setting up of such centres is to provide assistance to the retrenched workers to find alternative livelihood opportunities. For the displaced miners of Jiaozuo, a “Single Window” Employment Resource Centre (referred to as ERC from here on) could be set up to provide comprehensive assistance to the workers in their efforts to find alternative livelihood options.

### **7.4.1. Rational of setting up the ERC and the required institutional arrangements**

The underlying premise for setting up the ERC could be summed up as:

- Job loss typically results in significant trauma and social stigma
- Any kind of mitigating intervention is most effective when it is delivered through existing channels of communication
- Retrenched workers are most comfortable interacting with their erstwhile employers which in this case would be the Jiaozuo Coal Group
- Coordination of interventions in the areas of income protection, other support mechanisms, counseling, training, alternate deployment etc is critical to achieve optimum results.

The proposed ERC could be set up within the Jiaozuo Coal Group and function as a special cell with the sole aim of helping the displaced miners. The ERC would need to have continuous linkages with the local employment bureau in Jiaozuo, concerned bodies within the Municipal Government and the Jiaozuo Coal Group.

To ensure the effectiveness of the support to be provided by the ERC, it would be important to factor in issues from an economic, social and political standpoint and define clear objectives first. The three key objectives would be:

- From an economic standpoint, the objective would be to shift the redundant workers from the coal sector to more productive activities elsewhere in the economy
- From a social standpoint, the objective would be to help those workers upgrade their existing skills to become reemployed or self-employed
- From a political standpoint, the objective would be to gain public support for the restructuring of the coal sector by clearly making the affected parties understand that the Government (both Central and Local) and the Jiaozuo Coal Group is committed to help those who need help.

#### 7.4.2. Scope of work for the ERC

Support provided by the ERC could be in four main areas namely income protection and associated support; counseling covering psychological, investment / financial and training; redeployment support and training.

Under income protection and associated support, assistance to be provided by the ERC could include the following:

- Maintaining a database of retrenched workers eligible for the basic old age insurance and help them complete the necessary paper work and documentation
- Appraising the eligible retrenched workers about the qualifying conditions for unemployment insurance and assist them in registering themselves as unemployed
- Ensuring that the laid off workers receive their basic living allowances in full and on time
- Disbursing the basic living allowance from the centre
- Producing a brochure explaining the “three guarantees” system, namely, the basic living allowance followed by the unemployment insurance and MLSS along with a synopsis of the entitlements that the displaced workers are entitled to
- Informing workers about the medical insurance system and address their queries and concerns.

Counseling, encompassing psychological, investment / financial, redeployment and training is often considered as an important support provided by an agency like the ERC to help displaced workers. The ERC could offer:

#### **Tianjin Women Business Incubator (TWBI)**

TWBI is a non-profit organization with a focus on assisting women workers who become redundant by the economic reform and restructuring. It was established in 2000 with the primary aim of helping female entrepreneurs on one hand and creating re-employment opportunities on the other. Till date the TWBI has been able to generate employment opportunities for an estimated 4,000 people and eight start-up companies have been successfully launched. Currently it has a building area of 5000 sq. meters with 48 on-site and 7 off-site tenants. The TWBI offers start-up assistance, business training, business mastermind assistance and job assistance. At the same time, it facilitates an on-site micro credit programme which had received seed funding from UNDP and the local Government. According to the women of China website, by the end of August 2004, 4462 women have received small loans of RMB 21.98 million with a record of more than 90% repayment. The TWBI has managed to achieve financial self-sufficiency near through renting office spaces, business services, external training courses etc.

The TWBI was set up with financial assistance from the Tianjin Municipal Government which provided the building and some further investment in cash along with contributions from the Tianjin Women’s Federation and three other local Government authorities. Technical assistance in the form of business planning and training was also received from the UNDP. In 2003, the TWBI received support from infoDev to leverage the usage of ICT to enhance business effectiveness of both TWBI and its incubatees.

*Source: Websites of infoDev, TWBI*

- Psychological counseling for overcoming the trauma and social stigma of retrenchment
- Providing guidance on Government instruments, bank deposits and other investment options to enable retrenched workers to maximize their returns from savings
- Counseling of retrenched workers on available job opportunities and training services, handling selection procedures, effectively using the “on the job” training opportunities etc
- Guiding retrenched workers interested in self-employment on managing finances, completing loan documentation, managing risks etc.

The ERC could provide redeployment support to the displaced workers by:

- Maintaining a baseline data of the laid off workers and prepare an evaluation sheet to record their existing skills, aptitude for a particular kind of job / or self-employment
- Liaising with potential employers and keep the displaced workers informed about the opportunities in the pipeline with an aim to eventually create an employment information network
- Creating and update a database from which deployed workers who have received help from the ERC are invited to come to the centre and share their experiences
- Acting as incubation centre to assist displaced workers learn the start-up-know-how and teach them basic skills in business management, marketing etc
- Maintaining a potential list of projects which could be eligible for micro-finance support in consultation with Governments and banks
- Conducting awareness seminars involving retrenched workers, potential employers, financing institutions.

Support from the ERC in the area of training could comprise of:

- Keeping the workers updated on the availability of the training programmes at their disposal
- Helping them decide which programme they should pursue keeping in view their existing skills and their aptitude for a particular kind of a job
- Identifying and contracting with external training institutions which could offer market driven programmes
- Ensuring that the training programmes are vocational in nature and short term in nature
- Monitoring the performance of individual training institutions through trainee feedback, proportion of successful placements etc.

