

THE INDONESIAN MINERAL RESOURCES DEVELOPMENT AND ITS ENVIRONMENTAL MANAGEMENT TO SUPPORT SUSTAINABLE NATIONAL DEVELOPMENT

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- **INTRODUCTION**
- **ENERGY RESOURCES DEVELOPMENT**
- **MINERAL RESOURCES DEVELOPMENT**
- **ENVIRONMENTAL POLICY IN MINING SECTOR**
- **CONCLUSION**

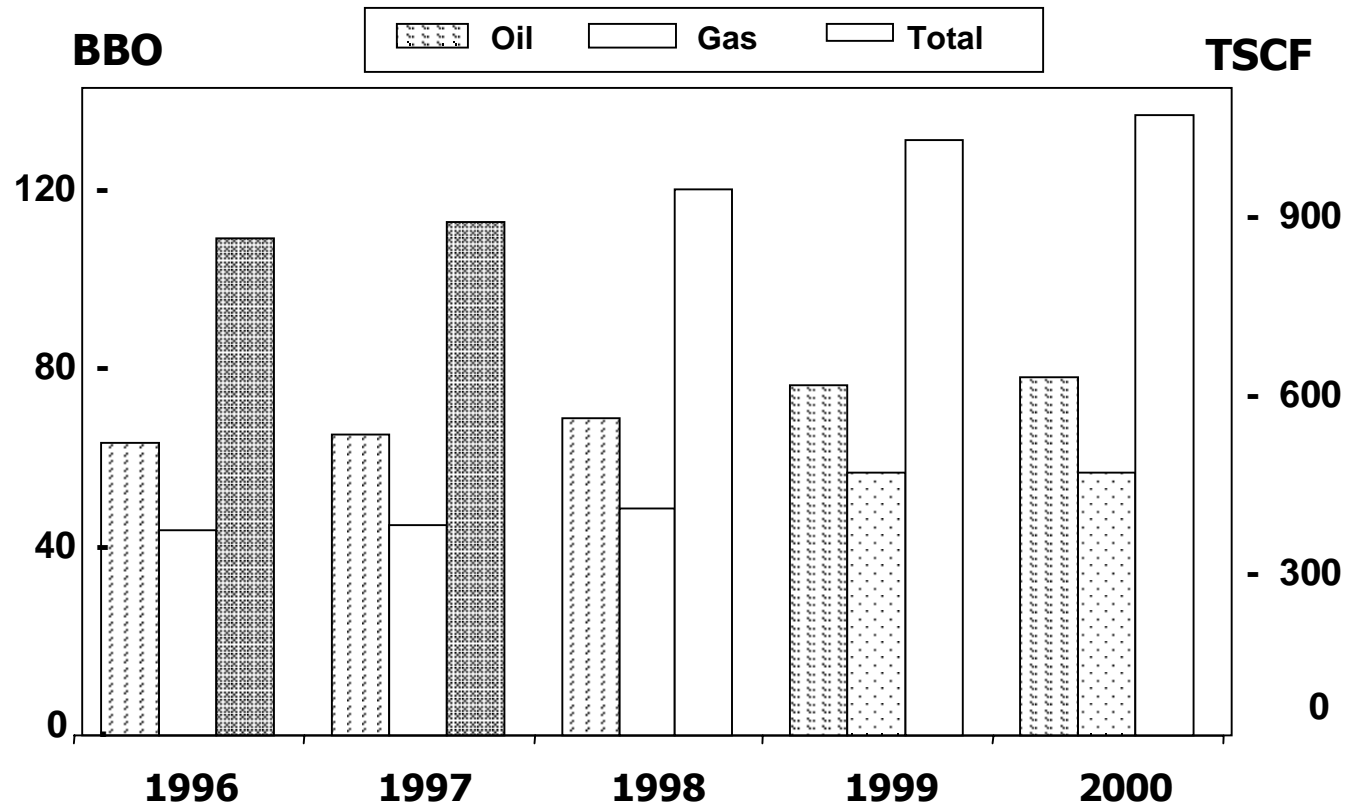
INTRODUCTION

- **Geological prospectivity of Indonesian Mineral Resources**
 - E & M resources occurrence = F (Geology)
 - Uneven distribution of mineral resources ⇒ Rich, partially rich, & poor regions
 - Indonesia may be classified into mineral rich region
- **Significance of mineral resources**
 - Various everyday life tools
- **Mineral resources development and its environmental impact**
- **Mutual benefit : economic interest and environmental protection**

