FOOL'S GOLD

The false economic promises of the Lafayette mining project in Rapu Rapu

A Report Prepared for Greenpeace Southeast Asia by Risk Asia Consulting, Inc.

June 2006

CONTENTS

ACRONYMS

ADB	Asian Development Bank
AFP	Armed Forces of the Philippines
AKLAS	Alyansa Kontra Lafayette sa Sorsogon
ALG Inc.	Alternative Law Groups, Incorporated
AMD	Acid Mine Drainage
BAAM	Bicol Alliance Against Mining
BARMAMCO	Bacon Resource Management and Multi-purpose Cooperative
BFAR	Bureau of Fisheries and Aquatic Resources
BOD	Board of Directors
BOI	Board of Investments
CARE Group	Community Action Relations and Education Group
CARP	Comprehensive Agrarian Reform Program
CASA	Citizens Assessment of Structural Adjustment
CBCP	Catholic Bishops Conference of the Philippines
CDP	Community Development Plan
CDPAG	Community Development Program Advisory Group
CEC	Center for Environment Concerns
CENRO	City Environment and Natural Resources Office
CHACHA	Charter Change
CIL	Carbon-in-Leach
CITES	Convention on International Trade in Endangered Species
CMP	Chamber of Mines of the Philippines
CPBD	Congressional Planning and Budget Department
CPP	Communist Party of the Philippines
CRES	Center for Research and Extension Services
DAR	Department of Agrarian Reform
DENR	Department of Environment and Natural Resources
DTI	Department of Trade and Industry
ECC	Environmental Compliance Certificate
ECOZONE	Economic Zone
EDF	Economic Development Fund
EEA	Estimated Effective Area
EEA	Emergency Economic Assistance
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMB	Environmental Management Bureau
EP	Exploration Permit
FIDA	Fiber Development Authority
FLA	Fishpond Lease Agreement
FTAA	Financial or Technical Assistance Agreement
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GMA	President Gloria Macapagal-Arroyo
HH	Household
HLURB	Housing and Land Use Regulatory Board
IMF	International Monetary Fund
INECAR	Institute for Environmental Conservation and Research
IPRA	Indigenous People's Rights Act
IRA	Internal Revenue Allotment
IRDF	Institute for Rural Development Foundation

ACRONYMS

IRR	Implementing Rules and Regulations
ISO	International Standards Organization
LGU	Local Government Unit
LML	Lafayette Mining Ltd.
LOM	Life of Mine
LPI	Lafayette Philippines Incorporated
LRC-KSK	Legal Rights and Natural Resource Center
MACEC	Marinduque Council for Environment Concerns
masl	Meter above sea level
MGB	Mines and Geosciences Bureau
MHO	Municipal Health Office
MMT	Multipartite Monitoring Team
MPDO	Municipal Planning and Development Office
MPSA	Mineral Production Sharing Agreement
MRTF	Mine Rehabilitation Trust Fund
MT	Metric Ton
MTF	Monitoring Trust Fund
MTPDP	Medium Term Philippine Development Program
NBI	National Bureau of Investigation
NCIP	National Commission on Indigenous Peoples
NEDA	National Economic Development Authority
NGO	Non-Government Organization
NSCB	National Statistics Coordination Board
UP NSRI	University of the Philippines Natural Science Research Institute
PAB	Pollution Adjudication Board
PAG-ASA	Philippine Atmospheric, Geophysical & Astronomical Services Administration
PCA	Pollution Control Agency
PDI	Philippine Daily Inquirer
PEZA	Philippine Economic Zone Authority
PHP	Philippine Peso
PNP	Philippine National Police
PO	People's Organization
RCF	Rehabilitation Cash Fund
RPT	Real Property Tax
RRFFC	Rapu Rapu Fact-Finding Commission
RRMI	Rapu Rapu Mineral Incorporation
RRPI	Rapu Rapu Processing Incorporated
SAC	Social Action Center
SB	Sangguniang Bayan (Municipal Council)
SEC	Securities and Exchange Commission
SEPO	Senate Economic Planning Office
SK	Sagguniang Kabataan (Youth Council)
SLU	Saint Louis University
SP	Sangguniang Panlalawigan
TPA	Ton per Annum
TPD	Ton per Day
TVI	Toronto Ventures Inc (TVI) Resource Development (Philippines) Incorporated
UMMI	Ungay Malobago Mines Incorporated
UP	University of the Philippines
US $	United States Dollar
WB	World Bank
WMCP	Western Mining Corporation Philippines
WTO	World Trade Organization

EXECUTIVE SUMMARY

1. This study was conducted by a research team from RiskAsia Consulting Inc. on commission by Greenpeace Southeast Asia. The study bears the following objectives:

   - To determine the current effects of the mining industry on Rapu Rapu and outlying areas
   - To determine risks, threats and potential impact of the mining industry on Rapu Rapu and outlying areas
   - To identify possible courses of action to protect the environment and livelihoods of the people of Rapu Rapu and outlying areas

2. The findings are derived from a review of related literature; content analysis of secondary data and official documents from government and Lafayette; from 37 key informant interviews with representatives of civil society organizations, local government units and agencies, Lafayette field personnel and the local small business community; and, from three (3) focus group discussions with representatives of small fishers' organizations in the coastal municipalities of Sorsogon.

3. Data economic and social impact was analyzed using cost-benefit analysis. This analysis takes into account the existence of external social supply and demand (NEDA Advanced Manual on Project Evaluation) as well as the notion of positive-sums in economic development (Uphoff, 1995). Data on environmental effects and potential impacts was based on interpretation of existing literature.

4. The Philippines is naturally endowed with rich mineral resources because of its geographic location. The MGB estimates that the country has 7.1 billion MT of metallic and 51 billion MT of non-metallic mineral reserves.

5. The Philippine mining industry has had a long mining history beginning with the Spanish colonial period. The first recorded corporate mining activity began in 1902, during the American colonial period, in northern Philippines. Historically, mining has been associated with the plunder of other natural resources such as forest resources because of the need for timber in underground mines.

6. The Philippine mining industry enjoyed a boom in the 1960s and 1970s when the country became the world's 7th largest producer of gold and 10th largest producer of copper. The industry suffered a decline from the 1980s. There was a slight spike in equity investments in 1995 when the Mining Act (of 1995) was passed into law. However, strong opposition from the Church and civil society organizations created uncertainties among investors. In 2000-2004, the mining sector's contribution to exports declined to 1.7 percent annually. Similarly, equity investments declined by 40 percent.

7. The economic history of Philippine mining shows that it has never been a significant contributor to national economic growth, either in its contribution to export earnings or employment generation. More significantly, past (and present) mining experiences show irreversible damage to the environment inclusive of un-quantified social and economic costs that are currently being borne by the government and affected communities.

8. Renewed foreign interest in mining began in 2004 when the national government launched the Mineral Action Plan offering liberal incentives to foreign investors. This interest was further induced by the Supreme Court decision in December 2004 affirming the constitutionality of the Mining Act (of 1995) and its implementing rules and regulations (IRR). Currently, 23 pending applications for mining rights cover 13 million hectares or 45 percent of the national territory.

9. Lafayette entered in the Philippine mining scene at a rapid pace. Registered in the Australian Stock Exchange in 1996, it established Lafayette Philippines Inc (LPI) in 1998 with majority Filipino stock ownership. By 1998, it penetrated Rapu Rapu Island using a corporate layering strategy characterized by subsidiary companies with inter-locking

directorates. These subsidiaries bought into pre-existing mining rights of two major rights holders, TVI-UMMI for the Ungay Malobago Deposit and TVI-Goldrush for the Hixbar Deposit. TVI ultimately made an exit from both giving way to LPI. By 2004, Lafayette became the majority owner of LPI and was in control of mining rights covering 4,463 hectares representing 79.8 percent of the total area of Rapu Rapu Island. It began gold processing operations in July 2005 but operations were suspended after the October 11 and October 31, 2005 mine spills.

10. Lafayette's Rapu Rapu Polymetallic Project forms part of the 24 large scale priority mining projects of the national government. It is armed with a financially-beneficial promise to government and investors: US $246 million in revenues against a US $42 million in investments. It currently focuses on the so-called Eastern Deposit covering 407 hectares. The present area slated for development is 150 hectares directly affecting three (3) barangays and a total impact area of seven (7) barangays in an island of 13 barangays.

11. Rapu Rapu is an island municipality consisting of three islands, a population of 29,170 (as of 2000) distributed in 5,591 households in 34 barangays and a total land area of 16,180 hectares. Agricultural activities are conducted in 7,713 hectares (47% of land area) and built-up areas comprise 927 hectares (5.6% of total land area). The inhabitants rely mainly on fishing and farming for livelihoods and income. However, the aggregate economic output is low due to the degradation of natural resources. The ecosystem of Rapu Rapu Island is fragile and is in dire need of protection and rehabilitation.

12. The declared economic benefits of large scale mining are more apparent than real. Evidence to this is derived from mining experiences elsewhere in the Philippines and other developing countries. Firstly, the externality factor – the cost of social supply and demand – far outweighs the results of the linear relationship of capital inputs and financial and economic outputs. Secondly, the fiscal and non-fiscal incentives provided for in the Mining Act of 1995 as well as other incentives that may be provided to foreign investors (e.g. ECOZONE status) tend to reduce the beneficial share of government and affected communities.