### 7.4.3. Manning requirements for the ERC

We envisage that the ERC would require around 4 employees namely a centre manager, two experienced counselors and an office assistant to carry out its functions effectively. Additionally, a manager from the Jiaozuo Coal Group could be seconded to the ERC for the first six months or so. The seconded manager will help the centre manager in establishing the linkages with the respective Government departments in Jiaozuo as well introducing him / her to the key people from the industry. It is likely that the manager’s secondment would send positive signals among the mining community about the Jiaozuo Coal Group’s commitment to its workers.

Key responsibilities of the centre manager will include publicizing the ERC and its services to both the displaced miners’ community and the industrial circle of Jiaozuo. The centre manager is expected to take the lead in setting up a displaced miners’ database and ensure that the statutory entitlements are paid to the workers in time. The centre manager will also play a crucial role in establishing contacts with the potential employers and keep them abreast of the availability of workers via the ERC. For miners who are deemed fit for pursuing self-employment options, the centre manager will liaise between them and the commercial institutions to avail loans.

The two counselors of the ERC will help the centre manager with the day to day activities of the ERC. Their primary focus will be to provide financial, psychological and career counseling to the displaced workers and encourage them to opt for retraining programmes to upgrade their existing skills. The

counselors will populate the database of displaced miners and document the number of people who opt for retraining programmes and the proportion of successful reemployments and self-employments. The counselors will be in constant touch with the office assistant (proposed to be a displaced miner) to understand the ground realities faced by the displaced mining community and improvise accordingly when they counsel the miners.

The office assistant is expected to be the first point of contact for the displaced miners at the ERC. He/she will help the centre manager and the two counselors in daily office operations and visit the mining community on a periodical basis to publicize the ERC.

Detailed job descriptions for all the positions namely centre manager, counselor and office assistant are provided in Annexure 8.3.

## 7.5. Jiaozuo Coal Group and Government relationship

The State Council's circular (No. 36 document, 2005) on further intensifying employment and re-employment stressed on the importance of creating more jobs through new diversified channels. The circular mentioned that during the 11<sup>th</sup> five year plan, special emphasis would be given to realize the goal of workers choosing their own jobs, market regulating employment and the Government promoting it. The key features of the circular include:

- Encourage, support and guide the development of non-public sectors encompassing individual and commercial households and private businesses to broaden the channels of employment
- Issue the preferential license for re-employment to any laid off worker with the ability and desire to work and individuals in urban areas registered as unemployed for more than a year
- Encourage unemployed individuals holding the preferential license to start their own businesses following which they can enjoy deduction or complete exemption from paying business tax, city maintenance and construction taxes, education surtax and individual income tax for a period of 3 years
- Grant a small business loan of around 20,000 RMB, the term of which should not exceed 2 years with a provision to increase the loan amount for displaced workers based on fulfillment of certain conditions
- Provide a loan interest discount of 50% (the state and the local treasury to bear 25% each) for businesses with moderate profits and operated by registered unemployed urban individual with a provision for a 100% interest subsidy (the state treasury to bear) against small businesses operated by the displaced workers
- Deduct and / or exempt taxes for enterprises that employ individuals holding the preferential license for re-employment for a period of 3 years
- Intensify and administer the issuance and usage of the preferential license for re-employment and establish a system for sharing all information on the re-employment of laid off workers and unemployed
- Give flexibility to the provinces to modify the scope of the preferential license with the exception of issues related to tax according to the unique requirements that may exist in their respective cities and towns
- Mobilize educational and training resources and actively promote trainings for entrepreneurship
- Intensify the delivery of training to upgrade the occupational skills of the displaced workers and the unemployed to increase their chances of redeployment
- Publicize policies related to employment and re-employment to the people through the media namely television, newspaper, radio etc.

Following the State Council's circular, the local Government of Jiaozuo formulated its own version of the strengthening measures to promote employment and re-employment. Subsequently, the Jiaozuo Work and Social Security Bureau in conjunction with three other bureaus came up with the notice about further strengthening the management of the re-employment preferential benefit card.

In 2006, 5912 people received the employment preferential card. The estimated annual Government obligations on account of the displaced workers and the unemployed included:

- RMB 13.9 million towards the public welfare portion of the unemployment insurance fund for around 4563 people
- RMB 3.35 million towards training subsidy
- RMB 8.61 million towards subsidies to employers hiring unemployed / displaced workers which translated to RMB 200 per person per month
- RMB 1.03 million towards occupation introduction subsidy
- RMB 4.5 million for labour market construction spending.

The initiatives taken by the Jiaozuo local Government are not restricted to the retrenched workers from the coal sector only but cover all unemployed and laid off persons in the city. However, the proportion of displaced workers from the coal sector in the target group of beneficiaries was quite large given that 10,342 coal miners have been retrenched in the recent past.

On the other hand, the Jiaozuo Coal Group has almost exclusively been involved in the welfare of its erstwhile employees from the coal sector. The group has been paying the basic living allowance fee to workers who have maintained their relationship with the company, paying the premium for old age insurance, paying a portion of the premium for medical insurance etc. The group has also been trying to reemploy as many retrenched workers as possible through new projects in both the coal and the non coal sectors despite being severely constrained by the lack of capital, technology and skilled workforce.

The group has experienced difficulties due to the localized segmentation between the city and itself. Following the restructuring measures in the Coal Sector in 1998, the group is directly affiliated to the Henan provincial Government and not to the Jiaozuo city Government despite its location. Consequently the group has not been able to leverage Jiaozuo's recent economic growth fully.

It may be possible to structure a mutually beneficial relationship between the Government and the Jiaozuo Coal Group to achieve the targeted outcome of:

- Providing optimum support to the coal miners
- Improved financial performance of the Jiaozuo Coal group with minimum adverse socio-economic impact
- Lower cash outflows for both the Government and the Jiaozuo Coal group.