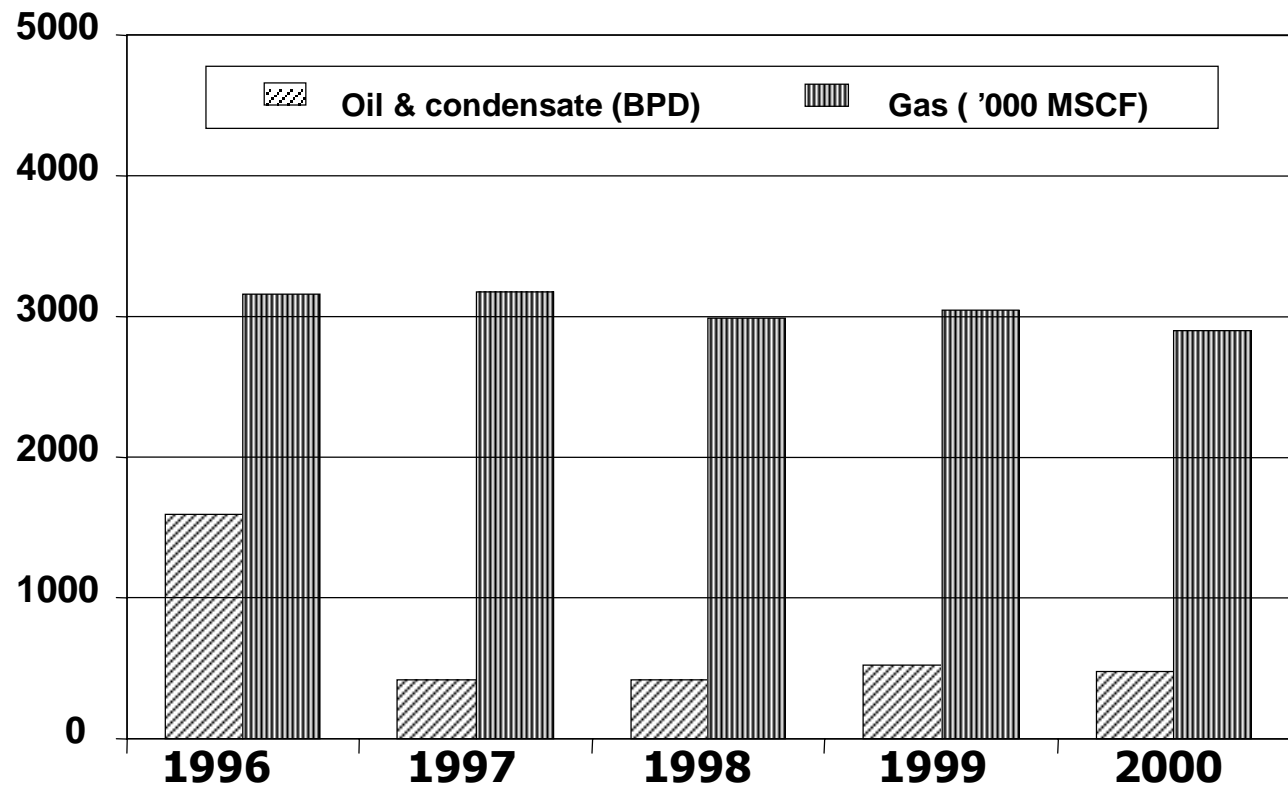
ENERGY RESOURCE DEVELOPMENT

- **Oil resources : 60 Hydrocarbon basins**
 - 38 Explored ⇒ 15 producing
 - 22 not explored
 - Recent discovery in old fields
- **Oil is back bone Indonesian economy ⇒ Its role must be reduced**
- **Gas : 2nd best energy source & substantial resource**
- **Oil and Gas : resources, production and investment
⇒ Back bone of petrochemical industry**
- **Coal & geothermal : other prospective energy source**
- **Use of renewable energy : need to be intensified**