13. In the case of Lafayette mining in Rapu Rapu, the total financial benefits to the local government and the local economy during the expected life of mine is estimated at PhP176.68 million or a theoretical per capita benefit of PhP2 per day. This value is not sufficient to compensate for the permanent loss of resources, collateral effects on local livelihoods and threats to human life and safety. Moreover, these benefits do not leave margins for reinvestments in other economic sectors that could have provided the chance for accretion of productivity and values in other parts of the municipality.

14. The Rapu Rapu Polymetallic Project is an externally imposed project on a fragile island ecosystem jointly carried out by the national government and foreign investors. Local support for the project is derived mainly from the national government and the direct impact barangays (of Pagcolbon, Malobago and Binosawan) which would directly benefit (economically) from the project. Prior to granting of the ECC, no appropriate effort has been made to engage a wider range of stakeholders from within the municipality and outlying areas facing the Albay Gulf such as the Municipalities of Prieto Diaz, Bacon and Gubat (Sorsogon). In fact, only one (1) major public hearing was conducted and this hearing excluded Sorsogon stakeholders as well as certain groups known to be critical against mining and against Lafayette.

15. The policy architecture on mining is weak. Applied in the context of the present political and fiscal crisis, contestation as to the constitutionality of the Mining Act and defects in the relationship between the national government and national line agencies with local government units and local government agencies, this policy architecture is vulnerable to vested interest lobby. This architecture also tends to undermine the blooming of democratic participation in local governance.

16. Various studies on the effects of the October 11 and October 31, 2005 mine spills appear inconclusive and some are tainted with political biases. However, the spills themselves are indicative of serious risks and threats to people's lives, livelihoods and the environment and they mirror disastrous experiences elsewhere within and outside the Philippines. The disasters are indicative of the current and future difficulties of securing safety in mining designs and operations in hilly terrains and fragile ecosystems like Rapu Rapu Island. Likewise, they are indicative of a larger impact beyond the six (6) barangays identified in the EIA/EIS.

17. The Rapu Rapu physical environment has already been damaged by previous mining activities and by unsustainable economic practices. Existing literature indicates continuing damage in the old mining areas. For a fragile island with hilly terrain and limited space for agriculture and habitation, there is an urgent call to deal with the previous environmental damage before undertaking environmentally-risky economic endeavors such as mining.

18. The Rapu Rapu local economy is weak as evidenced by declining productivity in agriculture and fisheries combined with natural resource degradation. Mining revenues are not expected to provide spillover benefits to these sectors. There is a need for government to provide for investments in agriculture, fisheries and environment protection and conservation. The financial benefits from mining will not be enough for the investment needs of these sectors.

19. The October 11 and October 31, 2005 mine spills give a preview of the negative effects and potential impacts of mining on the natural environment, local economy, local governance and social relations. They also mirror similar negative effects elsewhere in the Philippines and in other mineral-dependent developing countries.

20. The series of scientific studies in the aftermath of the mine spills have shown evidence of toxic chemical waste and heavy metals. Despite the inconclusive results of major tests, they have caused negative economic effects and psycho-social stresses to the population. This problem emphasizes the need for science to inform policy development processes.

21. The EIA conducted by Woodward-Clyde Philippines and an earlier study conducted by Regis et al. (2001) of the Ateneo de Naga Institute for Environmental Conservation and Research (INECAR) recognize the same potential negative effects on the Rapu Rapu physical environment and the surrounding marine waters. The difference is that while INECAR emphasizes the need to rehabilitate and protect Rapu Rapu and its environs, Woodward-Clyde gives primacy to Lafayette's capacity to mitigate, if not, prevent disasters. The INECAR study is supported by hard evidence and by similar studies elsewhere. Woodward-Clyde's prescriptions are supported mainly by Lafayette commitments, many of which have already failed during the first year of operations.

22. There are indications that human rights violations may have been committed. The extent of violations and veracity of the allegations, however, have yet to be determined. Certainly, there needs to be an accounting of the flaws pertaining to the public's right to know prior to commencement of operations and an accounting of who was responsible for the mine spills in October 11 and 31, 2005. Finally, there needs to be a review of the mode by which Lafayette acquired land rights in the direct impact barangays especially that these areas are covered by the Comprehensive Agrarian Reform Program.

PART ONE: INTRODUCTION

The Rapu Rapu mining industry "was never a catalyzer to economic development..."
- Rapu Rapu Municipal Socio Economic and Physical Profile, 2002, 2nd edition

One of the fishing villages in Rapu Rapu Island. The interests of the present and future generations of local communities, and their fragile ecosystems are at stake in the Lafayette mining issue. ©Greenpeace/Lester Ledesma

This study comes in the midst of a lingering national economic crisis and a government facing a serious political and fiscal crisis. The country's industrial growth has stagnated while agriculture has been in decline. Currently, economic growth tends to be driven by the service sector with a very significant contribution from remittances of Filipino overseas workers. The fiscal crisis and the perennial deficit in the government's budget have induced national policy makers to look at mining as one major way out.

Lafayette mining in Rapu Rapu Island in the Province of Albay is being tagged by the national government as one of the twenty-four priority large scale mining projects. Likewise, it has become a focal issue among foreign investors and domestic partners looking for signs of a favorable environment for doing business in the mining sector. High expectations, however, turned into a crisis during the last quarter of 2005. After barely four months of operation, two successive mine spills occurred, one on October 11 and the other on October 31. Gold mining operations were suspended and Lafayette was meted a penalty for polluting the waters of Rapu Rapu.

To the larger public, however, the mine spills were not simply a violation of the provisions of the Environmental Clearance Certificate (ECC). More than this, the spills ignited indignation over the environmental, economic and health effects. The issues not only brought Lafayette into the public arena, they also reignited lingering issues against the whole policy framework on mining. A succession of field investigations and researches fuelled debates and conflicts that induced the national government to create a special commission, the Rapu Rapu Fact-Finding Commission (RRFFC), in March 2006. The said commission rendered its final report on May 19 with a couple of critical recommendations, such as a moratorium of mining in Rapu Rapu, cancellation of the Lafayette ECC, payment of taxes waived due to government incentives and review of the

Mining Act of 1995, among others. Despite the RRFFC findings and recommendations, the national government has reaffirmed its position to promote foreign investments in mining as a priority agenda.

Foreign investments, revenues and spillover economic effects are at stake in the Lafayette mining issue. But so are national patrimony and the interests of the present and future generations of local communities, especially of fragile ecosystems and small island economies like those of Rapu Rapu Island. The issue is not just about fish and livelihoods of local economies versus dollar investments and millions of revenues of national economies. The issue is also about national patrimony and people's rights over their natural resources.

Likewise, the issue pertains to governance – how the national government and local government units balance and manage the participation and conflicting interests of various stakeholders and how common denominators, such as science and research, are utilized to inform policy decisions. Finally, the issue pertains to the carrying capacity of a small island economy and a fragile ecosystem and the threat that Rapu Rapu would, in the future, not only become permanently poor because its resources are gone; no one wants to imagine that Rapu Rapu would become like the South Pacific island-state of Nauru where, after 80 percent of the land had been laid to waste by mining, the government had to seriously consider the transfer of the whole population to another island (SEPO, November 2005). Rapu Rapu Island has a potentially striking parallel. Eighty percent of the island is covered by mining interests.

Research Objectives

This study bears three specific objectives, namely:

1. To determine the current effects of the mining industry on Rapu Rapu and outlying areas
2. To determine risks, threats and potential impact of the mining industry on Rapu Rapu and outlying areas
3. To identify possible courses of action to protect the environment and livelihoods of the people of Rapu Rapu and outlying areas

Research Methodology

This research is exploratory and descriptive, and triangulates information from what is already known in existing bodies of literature and other secondary sources, primary (anecdotal data) from key informant interviews and focus group discussions and direct observation data from ocular visits in the mining site, Rapu Rapu communities and outlying areas on the opposite side of Albay Gulf such as the (Sorsogon) municipalities of Prieto Diaz and Bacon.

Primary data collection (interviews, FGDs and ocular visits) was conducted from April 26 to May 4, 2006. A total of 37 interviews were conducted in Albay and Sorsogon. The list of informants includes ten (10) from civil society organizations, ten (10) from local government units and line agencies, nine (9) from the private sector, mostly from the small business community, two (2) from the Catholic Church, one (1) from the academe and five (5) from Lafayette (field level management, employees and contractual workers). Informants associated or working at Lafayette requested anonymity for fear of losing their jobs. Attempts to interview high level officials of the Philippine Chamber of Mines, Department of Environment and Natural Resources (DENR), Lafayette subsidiary companies in Rapu Rapu and the Bureau of Fisheries and Aquatic Resources (BFAR) have either been rejected or stalled.

Three FGDs were conducted among small fishers in Bacon, Gubat and Prieto Diaz. These were attended by 34 individuals (27 men and 7 women). The FGD participants in Gubat are members of the COTIPABA Resource Management and Multi-Purpose Cooperative, a local organization supported by Coastal Core and Christian Aid. The FGD participants in Bacon are members of the 88-member Bacon Resource Management and Multi-Purpose Cooperative. In Prieto Diaz, the FGD participants consisted of small fishers from the coastal village of Brillante.

The thick of information is derived from existing literature, legal documents from the local government and Lafayette project documents (mainly from the Environmental Impact Assessment/Environmental Impact Statement prepared by Woodward-Clyde).

The research team also conducted ocular visits in the Lafayette mining facility, coastal communities of Poblacion, Sta. Barbara, Malobago, Pagcolbon, Binosawan and Linao (in Rapu Rapu), eco-tourism site in Donsol and fishing communities in Prieto Diaz, Bacon and Gubat (in Sorsogon). Likewise, the team observed economic activities such as rice farming, copra drying, fish marketing and local trade and commerce. Socio-cultural activities such as religious ceremonies, public recreations and social interaction among villagers were also observed.