Some of the representative options which can be considered for this purpose include:

- The Government may endorse special policies to promote market driven reforms on property, management, operation and corporate structure to mould the Jiaozuo Coal Group into a modern profit oriented enterprise
- The local Government may assume some of the social responsibilities in relation to the erstwhile miners of the Jiaozuo Coal Group thereby relieving the Jiaozuo Coal Group of its burden to find its erstwhile employees with an alternative livelihood option and concentrate on its core activities
- The Government would also have to consider the establishment of a unified labour market and a harmonized social protection administration system
- The central Government may avail assistance from multi-lateral agencies like ADB under specific schemes like the Business Incubation Centre and on lending to the Jiaozuo Coal Group for setting up the ERC. The Government may request funding from the ADB. The principal objective of the JFPR is to help the poor and vulnerable in the society to build their capacities for self-help and income generation which is in consonance with the goal of the ERC to promote reemployment and self-employment among the displaced miners' community in Jiaozuo
- The central, provincial and the local Government may encourage the Jiaozuo Coal Group to sustain its young and vulnerable non-coal businesses through reduction in enterprise income tax subject to the group's success of absorbing a pre-defined proportion of surplus workers from its coal business.

- The steel industry in China has experienced a meteoric growth in recent years with direct support from the Chinese Government. One of the key supports to the steel sector has been in the form of providing loans from the state banks on non-commercial terms. The Government may wish to consider the possibility of introducing such “policy loans” to the Jiaozuo Coal group to expand its capacity in the non-coal sectors.
- At the moment, any employer who employs a retrenched worker receives a subsidy of RMB 200 per person per month. The Government may pay the Jiaozuo Coal Group a consolidated subsidy of RMB 1200 per year against reemployment of each displaced worker. The measure is expected to become an incentive for the Jiaozuo Coal Group for rehiring its erstwhile employees on one hand and would save the Government RMB 1200 against per worker hired by the coal group each year.
- The State Development and Investment Corporation, China’s largest state-owned investment holding company is planning to launch multiple new projects with top priority on resource saving and environmental protection during the 11th five year plan. The corporation plans to invest in the construction of 10 coal gangue fuelled power plants. The Government at both the central and the local level may consider liaising between the Jiaozuo Coal Group and the corporation and explore the possibility to setting up some of those power plants in the city leveraging its existing coal resources.
- The availability of abundant coal bed methane (CBM) resources might be leveraged to roll out CBM projects in the city. However, to implement the potential CBM projects foreign investment might be required. With foreign investments pouring in the country, the Government may liaise between the Jiaozuo Coal Group and representatives of foreign banks, companies and financial organizations.

## 7.6. Monitoring and Evaluation (M&E)

The principal aim for designing a monitoring and evaluation framework is to capture changes over time in key outcome indicators and track project implementation progress. Based on the activities carried out by the PwC team so far including field visits to Jiaozuo, meeting with concerned Government bodies and the Jiaozuo Coal Group and focused group discussions with the miners we propose a M&E system that could be implemented to monitor the achievement of the outcomes in the short, medium and long term and incorporating lessons that could be used for future projects. Figure 16 below presents the proposed M&E system.

**Figure 17: Monitoring and Evaluation system**

Narrative Summary	Means of Verification (MOV)	Objectively verifiable indicators (OVIs)	Assumptions
<p><b>Goal:</b> Minimize adverse socio-economic impact of coal sector restructuring in Jiaozuo</p>	Annual impact study conducted by an independent agency	% of unemployed workers from the displaced mining communities	The central, provincial and the local Government and the Jiaozuo Coal group’s commitment to facilitate coal sector restructuring in Jiaozuo with an emphasis on social and human development of the displaced miners
<p><b>Purpose:</b></p>			

<p>Redeploy displaced miners in alternate livelihoods</p>	<p>Annual impact study conducted by an independent agency</p>	<p>% of displaced miners redeployed in alternate livelihoods</p>	<p>Continued commitment for the key stakeholders to ensure alternate livelihoods for displaced miners; extend full support to the ERC to meet its objective</p>
<p><b>Output:</b></p> <p>Increased economic growth in Jiaozuo in the next five years</p> <p>Safety Net programme and the 3 guarantees scheme enable displaced workers' families to secure economic and social viability</p>	<p>Annual study on the GDP growth in Jiaozuo by year from 2006 – 2010</p> <p>Relevant Government departments' monthly monitoring progress reports and periodical impact studies conducted by the ERC</p>	<p>Socio-economic data on gross domestic product and per capita income of the city's inhabitants from 2006 - 2010</p> <p>% of eligible displaced miners received SSNP entitlements but became poorer due to a fall in income</p> <p>% of displaced workers who obtained MLSS</p> <p>% of children who remained at the primary and middle schools</p> <p>Admission rate for students in secondary schools and colleges</p> <p>Retrenched workers' family members who should be admitted to the hospitals after falling critically ill but could not afford the associated costs</p> <p>% of children in displaced workers' families under 12 months of age are immunized</p> <p>% of children in displaced workers' families under 12 years of age who are underweight</p>	<p>All proposed projects planned by the Jiaozuo Coal Group and the local Government are implemented</p> <p>The mandatory SSNP and 3 guarantees disbursements are paid to the eligible miners in time</p>