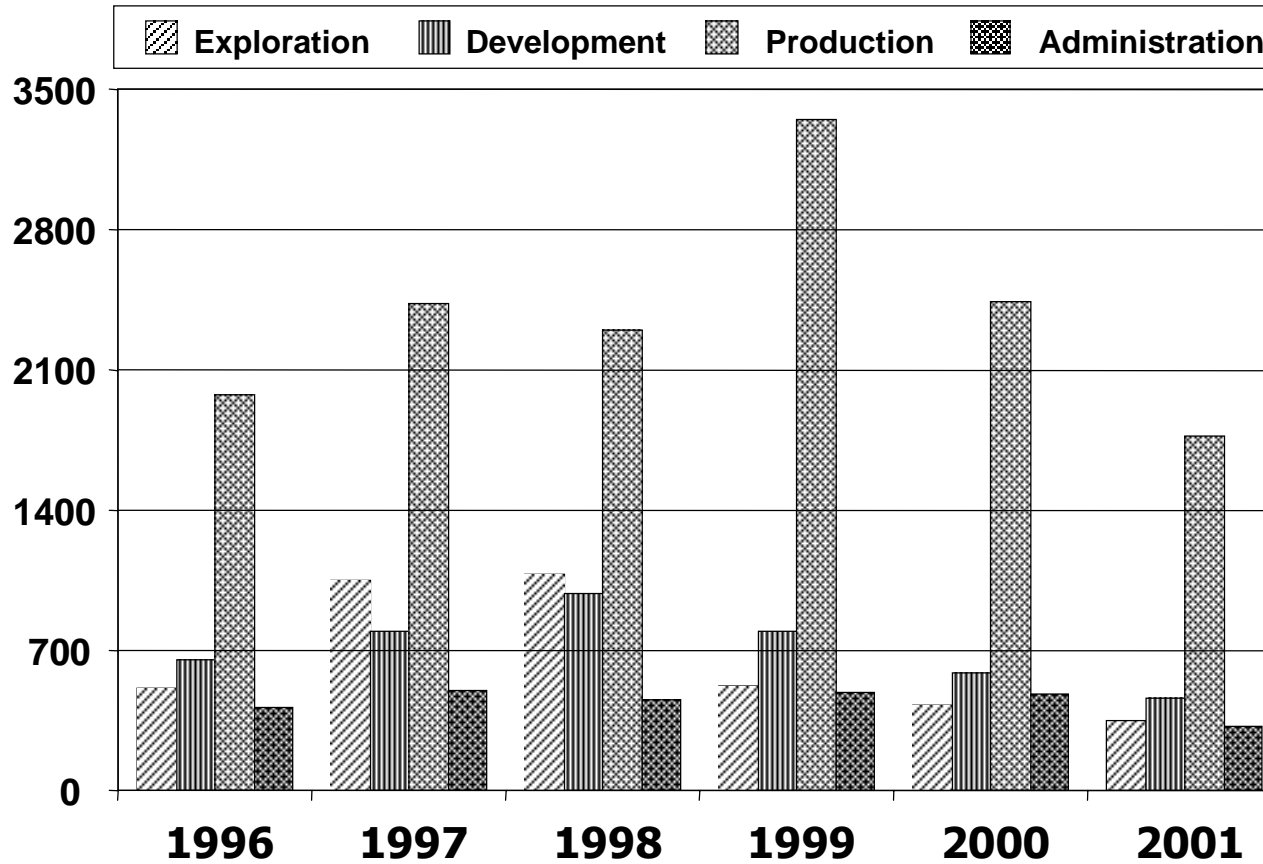
Oil and Gas Resources Development



Oil and Gas Production



Investment figure (US\$ millions)



MINERAL RESOURCES DEVELOPMENT

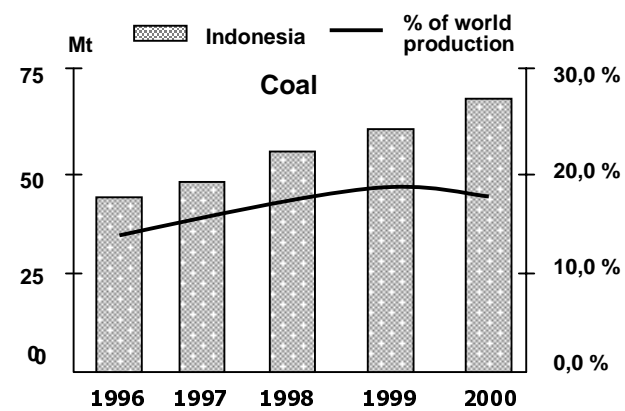
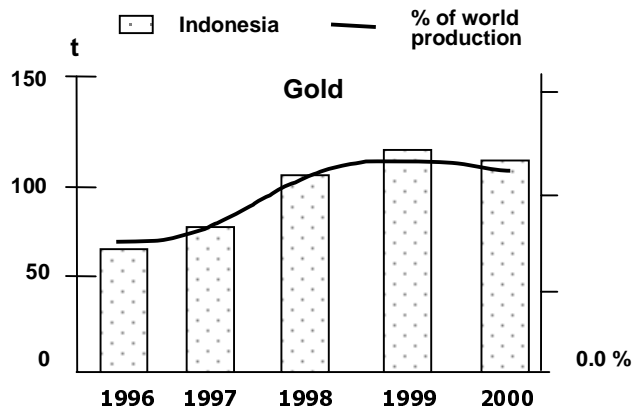
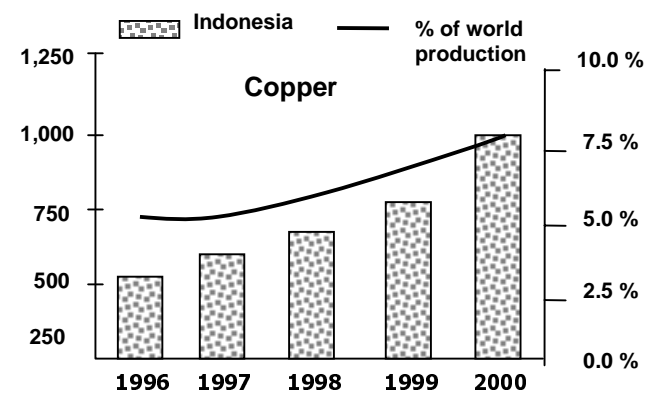
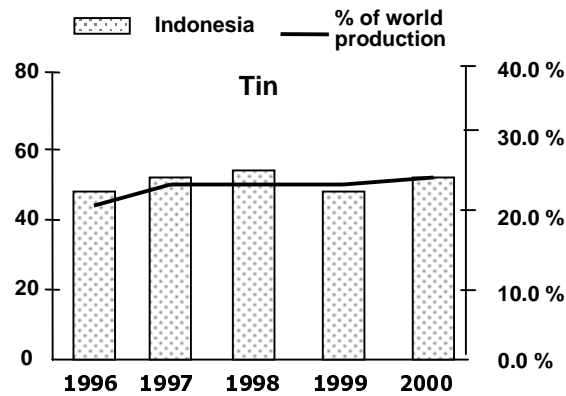
- **Production and revenue**
- **Employment and contribution to public interest**
- **Effect of economic crisis**
 - Severe depreciation of Indonesian currency against US\$
 - Mining industry deals with export, and spending cost in local currency
 - Economic crisis does not seriously affect national mining industry
 - Economic crisis was followed by political crisis ⇒ deterioration of law and order
⇒ unrest situation, illegal mining operation
 - Uncomfortable situation in mining industry development
 - Exploration slow down : no new mineral discovery & no new mining development
 - Discouraging regulations : Decentralization, New Forestry Law