Analytic Methodology

The main analytic tool used in this study is cost-benefit analysis. This method of analysis argues that in the presence of an externality, it is the social cost or social benefit curve that has to be taken into account in estimating the benefit of the output of the project or the cost imposed by its use of an input (Advanced Manual on Project Evaluation, NEDA, Volume II, July 2000). We use this analysis to determine whether certain economic benefits (e.g. Lafayette revenues, salaries and wages of workers and local government revenues) outweigh the overall costs to the local economy, environment and social supply. We analyze economic benefits not along the linear relationship between private supply and private demand (of minerals) within which Lafayette can rightfully argue that benefits outweigh the costs (i.e. generating US $246 million in revenues from US $42 million in investments). Rather we estimate the benefits taking into account the presence of externalities – the social demand and social supply.

In simple terms, we want to analyze whether increases in the revenues of Lafayette trigger improvements in the local economy such as overall welfare of the people in Rapu Rapu, reduction of inequality, improvements in income and increases in the capacity of the local government to provide welfare services. In short, we are looking for a positive-sum, where everyone wins or where there are more winners than losers and where there is a continuous accretion of productivity and value (Uphoff, 1995). Otherwise, projects are either zero-sums (i.e. one's gain is at someone else's expense) or negative-sums (i.e where the aggregate losses outweigh the gains).

This analysis is also informed by Power (2002) who argues that mining investments in developing countries cannot by themselves stimulate sustained economic growth and that mineral development can lead to permanent environmental damage, social conflict and poverty when it occurs in the context of underdeveloped social, political and economic institutions and the associated high rents and/or corruption. Power also argues that modern day mining in developing countries has lost the traditional protection (due to physical isolation) and natural integration with local manufacturing and other economic development activities. Hence, local economies are not expected to directly benefit from mineral development unless the necessary institutions around it are put in place.

Our analysis on environmental effects and potential impacts is informed by Regis et al. (2001) who conducted a comparative vegetational analysis of Rapu Rapu Island using representative creeks and their banks in the former Hixbar mining site, the Lafayette mining exploration site and a control site with comparable vegetation. The study also looked into the physical and chemical characteristics of water and soil (for the presence of heavy metals such as arsenic, lead and cadmium) and bioindicators of faunal species using indicator organisms, monitoring organisms and test organisms. The study contributes to an understanding of significant changes in the ecosystem attributable to mining.

Limitations

In science, the facts should speak for themselves. As former U.S. Vice President Al Gore argues, science should drive policy and that politics should not be allowed to distort the data.[1] In this study, we would have leaned on existing scientific researches to infer conclusions and generate policy recommendations. However, we face limitations with respect to scientific research in Rapu Rapu. The only reliable documents we have used are two scientific studies which were made available to the research team: "Some Impacts of Mining on the Island Ecosystem of Rapu Rapu, Province of Albay (Regis et al. 2001; 43-77)[2] and the Environmental Impact Assessment/Environmental Impact Statement (EIA/EIS) prepared by Woodward-Clyde Philippines for Lafayette Philippine Inc. Our inferences from the results of the scientific studies conducted by BFAR, UP-NSRI and UP-Manila Department of Pharmacology and Toxicology and other studies are mainly based on print media accounts. Nevertheless, we find the media accounts useful in re-emphasizing the need for science as common denominator in policy development.

PART TWO: PHILIPPINE MINING INDUSTRY

The Philippines…"the next mining capital of the world," says DENR Secretary Angelo Reyes during an international mining conference in South Africa recently.[3] Secretary Reyes echoes the national government's attitude on mining as the next big hope for spurring national economic growth at a time when the contribution of agriculture to gross domestic product (GDP) has declined from a significant 30 percent in the 1970s to 16 percent by the turn of the century, when industry contribution has stagnated at 30 percent and when the service sector has risen upwards to lend more significance to economic growth. Natural resource degradation and differential access have much to do with the decreasing ability of the population to create wealth for the nation. Experts estimate that close to 97 percent of the country's original forest cover has been logged,[4] above 50 percent of which is believed to have been felled illegally.[5] Today, less than 3 percent of Philippine ancient forests remain in small, scattered patches.[6]

Forest cover has been reduced to 18 percent of national territory with only about one (1) million hectares being primary forests (DENR, 2002). From the perspective of government, it is about time to dig deeper and mobilize the country's mineral resources.

Indeed, the Philippines is naturally endowed with rich mineral resources because it is located along the Circum-Pacific belt of fire where volcanic processes of tectonic movement and plate convergence have created abundant formations of metallic minerals (SEPO, 2005). The Mines and Geosciences Bureau (MGB) estimates that the country has 7.1 billion metric tons (MT) of metallic mineral reserves and 51 billion MT of non-metallic mineral reserves. The Department of Environment and Natural Resources (DENR) estimates that per unit area, the Philippines ranks 3rd in the world for gold, 4th for copper, and 5th for nickel (Peña, R. undated). In terms of production, as of 2003, the Philippines ranked 11th in nickel, 30th in copper and 36th in both gold and silver (World Metal Statistics, cited in CPBD July 2005). The revenue potentials have been echoed and re-echoed by various national government agencies and foreign investors. The National Economic Development Authority (NEDA) says that the value of untapped deposits is worth around US $840 billion.[7] A Manila Times editorial on November 30, 2006 touted that the expected excise tax revenue of PhP5-7 billion would be enough to keep the government's budget deficit below PhP120 billion.

Historical Overview

The Spanish colonizers were known to be engaged in mining, as would be expected during the plunderous years of colonization. Corporate mining, however, began in the 1900s during the American colonial period. The first known corporate mining activity was in 1902, by Benguet Corporation in the Cordillera Region north of the Philippines. In fact, Benguet Corporation is the oldest recorded mining firm in the Philippines.[8] This was later followed by twelve other mining companies which operated in Benguet Province. Engaged mainly in underground mining, the activities were combined with logging, thus carving out not only mineral deposits but also forestry resources.

The mining industry enjoyed a boom in the 1960s and 1970s when gold and copper prices were high and the country was placed under military rule to suppress political unrest. In the 1970s, the mining sector's contribution to total exports averaged 20 percent peaking at US $1.2 billion in 1980 (CPBD, July 2005). During the same period, the country was the world's 7th largest producer of gold and 10th for copper.

Growth of the mining sector declined in the 1980s. Correspondingly, its contribution to total exports declined to an average of 13 percent in the early 1980s and further down to seven (7) percent between 1986 and 1995.

By the 1990s, the number of active mines had fallen to 27 from a high of 58 in 1981. Export contribution further slid down to 5 percent in the 1990s. By 1997, the Philippine's ranking in gold and copper production fell down to 17th and 22nd, respectively. In 2000-2004, the sector's contribution to total exports further slid down to 1.7 percent annually. This performance was attributed to the decline in world metal prices, weakening of the peso and depletion of existing reserves (MGB August 2004, cited in CPBD July 2005).

Equity investments in mining actually reached a peak of PhP3 billion in 1995 when the Mining Act (RA 7942) was passed into law and when the Philippines acceded to the GATT/WTO regime. During the same period, foreign equity investments began to flow in. However, civil society and the Catholic hierarchy's opposition to mining created uncertainties discouraging investments. Equity investments dropped by an average of 40 percent annually from 2000 to 2004 (CPBD, July 2005).

A radical shift occurred in 2004. In December, the Supreme Court handed down its decision declaring the Mining Act of 1995 as constitutional. Then the Mineral Action Plan which provides the framework for the development of the country's vast mineral resources with 24 priority large scale mining projects. This plan is an offshoot of Executive Order 270, the National Policy Agenda on Revitalizing Mining in the Philippines issued on January 16, 2004 (with revisions in April 2004). The gross value added (GVA) from mining and quarrying suddenly shot up to 14 percent during the second quarter of 2005 from its level in 2004. The significant change was largely attributed to foreign equity investments of Lafayette in Rapu Rapu (US $39 million), Coral Bay in Palawan (US $175.8 million), TVI Resources Development Philippines Inc. (US $17 million) and Teresa Gold Project (US $6.1 million) (SEPO, November 2005).

From March 9-20, 2005, the DENR presented the national government's plans, intentions and offerings to mining investors during the Philippines Investment Conference in Cebu. The conference was basically an offertory for foreign investors. Some of the key areas on offer are the following:

- 30 percent (9 million hectares) of land area have high potential sites for copper, gold, nickel chromite, etc. but only 1.4% is covered with mining permits.
- 70% of land area is of low-medium potential and is open for investors
- reduced processing time for mining permit applications
- 27% reduction in NCIP certification
- approval of ECCs within 120 days
- 100% foreign participation in mining exploration (Exploration Permit or EP), Financial or Technical Assistance Agreement (FTAA) and mineral processing (Mineral Processing Permit or MPP)
- fiscal incentives under the Omnibus Investment Code of 1987: tax exemptions, tax credit on raw materials and supplies, additional deductions from taxable income
- non-fiscal incentives under the Omnibus Investment Code of 1987: employment of foreign nationals, simplified customs importation procedures, importation of consigned equipment for a period of 10 years
- tax holiday during recovery of pre-operating expenses for a maximum of five years from commercial production (for FTAAs)
- income tax carry forward of losses
- income tax accelerated depreciation of fixed assets
- exemption of payment of real property taxes (RPT) on pollution control devices
- repatriation of capital
- freedom from expropriation and requisition of properties
- remittance from earnings and interest on foreign loans

Between January 2004 and February 2005, the government approved new mining permits/contracts: 20 mineral production sharing agreements (MPSAs), 3 mineral processing permits (MPPs), 1 special mines permit, 2 exploration permit (EP) renewals and 5 new exploration permits (EPs).