<p>Retrenched workers registers themselves at the ERC, get counseled and receive training in reemployment and self-employment</p>	<p>ERC's monitoring report</p>	<p>% of retrenched workers counseled / retrained obtain alternate employment within 12 months</p> <p>Reduction in wages from new employment / self-employment as against the old income</p>	<p>The ERC is successful in meeting its objectives to help displaced workers find alternative employment</p>
<p>Improving energy efficiency and protecting environment</p>	<p>Energy audit reports prepared by qualified provincial agencies</p>	<p>Key energy conservation projects rolled out in the city</p> <p>Energy consumption per unit of output value (energy consumption per unit of GDP) in Jiaozuo as against the national average</p> <p>% of reduced emissions of energy related pollutants (SO<sub>2</sub>, NO<sub>x</sub>) as against the national average</p>	<p>Strict adherence to and implementation of the guideline specified in the China Medium and Long Term Energy Conservation Plan by the National Development and Reform Commission China Medium in 2004</p>
<p>Improved environmental quality in Jiaozuo</p>	<p>Impact studies by the Jiaozuo municipal environmental protection bureau on environmental standards</p>	<p>Total generation of industrial waste per year in Jiaozuo as against the national average</p> <p>Total discharge of Chemical Oxygen Demand (COD) and amino-nitrogen in Jiaozuo</p>	<p>Improved awareness about environmental regulations and efficient supervision from the concerned Government bodies</p>

## 8. Annexure

### 8.1. Key findings from the study tour

The principal objective for organizing the study tour to the UK was to review Government policies and actions taken to mitigate social, economic and environmental impacts arising from the closure of coal mines in the country. Mr. Yang Jiang, Deputy Administrator of National Centre for International Exchange and Cooperation of China National Coal Association (CNCA) led a seven member delegation to the UK in April 2007. The other six members of the delegation were:

- Mr. Shen Tianliang, Director, Henan Coal Industry Bureau
- Mr. Lu Jutang, Vice General Manager, Zhengzhou Energy Development Co., Ltd., Coal Company of State Development and Investment Corporation (SDIC Coal)
- Mr. Wei Bingxian, Chairman, Zhengzhou Guangxian Industry and Trade Co., Ltd.
- Mr. Dong Songhui, Chairman, Zhengzhou Wanglou Coal Industry Company
- Mr. Meng Xianyi, Senior Engineer, Henan Yonghua Energy Co., Ltd.
- Mr. Xie Wenbo, Interpreter, International Cooperation Department, China National Coal Association (CNCA).

The delegation met representatives from the UK Department of Trade and Industry (DTI), senior staff from the UK Coal Industry Social Welfare Organization (CISWO) and visited four coal mines in the Rotherham area.

During its meetings with the DTI, the delegation was provided a detailed overview of the coal industry in the UK and was appraised of the primary responsibilities ascribed to the coal authorities. The delegation also discussed issues related to reduction of carbon dioxide (CO<sub>2</sub>) emissions, climate change etc with the DTI officials. DTI officials met by the delegation included:

- Mr. Brian Morris, Head, Energy Industries and Technologies Unit, Department of Trade and Industry
- Ms. Clare Harding, Assistant Director, Coal Policy, Department of Trade and Industry
- Mr. Wayne Ives, Policy Officer (Asia and Pacific), Climate Change and Energy Group, Foreign & Commonwealth Office
- Dr. Keith Burnard, Chief Technical Consultant, AEA Energy & Environment.

During its interactions with the Coal Industry Social Welfare Organization (CISWO) staff, the delegation was informed about the role of the organization in delivering community and personal welfare services within mining and former mining communities. It was mentioned that more than 5,000 people benefit every year from the one to one services provided by the organization's staff to enhance quality of life and reducing social exclusion with a particular focus on older people and those who are disadvantaged by ill health, disability or poverty. Delegates got an in-depth account of CISWO's innovative mechanisms to help communities help themselves via the establishment of one-stop-shops which provide services ranging from legal advice, education and training. The delegation was also informed that between the period 1995 & 2004, more than £30million has been accessed for community development projects under the Miners' Welfare Schemes with an aim to deliver services and raise community capacity with an aim to make significant contribution in the regeneration of the coalfields.

The delegation made a trip to the Rotherham district in Yorkshire to visit four erstwhile coalfields. Rotherham has traditionally been a coal mining district and at the turn of the twentieth century had a number of operational mines. Some of the mines included Wath on Dearne, Manvers, Cortonwood, Kilnhurst, Stubbin, Silverwood, Thurcroft, Dinnington, Maltby, Treeton, Orgreave, Brookhouse, Kiveton Park Colliery etc. However, the prosperity of the coal industry could not be sustained and many of the mines were closed down by the 1980s when it was found that coal could be landed in the UK from abroad at a cheaper rate than it could be mined locally. With the pits being closed, the coalfield community in Rotherham experienced soaring unemployment problems. However, measures taken by the UK

Government in the recent past has ensured that new jobs are created and former miners are re-trained to undertake new occupations. The delegation visited the erstwhile coalfields like the Corton Wood, Manvers, Thurcroft and Dinnington and was exposed to initiatives in relation to land reclamation and sustainable reuse, ecological rehabilitation, establishment of industrial zones and housing estates and how displaced miners were reemployed in those projects.

During the meetings and the field visits to the erstwhile coalfield areas in Rotherham, the delegation was informed about the sterling efforts of the British Coal Enterprise (BCE) to help displaced coal miners find alternative livelihood options during the period 1984 and 1996. The delegation was informed that the principal activities of the BCE included:

- Regenerating local economies affected by mine closure by promoting small business start ups
- Making funds available via Fast Track Loans up to 25,000 Pounds
- Developing and providing state of the art work spaces to house new units in abandoned coal mine sites
- Retraining workers in program like self marketing training, brick laying, welding, electrical repairing etc
- Running a comprehensive Social Safety Net Program.

The delegation was impressed by BCE's achievement in regenerating the local economies affected by the closure of coal mines and the number of displaced workers who got re-employment and became self employed.

The delegation learnt about the Government supported National Coalfields Programme which aims to assist former coalfield communities across England by creating new employment, homes and public space. The delegation also got to know about the Coalfields Enterprise Fund, a commercial venture capital fund set up exclusively to encourage and foster the growth of new businesses and entrepreneurship in former coalfield areas of the country.