MINERAL RESOURCES DEVELOPMENT

● Attractive mining investment

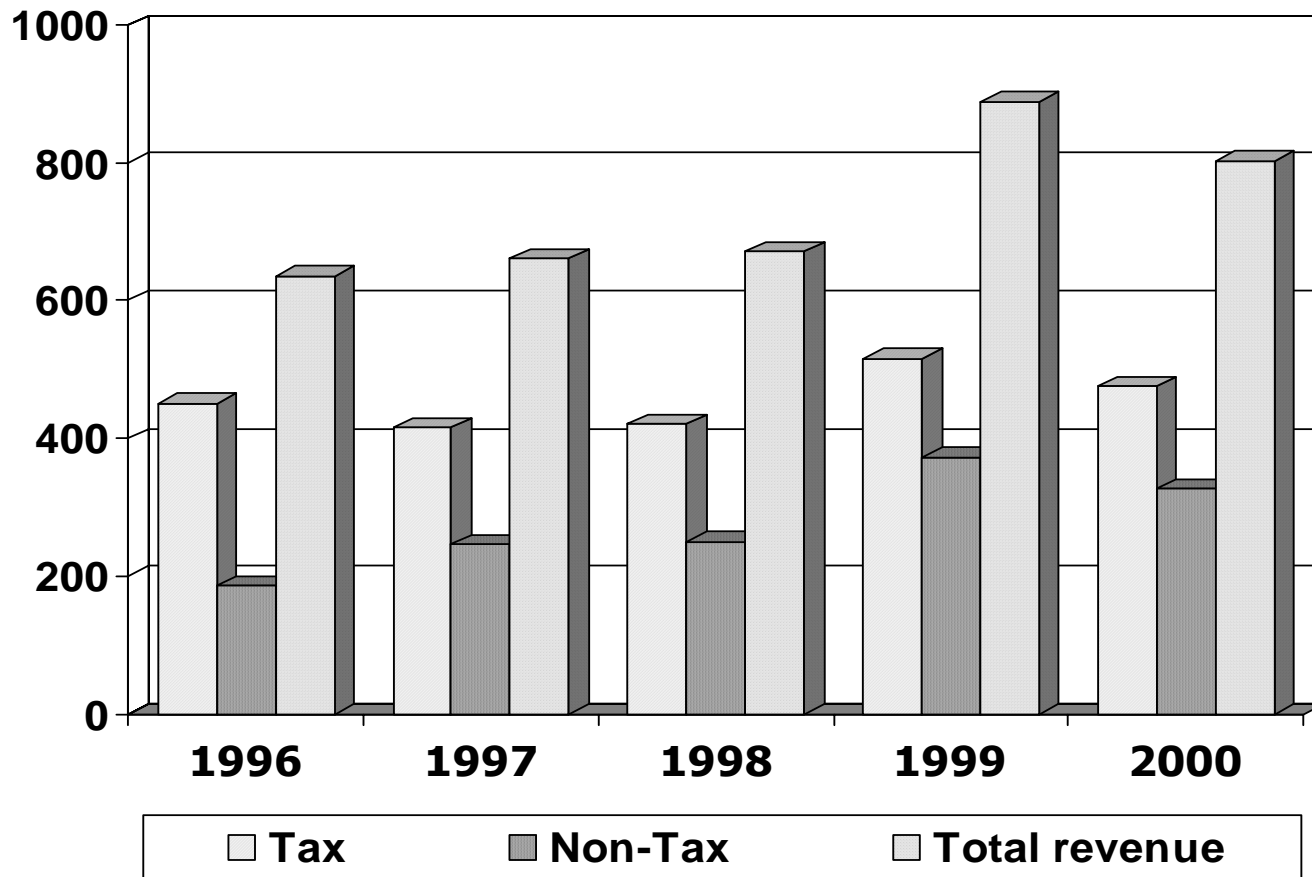
- Mineral resource is another potential economic contributor
- Tin, nickel, copper, gold, bauxite and coal are produced from world class deposits
- Most Indonesian territory has not been explored well ⇒ More discoveries may occur
- General Mining Law No 11 of 1967 has increased mineral sector investment
- Type of mineral title :
 - Contract of Work (CoW) : mineral for foreign investor
 - Coal Contract of Work (CCoW) : domestic and foreign investors
 - Mining authorization (MA) : mineral and coal for domestic investor
 - Letter of Regional Mining Permit (LRMP) : industrial mineral and rocks for local investors
- In 90's Indonesia is attractive countries in mineral investment (rank 4th)
- Until 2000 : 235 CoW, 119 CCoW and 597 MA were issued, and US\$ 12 billions total investment
- CoW and CCoW are key drivers of mining sector development