In sum, the Philippine government has opened the mining sector to foreign investors with attractive fiscal and non-fiscal incentives. This is not to mention the possibility that the government may also agree to further vested interest lobby and offer incentives like the favor it has given to Lafayette (in April 2004) by declaring the Rapu Rapu core mining site as a Special Economic Zone.[9] The core site of Lafayette's Rapu Rapu Polymetallic Project is now a self-contained territory that would be directly administered by the Philippine Economic Zone Authority (PEZA).

Contribution to Economic Development

The DENR is a proponent of mining as a development option towards industrialization (Peña, undated). However, global experience shows that there is a conflicting view on the role of mining in economic development. The experiences of developed countries such as Canada, Finland, Sweden and the United States show that mining can be used as a driving force behind industrialization (SEPO, November 2005). This

experience views mining (and other extractive industries) as a "big push" for developing countries to escape from the poverty trap (Power 2002, cited in SEPO, November 2005).

Historical data over the last two centuries, however, shows that the share of mining extraction to GDP even in Canada, United States and Australia is only around 1 to 5 percent (Power, 2002). The sustained growth of these countries is driven not by extraction of minerals, per se, but by the development of upstream and downstream industries. Mineral processing provided an input to domestic production and manufacturing which resulted in the expansion of trade in manufactured and agricultural products. Mineral processing triggered mechanization of agriculture and value adding processing of agricultural products.

In a study of the economic performance of 85 countries between 1960 and 1993, economic geographer Richard Auty of Britain's Lancaster University found that mineral-driven resource-rich countries were among the poorest economic performers (cited in Power, 2002). Similarly, a World Bank study of 51 solid mineral-dependent countries in the 1990s shows that the worst economic performers are plagued by poorly developed political and social institutions, poor economic management and under-investment in human capital and public infrastructure (cited in Power, 2002).

From the macro dimension, the role of mining in the economy must be seen not only from the values created from extraction and processing but also from the perspective of economic management. This explains the differential performance of mine-dependent countries in Africa. Botswana and Namibia, for example, which have shown faster economic growth performance compared to Sierra Leone and Congo where mining has engendered corruption, kleptocracy and armed conflict.[10]

The aggregate infusion of capital and technology in the mining sector and the resulting creation of new values may appear to be poverty-alleviating influences with positive effects on the national economy. However, equity and distributional issues plus environmental and social costs are likely to offset the positive effects of mining under the current national policy and global economic settings. Power (2002) argues that modern day mining has already lost the traditional protection due to advances in transportation and technologies, not to mention liberalized trade environments, where minerals are merely treated as commodities that can be extracted and traded outside its source, leaving local economies with nothing but temporary spillovers.

Impact on Poverty and Welfare

The Philippine mining experience raises questions as to the sector's contribution at the microeconomic level especially in regard to employment, people empowerment, environmental impacts and social costs. At the macro level, significance to poverty requires a critical mass as basis of attribution to change. Data shows that mining has contributed very little to the alleviation of poverty (SEPO, November 2005). In fact, according to the National Statistical Coordination Board (NSCB), poverty incidence in mining areas is generally higher than the national mean (of 24.7 percent) as of 2003. The top most gold and copper producing provinces of the country, namely, Camarines Norte, Masbate and Agusan, the poverty levels are among the highest in the country. In Region IV (northern Philippines) where mining contribution to regional output is highest at 17 percent, the average poverty level is 39.7 percent (SEPO November 2005).

An Oxfam-America study in 2001 illustrates a high correlation between mineral-dependence and poverty and income inequality in developing countries (Ross, 2001; cited in SEPO November 2005). It takes complicated tracking to determine whether tax revenue gains from mining have direct impacts on poverty and welfare especially at a time when the country is reeling from a fiscal crisis and much of its revenues would necessarily be used to reduce the budget deficit or pay foreign debt obligations. Using employment as a proxy indicator, it can be shown that mining is neither a significant influence in uplifting the lives of the poor. Data shows that since the 1970s the mining sector has not contributed even a full percentage to total employment (CPBD, July 2005). In 2004, when substantial foreign equity investments flowed in as a result of the Supreme Court decision on the constitutionality of the Mining Act of 1995 and the laying of the government's Mineral Action Plan, the mining sector's contribution to total employment was a mere 0.33 percent.

Not only are income transfers inadequate and less-than-significant, the most strategic influence on poverty would be the damage to the natural resource base which the population

needs to carry on its existence. This is not to mention the involuntary social costs that will be borne by affected populations in terms of health costs and psycho-social stresses.

Impact on the Environment

There is no scarcity of evidence to prove that mining is a bane to the environment and erosive of the capacity of the physical environment to support its present and future populations. The realization, however, often comes decades after mining activities have been stopped. Take the case of Nauru, a 21-square kilometer phosphate island in the South Pacific. It has been mined since 1906, exchanging phosphate revenues for imported food stuff and other necessities. Presently, 80 percent of the island has been transformed to pitted and barren wastelands such that the government is now seriously considering the relocation of the whole population to another island (SEPO, November 2005).

Benguet, north of the Philippines, has been mined (and logged for timber) since 1902 and continues to be mined by two big companies, Lepanto Consolidated Mining Inc. and Philex Mining Company. Today, Benguet remains one of the 20 poorest provinces in the country with hardly any forest resources left. In July 1999, a 14-hectare wide base of the Lepanto tailings dam sunk, swallowing an entire elementary school. In addition, spillage of the tailings dam has unleashed toxic waste to the Abra River damaging rice fields in nearby Abra province.

Marinduque, south of Luzon Island, has been mined for copper since the 1960s. Three decades later, tragedy occurred in the Marcopper mining site, spilling an estimate 3 million tons of toxic tailings, causing biological death to the Boac and Makulapnit rivers and inundating 82 hectares of once-productive farm lands (SEPO, November 2005). The tragedy induced the Provincial Government of Marinduque to take a US $100 million suit against Placer Dome and to declare a 50-year moratorium on large scale mining.

It is estimated that mining activities in the Philippines unleash 160,000 metric tons of mine tailings daily (ESSC-BBC 1999; cited in SEPO November 2005). As yet, no definitive accounting has been made on the cost of the environmental damage and the corresponding social costs to the affected populations.

Policy Environment

The policy environment around the mining sector emerged during the era of trade liberalization. Unlike earlier post-Marcos policies and reform programs which emphasized social justice (e.g. Comprehensive Agrarian Reform Law), co-governance and state-society partnership (e.g. Agriculture and Fisheries Modernization Act), Philippine policies around mining emphasize the primacy of state ownership of mineral resources. Indeed, most nations of the world consider subsoil minerals to be the exclusive domain of the state (Zorilla, 2005).

The present policy architecture on mining rests on the following foundations:

- The 1987 Constitutional framework declaring, as matter of state policy, that all minerals in public and private lands within the territory and exclusive economic zones of the Republic of the Philippines are owned by the State.

- The Mining Act of 1995 and its Implementing Rules and Regulations (DENR Administrative Order 96-40) which, after years of debates and legal battles, have been declared by the Supreme Court as constitutional.

- The National Policy Agenda on Revitalizing Mining in the Philippines (Executive Order 270) and the Mineral Action Plan which defines the strategies for revitalizing the industry and promoting the sector as a key area for attracting foreign investments.

The above fundamentals have a clear message to the public and to the investment community: the State owns and controls mineral resources and it wants to generate investments and revenues from such resources. The application of policy would be informed only by related laws and policies that either enhances or restrains the national agenda. The restraining policies would consist of the Indigenous People's Rights Act (IPRA), agrarian reform, land use regulations, Anti-Pollution Law, the National Water Act and the Local Government Code.

The application of the Mining Act and the Mineral Action Plan highlights enhancements such as the following:

- RA 7729 which, amending Section 151 (a) of the National Internal Revenue Code, reduces excise taxes on metallic and non-metallic minerals and quarry resources

- RA 7916, otherwise known as the Special Economic Zone Act of 1995 as amended by RA 8748 (Economic Zone Act of 1998) which provides special incentives to foreign and domestic investors

- DENR DAO 59 which expands the power of Regional DENR units pertaining to the issuance of ECCs

- Executive Order 2004-306 which affects ancestral lands of indigenous communities and downgrades the power of the National Commission on Indigenous Peoples (NCIP) in regard to mining in ancestral domains

The Philippine Mining Act of 1995 was signed into law on March 6, 1995.[11] While the law is founded on the constitutional framework of state ownership of mineral resources, the law was a product of external policy influences beginning with the IMF-WB imposed structural adjustments beginning in the 1980s and policy studies conducted by the World Bank and the Asian Development Bank.[12] The law was also the centerpiece of the Ramos administration's Medium Term Philippine Development Program (MTPDP).

The constitutionality of the law has been challenged by mining-affected communities and civil society allies. A landmark case, the La Bugal-B'laan Tribal Association, et al. versus Secretary Victor Ramos, et al. (G.R. No. 127882) pitted B'laan tribal communities and lawyers of the Legal Rights and Natural Resources Center (LRC-KSK) against the government and Western Mining Corporation Philippines (WMCP) and intervenors, the Chamber of Mines of the Philippines (CMP). In January 2004, the Supreme Court initially ruled that certain provisions of the Mining Act, its IRR and the government's FTAA with WMCP were unconstitutional. Less than one year later, the Supreme Court reversed its ruling and acted in favor of the motion of the government, WMCP and the CMP.