### **Recommendations**

- a) The delegation appreciated the efficient legal system that was put into place for economic transformation of the erstwhile coal mining areas in the UK. Carefully drafted regulations, policies and plans such as the "Privatization Plan of Coal Industry", "Prospect of the Coal Industry" and Jobs and Career Change Scheme" contributed a lot to the successful restructuring of the coal industry. The delegation feels that although the Chinese Government has started to formulate development policies from the early 1980s, in many cases there is scope for improvement as far as implementation is concerned. The delegation's suggestion to the Chinese Government would be to determine the significance of coal sector restructuring in the context of the national economy and then act appropriately via proper legislation. The delegation would also like to stress on the importance of having a seamless relationship between the local Governments and the central Government.
- b) The delegation recommends involving the private sector more in the coal industry of PRC. It feels that increased commercialization of the sector needs to be encouraged and the Government of PRC would have think of ways to attract private sector investment in the coal industry to expand capacity and promote sustainable development.
- c) The delegation feels that PRC needs to be innovative in its efforts to provide alternative livelihood options to the displaced miners. In the UK, the delegation was exposed to several innovative measures including that of Agecroft mine located in the north east of Manchester. In 1996, the Government decided to reuse a section of the coalfield. Today it has transformed this area into a busy business district and logistic centre. The delegation proposes that the Chinese Government opt for similar innovative measures tailored to the local economy.
- d) The British Government, following the contraction of the coal industry undertook focused efforts to develop the medium and small scale enterprises by offering preferential loans, providing training

opportunities to displaced miners etc. The Chinese Government too should promote the development of medium and small scale enterprises by creating a favorable business environment with an aim to encourage entrepreneurship in coal mining areas of the country.

## **8.2. List of people met in the kick off meeting, the two field visits and the two workshops**

### **8.2.1. Kick off meeting in Beijing**

Hu Yuhong, Deputy Director, National Centre for International Exchange & Cooperation in Work Safety  
Teruhisa Oi, Project Officer, Asian Development Bank  
Li Zhongmin, Senior Officer, State Administration of Work Safety  
Arindam Guha, Partner / Project Leader, PricewaterhouseCoopers India  
Allan Zhang, International Economist / Project Manager, PricewaterhouseCoopers Zhongtian  
Dr. B.B Patel, International Social Security Expert, Team Member  
Shi Qingyan, Domestic Economist, Team Member  
Tang Jun, Domestic Poverty Alleviation Expert, Team member  
Wu Xiaohua, Domestic Environmentalist, Team member  
Liu Wenge, Domestic Coal Mining Expert, Team member

### **8.2.2. First field visit to Jiaozuo**

#### **List of people met from the Jiaozuo Coal Group on 16 August, 2006**

Mr. Miao Hegen, Deputy General Manager of JCGC  
Ms. Zhang Ruixia, Head of Women Affairs Department  
Mr. Li Cheng Gui, Deputy Director of Social Security Centre  
Mr. Xin Wenping, Section Chief of Survey Department  
Mr. Jin Jianping, Deputy Director of System Reform Office  
Ms. Wang Xiuqin, Assistant Researcher of Finance Department  
Ms. Wang Yulin, Deputy Director of Personnel Department  
Ms. Fan Xiaojing, Deputy Director of Planning and Development Department  
Mr. Lu Zhengping, Assistant Researcher of Planning and Development Department  
Mr. Wu Gang, Section Chief of Planning and Development Department  
Mr. Pan Xiaosong, Statistician of Planning and Development Department

#### **List of participants at the meeting held in the Zhongma Mine on 16 August, 2006**

Mr. Yuan Chongjiang, Deputy Managing Director  
Mr. Niu Quanjie, Chief Engineer  
Mr. Liu Li, Deputy Head of Finance Division  
Mr. He Zhongkai, Deputy Section Chief of Technical Division  
Mr. Miao Jingchun, Section Chief of Planning Division  
Mr. Wang Zhenghua, Party Secretary of Coal Selection Plant  
Mr. Wang Xian, Section of Labour and Salary  
Mr. Liu Cunjie, Party Secretary of Machinery & Power  
Mr. Zhang Xiaolu, Party Secretary of Driving Field 2  
Mr. Jin Haijun, Party Secretary of Mining Field 1

#### **List of participants at the meeting held in the Xinzhuochun Industrial Company on 16 August, 2006**

Mr. Zhang Changming, Party Secretary and President  
Mr. Xie Wenming, General Manager  
Mr. Xu Keming, Deputy General Manager  
Mr. Li Changsong, Chief Engineer  
Mr. Xue Peigang, Section Chief of Technical Division  
Mr. Guo Likun, Section Chief of Planning Division

Mr. Li Guoping, Head of Administration Office  
Mr. Shi Jingli, Section Chief of Labour and Salary

**List of participants at the information collection and project briefing session with the Jiaozuo Municipal Government on 17 August, 2006**

<b>Government Department</b>	<b>Name of the participant</b>	<b>Designation</b>
National Reform and Development Commission (NDRC)	Mr. Zhai Yaonan	Deputy Director
DNRC	Mr. Sun Xinyi	Section Chief
Jiaozuo Coal Group Company	Mr. Liu Mindong	Deputy Chief
Department of Finance	Ms. Xing Ling	Section Chief
Department of Environmental Protection	Mr. Wang Gexin	Deputy Director
Department of Environmental Protection	Mr. Sun Xinshun	Deputy Section Chief
Department of Enterprises	Mr. Zhang Yupu	Assistant Researcher
Department of Enterprises	Mr. Li Duanyang	Deputy Section Chief
Department of Civil Affairs	Mr. Wang Zhongcun	Deputy Section Chief
Department of Labour, Employment and Social Security	Mr. Xu Changqiang	Deputy Director
Department of Labour, Employment and Social Security	Mr. Xin Zelin	Section Chief
Department of Statistics	Ms. Xin Xianfen	Deputy Section Chief
Office of Poverty Alleviation	Mr. Wang Shengli	Section Chief
Department of Land and Resources	Guo Jianming	Section Chief