Production of Tin, Nickel, Copper, Gold and Coal

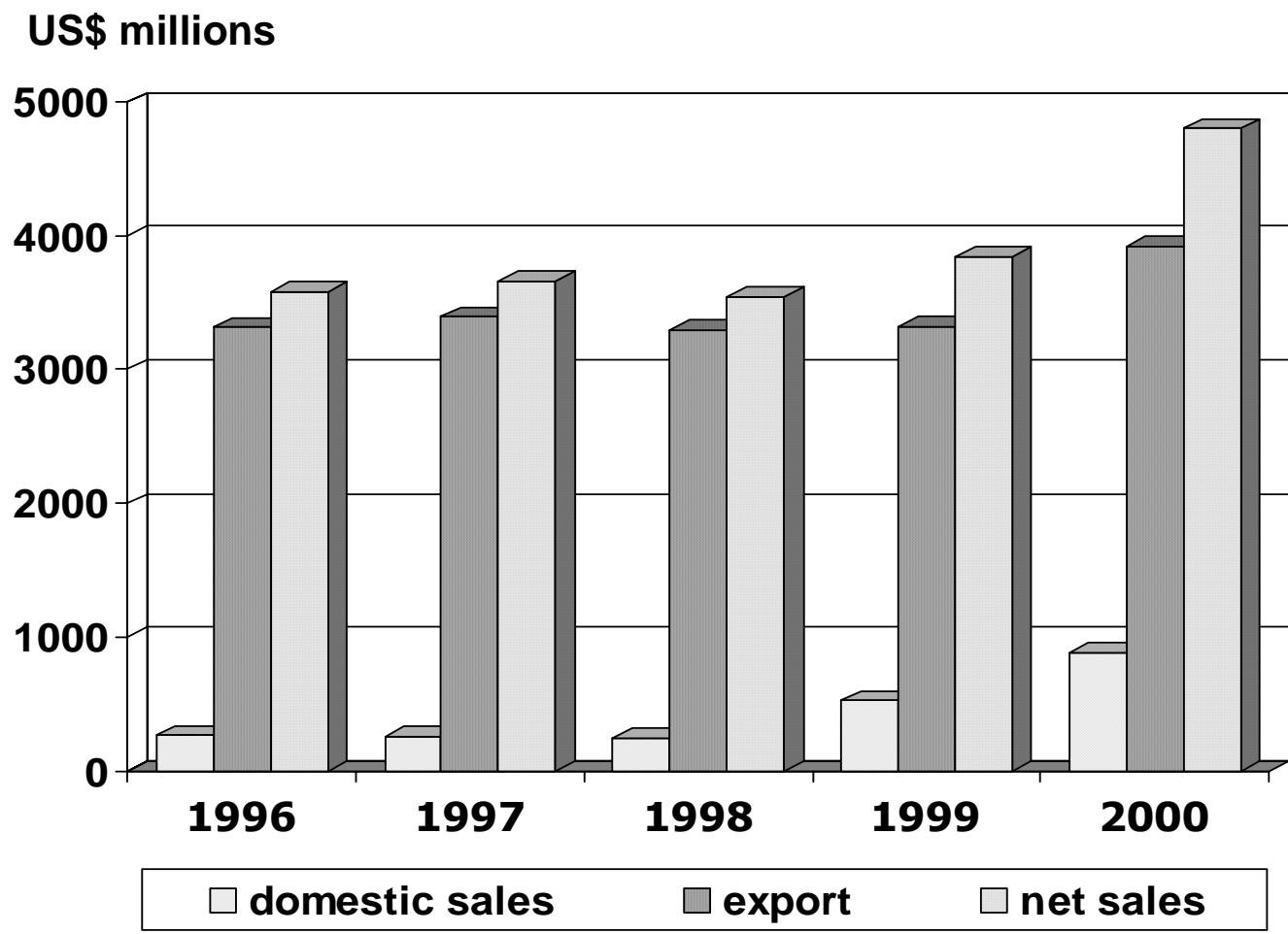


GOVERNMENT REVENUE FROM TAX AND NON-TAX

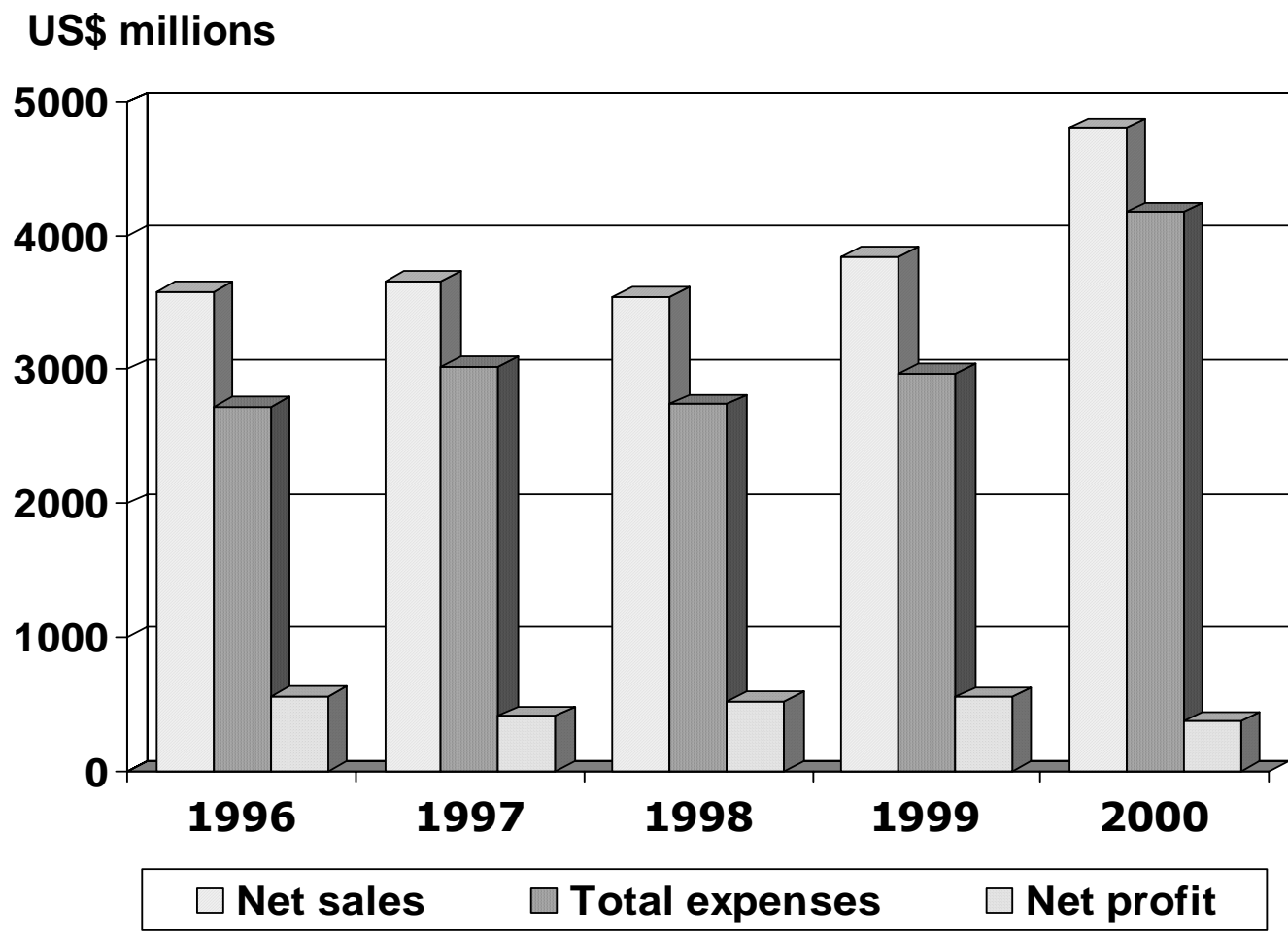
US\$ millions



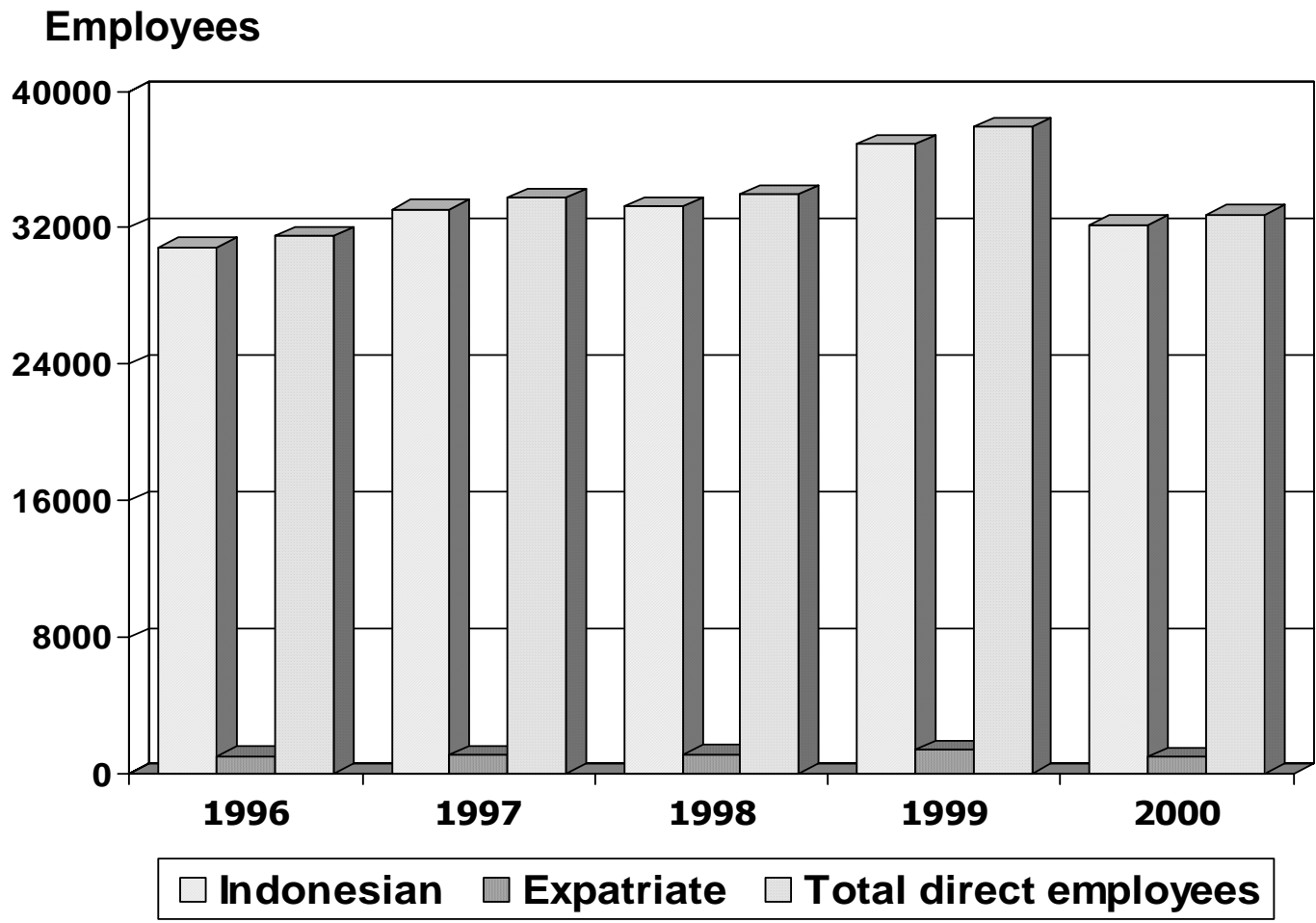
SALES PERFORMANCE



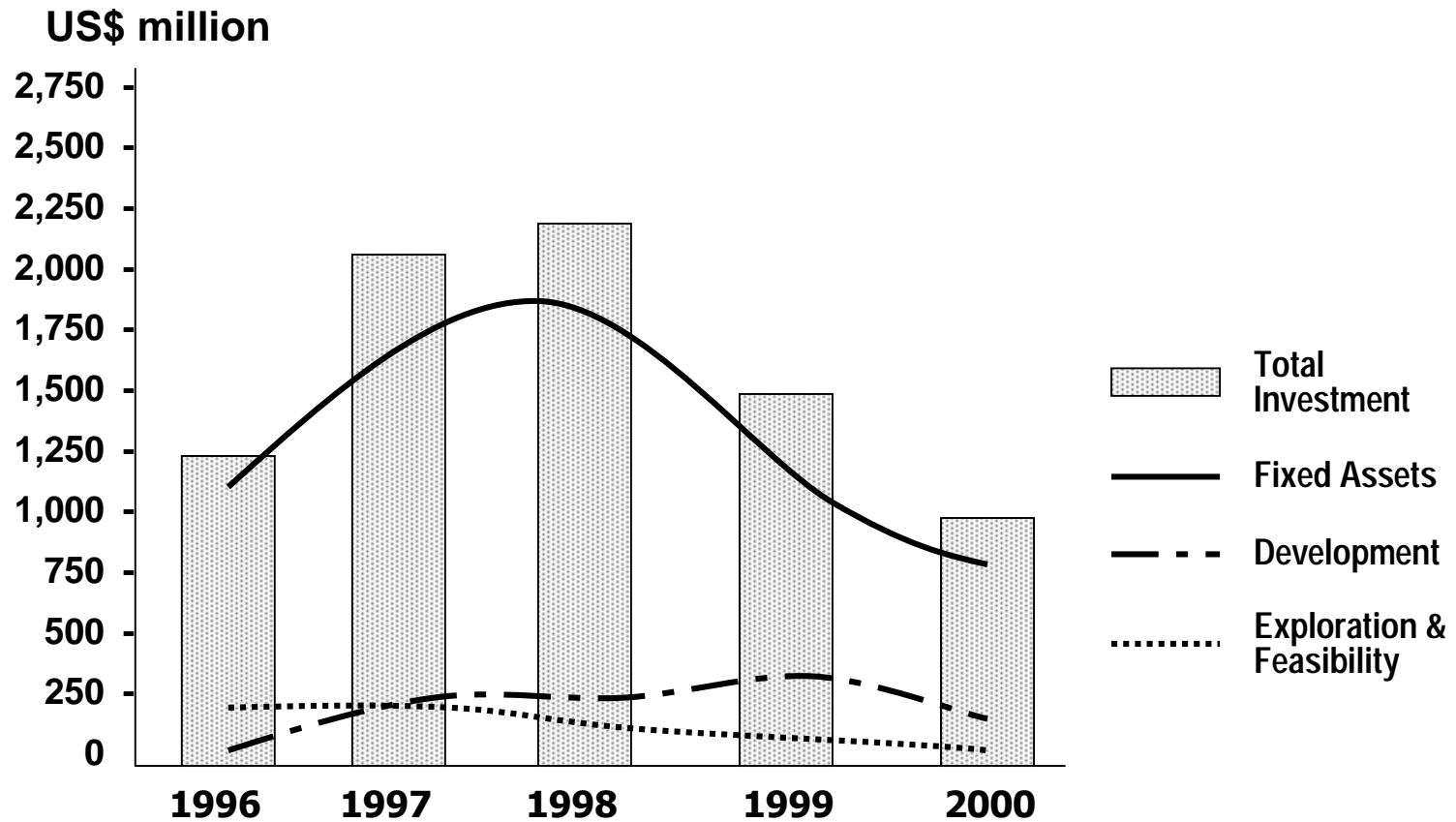
AGGREGATE PROFIT AND LOST



DIRECT EMPLOYMENT



INVESTMENT, EXPLORATION AND DEVELOPMENT



MINERAL RESOURCES DEVELOPMENT

● Government policy to develop mining sector

- Short term : Supporting economic recovery program
- Long term : Improving mineral sector management ⇒ sustainable economic development
- Important agendas :