Despite the Supreme Court decision, the key provisions of the Mining Act remain a cause for concern. In fact there is a pending bill at the Senate (filed by Senator Sergio Osmena III) calling for the scrapping of the Mining Act. Most of the key provisions of the Mining Act impact not only on the national patrimony issue (over mineral resources) but also on forestry and the environment, on property rights and the still-unfinished reform programs in agriculture, forestry and fisheries and on governance.

Minerals are non-human made (natural) resources that are common property and are owned by all citizens of the state and should be used for their universal benefit. In fact, this is the essence of national patrimony. However, Philippine property rights regimes have gone through permutations owing to a succession of colonial dominations. The Spanish colonizers introduced the Regalian Doctrine more than 300 years ago and which the 1987 Constitution retains as matter of policy. This was reinforced by the land laws during the American colonial period which emphasized the distinction between what is owned by private citizens and what is public or owned by the State. The Philippine mining policy regime proceeds from the notion of state ownership.

PART THREE: RAPU RAPU

Rapu-Rapu is a steep island affected by a fault line that covers the neighboring islands of Cagraray and San Miguel. This aerial photo shows how the Lafayette mine complex is built near the island's narrow coastline. (Taken on March 2006.) ©Greenpeace/Jimmy A. Domingo

Rapu Rapu is an island municipality consisting of three small islands, namely, Rapu Rapu, Batan and Guinangayan. It is the only island municipality in the province of Albay. It shares municipal fishing grounds with the municipalities of Prieto Diaz and Bacon in Sorsogon. In fact, until its creation as a separate municipality in 1901, Rapu Rapu used to be part of Sorsogon, firstly as a village under Prieto Diaz then later under Bacon.

Demography

The original inhabitants of the municipality are migrant settlers from the island of Catanduanes. Over time, they were joined by settlers from mainland Albay and from other provinces of the country. In 1903, the municipal population was a mere 3,834 persons. It has since expanded to 6,302 by 1918 and doubling to 12,011 by 1939. From its 1939 base figure, the population has again doubled to 25,176 by 1980. The present population (as of 2000) is 29,170 distributed in 5,591 households. Although population growth was faster in earlier years, the present growth rate tends to have slowed down due to spatial constraints. Rapu Rapu Island has 13 barangays with a combined population of 9,749 (as of 2000) only slightly growing from 9,126 in 1995, 8,327 in 1980 and 6,716 in 1960.

A pedicab conveys a mother and her child along Rapu Rapu's roads. Damage to the island's marine environment caused by continuing operations of Lafayette mine will mean serious consequences on the lives of the residents. ©Greenpeace/Lester Ledesma

Most people reside in the narrow coastal plains which comprise only 12 percent of total land area. On the average, 857 individuals reside in each of the 34 villages of the municipality. A much lower average is observed in Rapu Rapu Island, at 749 per barangay because of the topography. Pagcolbon and Binosawan, two of the three direct impact barangays of Lafayette mining, have populations of 147 and 454 respectively. A former mining area, Sta. Barbara, is left with 92 individuals and Pagcolbon, the new mining site, is about to politically deconstruct as a traditional farming and fishing community as it fully transforms into a mining site. Pagcolbon villagers used to reside along the narrow coastal plane and banks of creeks except for the 15 households which used to reside on the upland valley and is now covered by mining operations. Territorially, the whole of Pagcolbon is a mining site. The 15 households have sold off their lands and have been relocated. The others chose to move to Malobago, the creeks being too risky because of mine waste and runoffs. Photos taken by the research team indicate that there are no more residents in what used to be Pagcolbon's main village center along the coast.

Linao and Tinopan, two of three indirect impact barangays, have populations of 287 and 556, respectively.

Local people tend to communicate faster with the outside world (through radio, television, mobile phones) because of spatial constraints.[13] Villages are not connected by road systems. If ever, they are only connected by trails through tricky cliffs and mountain slopes or inter-village travel by boat which is relatively expensive due to high fuel costs. For this reason, most villages are generally self-contained socially and economically. In Binosawan, for example, the genealogy originates from three families.[14]

The demographic structure is also characterized by high dependency. As of 2000, the dependency ratio was 96 percent or that for every 100 working age persons (aged 15-64 years) there are 96 dependents (87 persons aged 0-14 years and 9 person aged 65 and above).[15]

Literacy is relatively high at 92.5 percent but the educational attainment structure represents an inverted pyramid with the majority (61.57%) completing only the elementary grade. Only 4.4 percent of the school-age population attains post-secondary technical and/or college education. This structure restricts the ability of the island's human resources to create more values from human capital especially at a time when the natural resources have been degraded.

The municipality's ethnic mix is expansive but is predominantly (97.1%) Bicolano. Presence of people from other ethnic groups is probably caused by inter-marriages and earlier migration induced by the mining and fishing industries. Residents from ethnic groups include migrants from as far as Mindanao (Maguindanaos, Maranaws, Surigaonons, Zamboanguenos and Tausugs) and the Visayas (Cebuanos, Boholanos, Aklanons, Ilonggos and Warays). Lafayette mining has, since 1998, brought in new migrants from other ethnic groups.

Religious affiliation is homogenous on the Christian denomination with the majority (97%) aligned with the Roman Catholic Church. This demographic attribute explains the power of the Catholic hierarchy to influence local community attitudes towards political and social issues. The Catholic hierarchy's anti-mining advocacy, for example, permeates religious services in local parishes.

Physical Characteristics

The two main islands of Batan and Rapu Rapu are characterized by narrow coastal plains (12% of land area), rolling-to-steep slopes (81% of land area) and very steep slopes and mountains (2.3% of land area).[16] Technically, they form part of what the Albay Provincial Environment Code describe as "environmentally critical areas" (Section 6, G).[17] The three islands are connected by narrow straits. Within each island, communities are not connected by road systems. In fact, the road infrastructures are mainly localized. Residents of coastal villages tend to have more movement towards Legazpi City (in the mainland) than within the island.

Climatically, the municipality does not have a distinct dry season although Batan and Rapu Rapu have differential rainfall patterns. A four-year (1982-1986) study of the Bureau of Soils and Water Management shows that Batan receives more rainfall than Rapu Rapu Island.

Batan is generally wet all-year round except for short dry spells during the months of March and April. Thus agricultural activity is relatively intense in the island with the growing season lasting an average of 9 to 11 months (from May to January). The favorable climate is evidenced by lush vegetation and agricultural activity even in the steep slopes. Rapu Rapu Island, on the other hand, is characterized by low rainfall patterns and growing of paddy rice (rainfed) is feasible only from September to February using water recharges from the June to August rainfall.

Rainfall patterns, however, may have changed. A separate rainfall analysis conducted by PAG-ASA (the country's central weather authority) of rainfall patterns from 1995 to 1999 indicates that the highest rainfall was received by the municipality during the month of January. On the other hand, the October 31, 2005 mine spill in the Lafayette mining site was induced by an October rainfall.

Soil quality is differentiated according to elevation. Narrow plains and valleys have Bascaran Clay Soil (occupying 16% of land area) transported from the surrounding uplands. This type of soil is fertile and is not susceptible to erosion. Upland soil, on the other hand, is of the Annan Clay Loam type (occupying 74% of land area) which is susceptible to erosion.

The municipality has an extensive natural drainage system. In all, there are sixty (60) rivers and creeks. They drain surface run off from the upland catchment areas and watersheds.

Water resources are abundant despite the denudation of the uplands. The municipality has 60 rivers and creeks (MPDO, 2002). Coastal communities rely on ground water and well springs for their potable water supply. Presently, there are 102 Level I, 79 Level II and 9 Level III water facilities all over the municipality.

Coastal and marine resources are also extensive. Two major coral reefs, Columbia and Derickson Middle Reef, are found in Batan Island. However, unsustainable practices and illegal fishing have destroyed coral reefs. Quarrying of gravel and coral sand has also damaged the beach areas. The local government has declared mining and quarrying of beach sand illegal.

The main fishing grounds are the Lagonoy Gulf and Albay Gulf. The latter is shared with the municipalities of Prieto Diaz and Bacon (in Sorsogon). At least 26 commercial fish species have been identified in these fishing grounds.

Vulnerability to Natural Disasters

The Bicol Region is a disaster-prone area. They are vulnerable to earthquakes, droughts, typhoons and floods. Intense droughts affected the region in 1982-1983 and in 1989-1990. These droughts affected agricultural production especially in rainfed rice areas.

Typhoons and floods are a natural and chronic occurrence. Albay is hit by an average of four (4) cyclones per year ranging from tropical depression to full-blown tropical storm. Recent major damages were caused by Typhoon Sisang in October 1987 and Typhoon Loleng in October 1998. Perennially, Rapu Rapu Island is battered by the Southwest Monsoon (Habagat).

The islands of Batan and Guinangayan lie along a volcanic belt while the island of Rapu Rapu is affected by a fault line that covers the neighboring islands of Cagraray and San Miguel.

Vulnerability to floods is exacerbated by forest denudation and soil erosion. Existing woodlands account for only 15 percent of total land area most of which are second growth forests. By land classification, there is supposed to be 7,260 hectares of forest lands. Chances of forest recovery, however, have been diminished due to mining and mining claims and government's lack of attention to forest rehabilitation.

Local Economy

Fishing and mining are major economic activities that form part of the economic history of the municipality. In fact, the official seal of the local government bears fishing and mining as icons defining the identity of the municipality. It has a total land area of 16,180 hectares. Rapu Rapu Island has a total land area of 5,589 hectares.