**8.2.3. Second field visit to Jiaozuo**

**List of people met in Jiaozuo on 7 & 8 November, 2006**

Huang Shengchu, Dean, State Administration of Work Safety Information Centre  
Liu Shunzhang, Staff, State Administration of Work Safety Information Centre  
Li Fenglin, Department Head, Henan Province Administration of Work Safety of Coal Mining  
Yan Qinglin, Deputy Department Head, Henan Province Administration of Work Safety of Coal Mining  
Wang Minsheng, Deputy Secretary-general, Jiaozuo Municipal Government  
Zhao Junsheng, Section Chief, Secretary Section1 of Jiaozuo Municipal Government  
Zhang Jian, Deputy Dean, Jiaozuo Development & Reform Commission  
Cheng Yuguo, Deputy Bureau Chief, Jiaozuo Financial Bureau  
Zhang Xuliang, Deputy Bureau Chief, Jiaozuo Administration of Work Safety Bureau  
Wang Gexin, Deputy Bureau Chief, Jiaozuo Environmental Protection Bureau  
Ye Zhaohe, Deputy Bureau Chief, Jiaozuo Land & Resources Bureau  
Meng Xiaojun, Deputy Bureau Chief, Jiaozuo Enterprises Service Bureau  
Zhang Jinpin, Deputy Dean, Jiaozuo Anti-poverty Office  
Miao Hegen, Deputy General Manager, Shanxi Coking Coal Group Co., Ltd.  
Xu Kuisheng, Deputy Department Head, HR Department of Shanxi Coking Coal Group Co., Ltd.  
Li Chenggui, Deputy Dean, Social Welfare Centre of Shanxi Coking Coal Group Co., Ltd.  
Lu Yonggan, Deputy Department Head, Technical Centre of Shanxi Coking Coal Group Co., Ltd.  
Jin Shengli, Department Head of Social Security, Worker Union of Shanxi Coking Coal Group Co., Ltd.

**Representatives from CNCA and Asian Development Bank**

Hu Yuhong, Deputy Dean, National Centre for International Exchange & Cooperation in Work Safety  
Lei Zhigang, Translator, National Centre for International Exchange & Cooperation in Work Safety  
Teruhisa Oi, Project Officer, Asian Development Bank

## **Project Team**

Dr. B.B Patel, International Social Security Expert, Team Member  
Allan Zhang, International Economist / Project Manager, PricewaterhouseCoopers Zhongtian  
Anirban Chatterjee, Team Member, PricewaterhouseCoopers India  
Tang Jun, Domestic Poverty Alleviation Expert, Team member  
Wu Xiaohua, Domestic Environmentalist, Team member  
Liu Wenge, Domestic Coal Mining Expert, Team member

### **8.2.4. First workshop in Beijing**

#### **Chinese Government Agencies and Jiaozuo Coal Group**

Mr. Zhang Ji Wu, Director-General, Bureau of Enterprise Restructuring, State-owned Assets Supervision and Administration Commission of the State Council (SASAC)  
Mr. Zhang Yong, Director of Policy Research Department of China National Coal Association (CNCA)  
Mr. Zhang Hong, Deputy Administrator of Policy Research Department, CNCA  
Ms. Zhang Ping, Project Officer, Department of International Cooperation Department, Ministry of Finance, PRC  
Mr. Du Yuxi, Deputy Administrator, Coal Industry Administration Bureau of Henan Province  
Mr. Sun Xinyi, Section Chief, Development and Reform Commission of Jiaozuo City, Henan Province  
Mr. Sheng Tianbao, Vice President, Jiaozuo Coal Industry Group (JCIG)  
Mr. Lv Zhenping, Director, Planning and Development Department of JCIG

#### **Project EA team**

Ms. Hu Yuhong, Deputy Director-General, National Centre for International Exchange and Cooperation, CNCA  
Ms. Su Chuanrong, Deputy Director, National Centre for International Exchange and Cooperation, CNCA  
Ms. Wang Luona, Administrator, National Centre for International Exchange and Cooperation, CNCA  
Mr. Xie Wenbo, Project Officer, National Centre for International Exchange and Cooperation, CNCA

#### **PwC project team members:**

Mr. Allan Zhang, Project Team Leader and International Economist  
Mr. Tang Jun, Domestic Poverty Alleviation Expert  
Ms. Wu Xiaohua, Domestic Environmental Expert  
Mr. Shi Qingyan, Domestic Economist  
Mr. Liu Wenge, Domestic Coal Industry Expert

### 8.3. Job Descriptions of the ERC employees

#### I. Centre Manager for the ERC

<b>Designation</b>	<b>Centre Manager of the ERC</b>	<b>Location</b>	Jiaozuo city
<b>Reports to</b>	Concerned officer in the Jiaozuo Coal Group	<b>Reportees</b>	3