 - Preparing new mining law, to accommodate : decentralization, new investment policy, regional & community developments, environmental protection, etc.
 - Efficiency improvement of state owned mining enterprise
 - Harmonization between related agencies : Mining, Forestry & Environmental
 - Stop illegal mining
 - Problem solving related to regional autonomy
 - Optimizing ore process to obtain high added value
 - Expanding R & D to utilize mineral material to intensify domestic industry
 - Establish accurate mineral information system to attract investment

ENVIRONMENTAL POLICY IN ENERGY AND MINERAL RESOURCES

- **Law No. 23 / 1997 : Management of environment**
⇒ **Implementation : Government regulation + Ministerial decision**

- **Energy Sector :**
 - Gas : Environmentally friendly
 - Diversification : Renewable energy
 - Conservation
 - Application of clean coal technology

- **Mineral Sector :**
 - New mining law : economic interest + environmental protection
 - Developing mining environmental policy
 - Regulations, guidelines, standard operating procedure
 - Tight cooperation between related agencies
 - Principles of sustainable mining

ENVIRONMENTAL POLICY IN ENERGY AND MINERAL SECTOR

● Current Issues

- Post mining land use ⇒ Mine closure plan
- Regional & community developments ⇒ poverty alleviation
- Illegal miners : seriously damage environment
⇒ Steps are being taken to stop it

CONCLUSION

- **Various EMR : Competitive advantage ⇒ Should be managed properly ⇒ Sustainable economic development**
- **Investment in EMR**
- **Consistent in environmental protection**
- **Reducing oil role : Energy + Commodity diversification policies**
- **Improve management**
 - **Mining operation ⇒ good mining practices**
 - **Post mining land use**
 - **Regional & community developments ⇒ poverty alleviation**