Almost 50 percent (7,713 hectares) of the municipality's total land area is devoted to agricultural production. The main crop is coconut (78% of total agricultural area). Other agricultural areas are devoted to abaca, rice, corn, fruit trees and root crops. A large portion of the municipal territory is undeveloped after they have been denuded.

Coconut is grown in 6,050 hectares of land shared by 3,084 farmers. This indicates that two (2) farmers share every hectare of coconut farm. The tree population is 428,289 or an average of 70 trees per hectare. Relatively high density coconut farms are located in Batan Island. At the provincial level, coconut hectarage has increased from 35,315 hectares in 1995 to 99,725 hectares by 2002. However, yield per hectare has declined from 3.55 MT in 1995 to 1.8 MT by 2002 (PCA Region V).

The municipality's staple food is rice. However, rice is grown in only 38 hectares of irrigated paddies or less than 1 percent of total agricultural area. The largest rice area is in Poblacion (Rapu Rapu Island) with about 20 hectares. These lands, however, are under threat due to demographic expansion. Residential and commercial areas are putting pressure on narrow plains and valleys most of which are utilized for food production. An additional 76.5 hectares of rice lands are dependent on rainfall. In the direct impact barangays of Lafayette mining, only Binosawan grows rice in 5 hectares. Total production is hardly sufficient to feed more than 100 households of the barangay. Aggregate rice production at the provincial level has also declined due to a drastic decrease in rice areas from 62,973 hectares in 1995 to 45,974 hectares by 2002 (Bureau of Agricultural Statistics, 2002). While aggregate

production has been maintained (at around 131,000 MT per year), food self sufficiency has declined due to demographic expansion.

Abaca and root crop production have greater chances of sustainability because they can be intercropped in coconut areas. Currently, there are 780 hectares of abaca and 124 hectares of root crop areas. As well, there are 105 hectares used for banana production. According to the Fiber Development Authority (FIDA) Region V, however, the estimated effective area (EEA) in Rapu Rapu is only 271 hectares cultivated by 27 farmers in 5 barangays. At the provincial level, Abaca production has been in decline both in hectarage, yield per hectare and total volume of production. According to the Bureau of Agricultural Statistics, Albay's abaca areas have declined from 5,153 hectares in 1995 to 2,950 hectares by 2002. Likewise, yield per hectare has declined from 1.07 MT/ hectare in 1995 to 0.5 MT by 2002. Correspondingly, aggregate production dropped from 4,793 MT in 1995 to 1,478 MT by 2002.

Overall, food production is inadequate. Other than fish, most food items, including meat, poultry and vegetables, are imported from the mainland through small motorized boats.

Agricultural cash crops are potential areas for development. Caragomoy, a plant used as raw material for production of mats and other handicrafts, is planted in 102 hectares of land. However, mat production is low. The mat-making villages of Villahermosa, Gaba, Lagundi, and Hamorawon (in Batan Island) produce only an average of 15 mats per month.

Bananas and fruit trees are also a potential source of income. These are grown in 239 hectares of land. However, banana production is of the backyard type with little economies of scale. As well, vegetables are a potential source of income. However, these are mainly grown in backyards with no economies of scale except in the villages of Bogtong and Lagundi (in Batan Island).

The municipal population is dependent on external sources of meat for their protein needs apart from local fish catch and even of vegetables. Livestock and poultry production is mainly of the backyard type. There is no commercial poultry and livestock production activity even in the Poblacion. This problem is attributed to lack of space.

Fishing used to be a lucrative economic activity due to the presence of coral reefs around the island especially in the northwestern and southwestern portions of Rapu Rapu Island. However, unsustainable practices and illegal fishing have damaged the coral reefs resulting in the rapid diminution of fish stocks.

Despite the coastal and marine degradation, fishing remains a dominant economic activity. The municipality has 1,393 fishing boats, 38 percent of which are motorized (MPDO, 2000). This represents one fishing boat for every three households in the municipality and is indicative of the importance of fishing and marine transport in the life of coastal communities. Fishing gears in use are for demersal fishing (i.e. up to 200 meters in depth) in municipal fishing grounds. Roughly, there is one fishing gear for every three households most of which are hand lines, gill nets, lift nets, borries and T-traps and other hand instruments like spear guns.

Aquaculture is very limited in scale and does not compensate for the reduction of fish catch in marine waters. Only four (4) operators are engaged in small scale fresh water aquaculture covering an aggregate area of less than one hectare. Eleven other operators are engaged in brackish water aquaculture in around 13 hectares of land, mostly for bangus and crab production. As of 1996, the total annual production was 6.34 metric tons. Commercial fishpond operations under Fishpond Lease Agreements (FLA) with the government cover 95 hectares but only 8.4 hectares are productive with an annual production of 2.08 metric tons.

One community-based organization, the Kaunlaran Pangkabuhayan Association of Galicia, is engaged in seaweed production in two (2) hectares of coastal waters at four (4) cropping periods per year but there is no production data available.

Trade and commerce revolves around fisheries and agriculture products and is mainly small scale. There are no formal physical markets even in the Poblacion. Most trading and commercial operations are home-based and major trading capital is supplied by big traders from Tabaco and Legazpi City. There is not even a fish port in the municipality although the ferry ports in Malobago, Carogcog and Poblacion double up as transport points for fishes and other products. There is one informal fish landing in the Poblacion operated by buying agents but there

is no refrigeration support for fresh catch. There is no ice plant in the municipality.

Tourism Potential

Eco-tourism is a potential economic opportunity for the municipality although constraints in the present physical conditions of the area may pose disincentives to local and foreign tourists. Beach areas are relatively extensive with an aggregate area of 654 hectares (inclusive of gravel and coral sands). White sands (coves) are in Barangays Poblacion, Carogcog, Binosawan, Linao, Tinopan, Viga, Mananao and Buenavista. Natural springs can be found in Barangays Poblacion, Sagrada, Morocborocan, Carogcog and Masaga. As well, there are a number of caves that should be attractive for nature explorers.

Tourism, however, is not yet a significant sector in the municipality and neither does the municipality appear in the list of tourist destinations. Firstly, lodging facilities are inadequate and inter-island travel can be expensive. Even among locals, inter-island or inter-village travel by boat can be prohibitive since boat rental prices can range from PhP200 to PhP1,200. Boat travel to the port of Legazpi City can take two (2) hours or more. Secondly, the beach areas are narrow and are very close to residential areas. There is a nice private beach resort in Linao but this is hardly visited by tourists. According to the Department of Tourism and the Provincial Tourism and Cultural Affairs Office of Albay, Rapu Rapu has fourteen (14) tourist destinations (out of a total of 195 destinations in the province). However, these are all undeveloped. Moreover, there is no single accredited tourist facility in the municipality.

With appropriate investments and support from government, Rapu Rapu should benefit from tourism especially since trends are positive. According to the Department of Tourism, Region V, Albay now tops the list of tourist destinations in Region V

Sunset in Donsol, Sorsogon along the Western seaboard of the Philippine's Bicol Province. The municipality of Donsol relies heavily on an eco-tourism project focusing on whale sharks which frequent its coastal waters. The waters facing Rapu Rapu island are acknowledged as the migration path of this threatened species. ©Greenpeace/Lester Ledesma

with 8,160 foreign tourists in 2003. Its closes rival was Camarines Sur with 4,521 foreign tourists. Aggregate foreign and domestic tourist arrivals from 1999 to 2003 also show that Albay topped the list with 25,101 foreign and 567,694 domestic tourists compared to Sorsogon with 12,005 foreign and 238,072 domestic tourists.

Politics and Local Governance

Rapu Rapu is a 4th Class municipality. It derives income from real property taxes, business taxes and license fees, grants and Internal Revenue Allotment (IRA) from the national government.

The LGU's mission is to promote **agriculture-based industrial development** thriving on an ecologically-sound environment. Its three-pronged strategy combines livelihoods, people empowerment and provision of basic services. In the livelihood component, the LGU specifies "equitable distribution of resources, sustainable development and agri-based industrial development." The problem: the LGU is barely able to pay for its bureaucracy with only PhP3.7 million available each year to directly support its mission.

Local government records show that from 1996 to 2001, the municipal local government unit (LGU) earned an annual average income of PhP18.6 million.[18] The major bulk of the income comes from the IRA. During the same period, the LGU spent an average of PhP 17.5 million per year, largely to cover routine expenditures such as salaries and monthly operating expenses.[19] Budgets for economic development is derived from the legally-mandated 20% economic development fund (EDF). In real terms, this represents economic and social development funding in the amount of PhP3.7 million per year.

As of 2005, municipal income has increased to PhP24.9 million, 90 percent of which comes from the IRA.[20] A separate report from the Office of the Municipal Accountant, however, indicates that the LGU actually generated an income of PhP 33.4 million in 2005 of which PhP 30.9 million was from the IRA. The same report also indicates that local tax revenues and other specific incomes amounted to only PhP2.5 million during the year.

Based on the estimated budget for 2005, these monies were spent mainly for personnel (PhP15.9 million), monthly operating expenses (PhP8.7 million) and maintenance of property, plant and equipment (PhP185,000).[21] During the same year, the LGU's capital investments for economic development, i.e. combined spending for social development, infrastructure development, economic development and support services, was PhP5.7 million.