<b>A. Job Description</b>
<b>Job objectives:</b> To ensure the efficient functioning of the ERC to meet its objectives of redeploying and self-employing as many displaced miners from the Jiaozuo city as possible. Liaise with the potential employers to find out about potential job opportunities on one hand and ensure that the retrenched workers get their entitlements in time.
<b>Key Responsibilities:</b>
a) Publicize the services offered by the ERC to the displaced miners by using the media like the local radio stations, newspapers and brochures created in Chinese with the help of the other 3 employees of the centre
b) Initiate and lead the process of developing the database of laid off workers and update their profiles following the evaluation of their skills and aptitude for jobs
c) Use the database to ensure that all statutory entitlements are paid to the workers in time
d) Meet, liaise with potential employers to understand the job market and use that information to ensure that the training courses available to the displaced workers are market driven
e) Identify and liaise with external training institutions which already offer market driven courses to leverage that for the displaced workers
f) Explore the opportunities in the pipeline against which the displaced workers could be redeployed and disseminate the information with the workers with the goal of eventually moving towards the creation of an employment information network
g) Conduct seminars with participation from industry experts, potential employers and workers who were successfully redeployed to share potential job opportunities, success stories etc
h) Evaluate business ideas submitted by the workers intent to start their own small businesses and approve those with a potential
i) Help the workers whose business ideas get approved with the documentation process required by the borrowing financial institutions
j) Liaise with the commercial banks and other financial institutions who lend small business loans to start-up ventures and try to ensure that applications received for small business loans received via the ERC gets a preference during the processing stage
k) Provide periodical reports to the Jiaozuo Coal Group and other concerned governing bodies about the

<p>activities of the ERC with a special emphasis on the number of workers who register at the centre, the number of workers who get counseled, the number of workers who opt for the training courses and the proportion of workers who finish the course and most importantly the number of workers who get redeployed following training and the number of workers who received small business loans and becomes self-employed</p>		
<p><b>Key Performance indicators:</b></p> <p>a) Number of registrations by retrenched workers at the ERC following the publicity campaign in the affected community  b) Number of potential employers met and X number of probable opportunities sourced  c) Number of retrenched workers' details added to the database  d) Number of workers who received help from the ERC to receive their statutory entitlements  e) Number of workers who got themselves trained at the training institutions  f) Number of workers who have submitted their business ideas to the ERC  g) Number of business proposals approved by the ERC and another X number of proposals which received loans from the financial institutions / commercial banks  h) Number of workers who became self-employed  i) Number of workers who were re-deployed in new jobs post training</p>		
<p><b>B. Internal and External Contacts:</b></p>		
<p><b>Internal Contacts</b></p>		
Sl. No.	Name of Department / Contact Person	Nature and Purpose of Contact
1.	Counselors of the ERC	Daily interactions to get an update on the registrations being done at the ERC, the number of workers who have been counseled and the proportion which has opted for a training etc
2.	Office Assistant of the ERC	Periodical interactions to understand how the displaced mining community perceives the ERC and whether a change in strategy to reach out to as many workers as possible is required
<p><b>External Contacts</b></p>		
1.	Placement Bureau of Jiaozuo City	Periodical interactions to find out about the jobs that are on offer
2.	Relevant departments within the Government disbursing the Old Age Insurance, MLSS etc	Interactions as and when required to report the incidences of eligible retrenched workers not getting their entitled payments etc
3.	Jiaozuo Coal Group	Interactions as and when required to report incidences of retrenched workers maintaining their relationship with the company not getting their basic living allowance etc
4.	HR Departments of Companies based in Jiaozuo etc	Periodic meetings to understand the job market scenario, jobs that are on offer and the possibility of redeploying the registered miners at the centre
5.	Provincial placement bureaus in Henan and Shanxi provinces	Occasional interactions to understand if there is a requirement against which the displaced miners from Jiaozuo could be redeployed.

## II. Counselors for the ERC

<b>Designation</b>	<b>Counselor</b>	<b>Location</b>	Jiaozuo city
<b>Reports to</b>	Centre Manager	<b>Reportees</b>	1
<b>A. Job Description</b>			
<b>Job objectives:</b> Provide financial, psychological and redeployment to the displaced workers from the coal sector in Jiaozuo. Conduct personality tests on the workers and understand their needs and concerns. Help the workers explore the opportunities available to them both in terms of redeployment and self-employment through skill upgradation.			
<b>Key Responsibilities:</b>			
a) Help the centre manager to the publicity efforts to spread the word about the services available from the ERC to the displaced workers			
b) Instill confidence and try to convince the displaced workers who come to the ERC to register themselves for a counseling session			
c) Understand the workers concerns, apprehensions about their existing skills and their chances of getting redeployed; share examples with them about people who have been retrained and redeployed and self-employed and highlight initiatives such as the Tianjin Women Business Incubator programme			
d) Populate the database of retrenched workers following registrations and document the number of people who opt for the counseling session and the proportion of workers who go on to enroll themselves for the training courses			
e) Appraise them about the training courses available to upgrade their skills and how that would increase their chances of getting redeployed in a new job or start their own businesses			
f) Counsel workers with a slim chance of getting redeployed about the option of starting their own businesses and share examples of people who have followed the same route and have become successful			
g) Help the centre manage document and archive the list of opportunities made available to the workers by the centre and the proportion of success against them			
h) Follow up with the potential employers over the phone following the centre manager's visit			
i) Maintain a list of people successfully trained and subsequently redeployed and self-employed and invite them periodically to come to the centre and address a group of displaced workers			
j) Meet the spouses of the displaced workers and assess their potential for augmenting the family income following skill building through courses in nursing, small handicrafts etc			
k) Interact with the office assistant (proposed to be a displaced miner) on a regular basis to understand the ground realities and use his contacts to reach out to the distressed community			
l) Help the centre manager to prepare his periodical reports about the ERC to be submitted to the governing bodies			
<b>Key Performance indicators:</b>			
a) Number of people who have been appraised about the ERC and the services it offers			

b) Number of registrations for counseling sessions c) Number of workers counseled over the course of a month d) Number of workers who have undergone the personality test e) Number of retrenched workers' details added to the database f) Number of workers who have been convinced to pursue a training course g) Number of family members of the workers met, counseled and convinced to take up a training course to augment family incomes		
<b>B. Internal and External Contacts:</b>		
<b>Internal Contacts</b>		
Sl. No.	Name of Department / Contact Person	Nature and Purpose of Contact
1.	Centre Manager, ERC	Daily interactions to update the centre manager on the number of workers availing the services of ERC, number of people counseled etc
2.	Office Assistant, ERC	Daily interactions to get an update on the displaced miners and understand the concerns of the worker to be counseled wherever possible
<b>External Contacts</b>		
1.	Placement Bureau of Jiaozuo City	Periodical interactions to find out about the jobs that are on offer
2.	HR Departments of companies based in Jiaozuo	Periodical interactions to follow up the centre manager's visit