Based on the 2005 Accomplishment Report of the LGU, actual utilization of the 20% EDF obliquely supported the LGU's mission statement to promote sustainable livelihoods and agri-based industry. Most of the PhP5.7 million EDF utilized for the year was spent on the construction of small-scale infrastructures at the barangay level (e.g. spillways, footbridges, day care centers, multi-purpose pavements, etc.). Hardly was there any significant investment directly supporting agriculture or industry. Financial records show that during the year, the LGU spent PhP 42,780 for a forest management program, PhP69,858 for food security and food production, PhP69,912 for livestock production and PhP399,569 for livelihood enhancement, among others.

The LGU used to be the biggest employer in the municipality until Lafayette moved into the territory in 1998 and generated more employment opportunities. As of 2005, the LGU had 87 personnel including 12 elected officials (Mayor, Vice Mayor and 10 SB members).

The biggest problem of the Rapu Rapu LGU is its weak financial capacity and its high dependence on the IRA. It can hardly derive incomes from its main economic sectors such as fishing, agriculture and mining. Income estimates for 2005 projected very modest revenues from fishery rental fees (PhP100,000), business tax (PhP350,000), community tax (PhP150,000), real property tax (PhP350,000), permit fees (PhP200,000) and other specific incomes. Actual revenues generated for the year was only PhP2.5 million.

Lafayette is very much aware of the LGU's weak financial capacity and is able to utilize this information to its advantage. In its Environmental Impact Statement (EIS), Lafayette specifically downgrades LGU revenues from fishing and other specific incomes. The EIS, for example, cites the fact that

LGU revenues from municipal fishing have been significantly low at PhP12,120 in 1997, PhP66,732 in 1998 and PhP57,891 in 1999. The same EIS also mentioned that in 1998, the LGU earned only PhP500 in permit fees.

Outlying Areas

Rapu Rapu shares the marine waters of the Albay Gulf with the Sorsogon municipalities of Prieto Diaz (pop. 18,925 as of 2000), Bacon (a district of Sorsogon City) and Gubat (pop. 52,702 as of 2000), on the Pacific side. Fishing is a major livelihood activity of the people of Sorsogon, second to agriculture. Small fishers from Gubat and Prieto Diaz also venture into the Pacific waters fronting the Lafayette mining site.

Prieto Diaz has a coastline of 10 kilometers with 19 barangays located along the coast. Its coastlines are endowed with vast mangroves stretching up to the boundary with Gubat. Like Bacon, Prieto Diaz is endowed with beautiful and scenic beaches. At the southern portion of the town are 2-hectare islets known as the Balumbon islands. Bacon has a coastline of 21 kilometers facing the Albay Gulf where 1,100 full-time small fishers depend on fishing for livelihood.

FGDs conducted among fishers in the three municipalities reveal concerns regarding the October 11 and October 31, 2005 mine spills and the whole project. Firstly, they have never been considered as a stakeholder in the project and were never consulted during the conduct of the EIA despite the fact that their fishing grounds are at risk. Secondly, the mine spills have engendered psycho-social stresses (resulting from the fish scare) that impacted on their livelihoods. Thirdly, the threat of AMD, heavy metal contamination and sedimentation persists. Since they also belong to Type II Climate, the annual typhoons and monsoon rains will naturally bring sediments to their fishing grounds.

West of Rapu Rapu is Cagraray Island separated from the municipality by the Cagraray Strait. Cagraray is only 300 meters away from Legazpi City separated by a narrow channel. It is being developed as a tourist zone. A local real estate developer, MISIBIS Land, has in fact sold out the first 40 hectares to Filipino-Americans wanting to relocate in the area for eco-tourism reasons.[22] There are concerns that Lafayette mining and its potential impacts may create disincentives to tourism in the area.

Albay Gulf is also a haven of endangered species. There have been sightings of whale sharks. As well, the municipality of Gubat and the district of Bacon form part of LGUs involved in the Pawikan Conservation Program of the DENR. As of 2003, fourteen (14) heads of Green Turtles *(Chelonia mydas)* have been captured, tagged and released to the Gulf.

PART FOUR: RAPU RAPU MINING INDUSTRY

A view of the mine site taken within the mine complex. Photo taken last January 2006. ©Greenpeace/Rap Rios

Mining interest in Rapu Rapu began as early as the Spanish colonial period. However, recorded data begins in 1935 when Ungay Malobago Mines Inc. (UMMI) first explored the surface oxide portion of an area in Pagcolbon. This was later known as the Ungay Malobago Deposit. During World War II, the Japanese Imperial Army extracted minerals in what is now Brgy. Sta. Barbara.

The first expansive mining operations was conducted during the post World War II period when Hixbar Mining Co. introduced open pit and tunnel-type mining in the same area mined by the Japanese. The operations ceased in the 1960s due to insufficient capital and dwindling high grade reserves. However, Hixbar operations left behind contaminated rivers and wide tracks of land.

In 1961, UMMI transferred exploration and development rights to Benguet Consolidated Inc. (BCI). The latter conducted explorations until the 1980s. In 1994, it assigned its rights to TVI Resources Development (Philippines) Inc. or TVI. During the same year, TVI entered into a Joint Venture Agreement with Goldrush Mineral Corp. (Goldrush), owner of the nearby Hixbar Deposit, and lodged an application over the remaining prospective geology of the island. TVI then engaged in direct exploration until 1998.

Separately, in 1994, Miracle Mile Mining Corp, a subsidiary of TVI, applied with the MGB to explore 2,767 hectares in Rapu Rapu. Another mining company, Spinifex (Philippines), believed to be the former name of Lafayette, conducted a feasibility study but never made an exploration.

Lafayette Entry

Lafayette Mining Ltd. (LML) was listed in the Australian Stock Exchange in 1996. In 1997, it applied with the MGB for exploration rights over 1,719 hectares in Rapu Rapu. The following year (1998), three parallel events were about to meet in a conjuncture that would bring the Australians into Rapu Rapu: first, Lafayette Mining Limited registered a subsidiary known as Lafayette Philippines Inc. (LPI) with the Securities and Exchange Commission (SEC); second, (in June 1998) the Philippine government entered into a Mineral Production and Sharing Agreement (MPSA) with UMMI and TVI for the

extraction of gold, copper and silver in 144.2 hectares of Brgy. Pagcolbon; third, (also in 1998) LPI created a subsidiary, Rapu Rapu Minerals Inc. (RRMI) in a joint venture with Rapu Rapu Holdings and Gold Rush. LPI would own 40 percent of RRMI.

By October 31, 998, Lafayette was in Rapu Rapu. LPI and RRMI entered into a joint venture with TVI whereby LPI would become the operator and manager of the TVI-UMMI MPSA with the government. By December 1999, TVI exited when RRMI purchased its interest in the project. LPI then assumed full control of operations and management of the project. During the same month, RRMI entered into an agreement with UMMI whereby the former would be privileged to purchase the mineral rights and claims of the latter.

By end of 1999, Lafayette was in control of the prime mineral deposits in Rapu Rapu: the Ungay Malobago Deposit under UMMI and the Hixbar Deposit formerly under TVI. However, to thicken its control, LPI created two more subsidiary companies: Rapu Rapu Holdings Inc. (RRHI) in 2000 and Rapu Rapu Processing Inc. (RRPI) in 2001. RRPI would become LPI's platform in financing and managing the processing plant to which RRMI will sell mineral ore.

In 2004, LPI reconfigured its ownership structure. While it began as a majority-Filipino corporation in 1998, in April 2004 it increased its capital stock to PhP127 million and brought in 3 Australians (representing Lafayette Mining Limited) and 1 Korean (representing Philco Resources of Malaysia) as majority shareholders and 1 Filipino, a Bicolano, as minority shareholder. Hence, while LPI is registered as a Filipino company, it is, in fact, a foreign-owned company which exercises overarching interests over mining in Rapu Rapu.

One month later, in May 2004, President Gloria Macapagal Arroyo (GMA) issued Proclamation No. 625 declaring certain portions of Pagcolbon and Malobago as a Special Economic Zone (SEZ).[23] By July, LPI commenced construction of the mining site.

In December 2004, the legal and policy environment became most favorable for Lafayette. The Supreme Court declared RA 7942 (Mining Act of 1995) constitutional. By this decision, there was no more legal barrier for Lafayette to assume not only operations and managerial rights but also beneficial rights to the mineral ores of Rapu Rapu.

By July 2005, LPI commenced gold processing. However, after three months of gold production, two disasters occurred. On October 11, an overflow of the discharge pond unleashed twenty (20) cubic meters of cyanide to the surrounding areas. Two weeks later, on October 31, torrential rains overfilled the tailings dam. To protect the dam, LPI conducted a controlled discharge creating a mine spill.

LPI attempted to downplay the incident especially among its foreign investors. While the mine spill was being investigated in November, it announced success in the exploration of the Hixbar Deposit. However, strong pressure from local government authorities and civil society organizations induced the government to suspend operations and conduct hearings under an independent commission.

The MGB suspended mineral processing in December 2005. Subsequently, LPI announced a loss of $5.5 million. Correspondingly, Lafayette share prices dropped in the Australian Stock Exchange.