### III. Office Assistant for the ERC

<b>Designation</b>	Office Assistant	<b>Location</b>	Jiaozuo city
<b>Reports to</b>	Centre Manager / Counselors	<b>Reportees</b>	NA

<b>A. Job Description</b>
<b>Job objectives:</b> Take part in the publicity campaign to make retrenched workers aware of the existence of the ERC and the support it can provide. Act as the first level of contact at the ERC for the displaced workers. Understand workers' concern and apprehensions and update the counselors accordingly.
<b>Key Responsibilities:</b>
a) Help the centre manager and the counselors in the publicity efforts to spread the word about the services available from the ERC to the displaced workers
b) Visit the mining community, spread awareness and try to convince the displaced workers who come to the ERC to register themselves for a counseling session
c) Understand the workers concerns, apprehensions about their existing skills and their chances of getting redeployed and share it with the counselors before the actual counseling sessions wherever possible

d) Collect feedback on the ERC and its services from the mining community from the workers and the mining community on a informal basis and share the findings with the counselors and the centre manager		
e) Assist the counselors and the centre manager with office work on a daily basis		
<b>Key Performance indicators:</b>		
a) Number of people who have been appraised about the ERC and the services it offers		
b) Number of registrations for counseling sessions		
<b>B. Internal and External Contacts:</b>		
<b>Internal Contacts</b>		
Sl. No.	Name of Department / Contact Person	Nature and Purpose of Contact
1.	Counselors, ERC	Daily interactions to provide an update on the displaced miners and appraise the counselors about their concerns and expectations
2.	Centre Manager, ERC	Periodical interactions to share findings on how the displaced mining community perceives the ERC
<b>External Contacts</b>		
1.	Displaced miners in the mining community of Jiaozuo	Periodical interactions to make them aware of the ERC on one hand and share their thoughts with the Centre Manager and the Counselors on the other

#### 8.4. Proposed projects with a potential for funding from ADB and others

Project / Sector	Estimated capacities & investment	Potential funding resources	Rationale
Power generation from coal gangue	2*135 MW; RMB 1.8 billion	Jiaozuo Coal group, ADB and other multilateral agencies, State Development & Investment Corporation, China; commercial banks, private investors	<ul style="list-style-type: none"> <li>In consonance with key Government objectives of sustainable environment friendly industrial development through consumption of around 800,000 tons of gangue per year, leading to reduced CO2 emissions of around 300,000 tons. It is also estimated that the annual saving of coal would be around 350,000 tons</li> <li>Significant demand likely for electricity, with projected capacity of 8,000 MW by end of the 11th five year plan</li> <li>Availability of specific credit lines for financing, given environment friendly nature of the project</li> </ul>
Coal Mine Methane (CMM) residential use project through installation of gas holders, transmission & distribution network etc	Increasing the utilization levels of CMM from Mn. Cu.m. to 20 mn cu.m.; RMB 53 million	Jiaozuo Coal Group, ADB & other multilateral agencies	<ul style="list-style-type: none"> <li>Improving environment compliance levels, mine safety and augmenting the Jiaozuo Coal Group's revenues through gas sales</li> <li>Residential demand for gas is expected to increase from around 30 cu.m. currently to around 100 cu.m. by 2010</li> <li>Availability of specific credit lines for financing, given environment friendly nature of the project</li> </ul>
Land reclamation and reuse	Treated land area of 82 sq.km; RMB 1200 – 1300 million	Jiaozuo Coal Group, private sector investors, commercial banks	<ul style="list-style-type: none"> <li>In consonance with key Government objectives of environmental regeneration and local economic development</li> <li>Significant demand for residential and commercial real estate</li> <li>Utilize the potential of eco-tourism in Jiaozuo and realize the Government's aim to promote tourism as one of the chief contributors to Jiaozuo's economy</li> </ul>
Coal Bed	7 MW; 160.5 million	Jiaozuo Coal	<ul style="list-style-type: none"> <li>In consonance with the</li> </ul>

Methane (CBM) gas project to generate electric power	RMB	Group, ADB and other multilateral agencies, private investors, commercial banks	<p>Government's aims to reduce the effects of green gas caused by the emission of methane and improve the environmental standards of Jiaozuo</p> <ul style="list-style-type: none"> <li>• Significant demand for electricity within the next five years from both residential and commercial users</li> <li>• Availability of specific credit lines for financing, given environment friendly nature of the project</li> </ul>
Production of building materials from coal gangue and coal ash	Annual capacity building of concrete building blocks of 500,000 m <sup>3</sup> ; 60 million RMB	Jiaozuo Coal group, ADB and other multilateral agencies, private investors, commercial banks	<ul style="list-style-type: none"> <li>• Utilize coal gangue and coal ash efficiently thereby decreasing pollution levels in the city</li> <li>• Availability of specific credit lines for financing, given environment friendly nature of the project</li> </ul>