In January 2006, the Pollution Adjudication Board (PAB) of the Environmental Management Bureau (EMB) imposed a PhP10.4 million fine against LPI for violating the Clean Water Act.[24]

The Rapu Rapu Polymetallic Project

The Rapu Rapu Polymetallic Project is a joint venture project of LPI, UMMI and RMMI with RRPI as mineral processor. It incorporates all of the valid and known claims over the eastern part of Rapu Rapu Island covering 45 square kilometers in four groups of tenements, namely:

- Ungay Malobago Deposit (or Eastern Deposit) consisting of 72 hectares of patented claims of UMMI
- Ungay Malobago Deposit consisting of 335 hectares covered by two MPSAs in favor of UMMI.
- Hixbar Deposit (or Western Deposit) consisting of 1,654 hectares of Goldrush MPSA and claims
- Regional area claims consisting of Miracle Mile MPSA Application covering 2,602 hectares
- Total MPSA and Claims: 2,061 hectares
- Total MPSA Area Applied for: 2,602 hectares
- Total Mining Interest: 4,463 hectares
- Total land area of Rapu Rapu Island: 5,589 hectares
- Ratio of mining interest to total area of the island: 79.8%

Table 1. Chronology of Lafayette Mining in Rapu Rapu

Year	Events	Remarks
1935	Surface oxide portion of an area in Pagcolbon, known as Ungay	
	Malobago Deposit, was first explored by Ungay Malobago Mines Inc. (UMMI)	
1935	UMMI gets approval of Mineral Production Sharing Agreement (MPSA)	
1935-1960	Hixbar Mine operated as copper and pyrite mine	Hixbar mine closed in 1960 due to insufficient capital and dwindling high-grade reserves.
1961	UMMI transfers exploration and development rights to Benguet Corporation under the terms of a Royalty with Option to Purchase Agreement. Benguet Corp discovers sulphide or primary deposit.	
1961-1980's	Exploration of Ungay Malobago Deposit by Benguet Corporation	Diamond drilling estimated at 25,000 meters at a cost of $3.5 million (Woodward-Clyde 2000)
1994	Benguet Corp assigns rights to Malobago property to TVI Pacific (Phils) Inc (TVI).	
1994	TVI enters into a Joint Venture with Goldrush Mineral Corporation (Goldrush), owner of nearby Hixbar Deposit, and lodged an application over the remaining prospective geology of the island.	
1994-1998	TVI engages in direct exploration	Exploration expenditures estimated at $1.6 million
1994	Miracle Mile Mining Corp. applied with the MGB to explore 2,767 hectares in Rapu Rapu	Miracle Mile Inc. is a subsidiary of TVI
1996, Nov	Lafayette listed in Australian Stock Exchange as Lafayette Mining Ltd.	Shares are also traded in the Berlin stock exchange.
1997	Lafayette applied with MGB to explore 1,719 hectares	Lafayette spent an estimated $3.8 million in exploration expenditures from Nov. 1998 to Sept. 2000 (Woodward-Clyde 2000)
1998, June	The Philippine government enters into MPSA with UMMI and TVI; UMMI as claimholder and TVI as operator; gold, copper and silver	Covers 144.2 hectares in Pagcolbon
1998	Lafayette Phils Inc. (LPI) registered with the SEC with a subscribed capital of PhP 5.4 million	4 Filipino and 1 Australian incorporator
1998	Rapu Rapu Minerals Inc (RRMI) registered with the SEC	As subsidiary of LPI; LPI holds 40 % and Rapu Rapu Holdings and Goldrush Mineral Exploration Corp. holds 60%
1998, Nov.	Lafayette Mining Ltd , Lafayette Phils Inc (LPI) and Rapu Rapu Minerals Inc. (RMMI) enter into Joint Venture with TVI; Lafayette became operator and manager of the project.	
1999, Dec.	RRMI purchases project interest of TVI	
1999, Dec.	RRMI and Lafayette enters into an agreement with UMMI whereby RRMI may purchase the claims and mineral rights belonging to UMMI; Benguet Corp retains right to purchase 25% of project interest within 60 days notice of intention to mine.	
2000	Rapu Rapu Holdings Inc. registered with the SEC	As subsidiary of LPI
2001	Rapu Rapu Processing Inc. (RRP) registered with the SEC	As subsidiary of LPI and the latter's platform in financing and managing the processing plant. RRM will sell mineral ore to RRP.
2002	RRMI applies for ECOZONE status	

Table 1. Chronology of Lafayette Mining in Rapu Rapu

Year	Events	Remarks
2003, November	Rapu Rapu Sangguniang Bayan issues Resolution 150-2003 endorsing the RRMI application for ECOZONE status.	Later declared as spurious and nullified by the Rapu Rapu Sangguniang Bayan
2003, December	PEZA Board of Directors approved RRMI application for ECOZONE status	Approval made even before completion of requirements.
2004, Jan	Supreme Court declares provisions of RA 7942 (Mining Act of 1995) unconstitutional	
2004, April	LPI increases capital stock from PHP21.6 million to PHP127 million	Directors: 3 Australian, 1 Filipino, 1 Korean
2004, May	GMA issues Proclamation No. 625 declaring certain areas of Brgys. Pagcolbon and Malobago as special economic zone	The ECOZONE covers roughly 42 hectares.
2004, July	Rapu Rapu mine commenced construction	
2004, Dec	Supreme Court declares RA 7942 (Mining Act of 1995) constitutional	
2005, July	Rapu Rapu mine commenced gold production	
2005 Oct 11	Overflow of waste water discharge pond; 20 cubic meters of low level cyanide discharged to surrounding areas	
2005, Oct 31	Torrential rains; controlled discharge from tailings pond	
2005, Nov	Lafayette Mining Ltd reports success of Hixbar exploration	
2005, Nov	Rapu Rapu gold mining operations suspended	
2005, Dec	Lafayette Mining Ltd. Reports suspension of operations in Rapu Rapu	
2005, Dec	LPI announces loss of $5.5 million after cessation of operations in Rapu Rapu	
2005, Dec	Lafayette Mining Ltd. Reports completion of private share placement and purchase plan amounting to A$ 10million	Lafayette Mining Ltd shares dropped by 0.5 cents in Australian Stock Exchange
2006, Jan	Pollution Adjudication Board (PAB) of EMB imposes PHP10.4 million fine against LPI for violation of Clean Water Act	PDI report
2006, Jan	EMB finds high cyanide level in water samples	
2006, March	GMA creates Rapu Rapu Fact Finding Commission	
2006, April	LPI announces completion of environmental safeguards in the new copper plant of the Rapu Rapu Processing Inc.	
2006, May (19)	Rapu Rapu Fact Finding Commission issues report recommending closure of Lafayette mine and moratorium on mining in Rapu Rapu (among other recommendations)	

The project currently focuses on the Eastern Deposit with an initial Life of Mine (LOM) of seven (7) years. The total approved area is 407 hectares where the open pit area (for extraction) is approximately 20 hectares. The total area slated for mineral development activities is 150 hectares. The cost of construction alone is estimated at US $37 million exclusive of pre-construction exploration and development.[25]The project reserves the plan to proceed with underground mining at the Hixbar (Western) Deposit for an additional LOM of two (2) years plus possible extension resulting from further exploration in the claimed areas. In fact, LPI announced success in the Hixbar exploration in November 2005.

Based on feasibility studies, the open pit area has a proven ore reserve of 4.93 million metric tons (MT). The ore to be processed is polymetallic (copper and zinc) with significant levels of gold and silver. Ore processing volume is estimated at 2,500-3,000 tons per day (tpd) from which ore and zinc concentrates will be produced. The estimated concentrate production per annum (tons per annum or tpa) is 36,000 tpa for copper and 24,000 tpa for zinc.

Gold and silver will be extracted from copper smelting which may be done by the PASAR smelter and refinery in Leyte while zinc concentrates may be smelted in either Japan, Korea

or Australia. Additional gold and silver will be extracted on-site through a separate carbon-in-leach circuit treating the flotation tailings as well as from oxide ore overlying the sulphides. In fact, the joint venture project began producing gold in July 2005 until operations were suspended (in November 2005).

Mining and Processing Operations

In general, the project involves an integrated process of ore extraction, ore crushing, ore milling and flotation to derive concentrates. The concentrates are then further thickened, filtered and stored ready for transport to smelting facilities in Leyte (for copper) and Japan, Korea or Australia (for zinc). A separate Carbon in Leach process will be used alongside the main sulphide plant to treat float tails and recover gold and silver from oxide ore. The CIL circuit will use cyanide for leaching.

Table 2 outlines the general mining operations and Table 3 outlines the processing operations.

Lafayette Philippines Inc. (LPI)

Organization theories delineate ownership rights and managerial rights in any organization. Ownership translates to vision, policy and direction while management translates to execution. The common denominator between the two is internal mutual accountability and general accountability to stakeholders. For publicly-listed firms, accountability to the owners refers not only to the majority stockholders but also to the mass of minority shareholders and the general public affected by the business.

In the corporate world, ownership rights and managerial rights are supposed to reflect the same fundamental principles in organization building. However, the lines are blurred when applied to business, especially to mining. Learning from the experience of local and foreign mining companies in the Philippines, the accountability system disintegrates when disaster comes or when mineral reserves have been exhausted. In the case of Marcopper in Marinduque, for example, the company operated for 30 years producing an estimated 30,000 tons of copper per day and earning an estimated PhP 40 billion in foreign exchange earnings during its life term.[26] The company closed its operations in 1997 after the tragic mine disaster on March 24, 1996. The disaster unleashed 1.6 million cubic

Lafayette mine's pier located near the eastern tip of Rapu Rapu. The mine's cyanide shipments needed for ore processing pass through this pier. ©Greenpeace/Jimmy A. Domingo

meters of tailings to the 26-kilometer rivers of Boac and Makulapnit. The rivers remain silted. According to the Marinduque Council for Environment Concerns (MACEC), 36 women and children had died of mysterious diseases.[27] Placer Dome, manager and 39.9 percent co-owner of Marcopper (through its subsidiary Placer Holdings Inc.) left the country without compensating the affected communities. The Provincial Government and six (6) municipal government units of Marinduque now have to seek redress in the US Federal Court of Nevada where they can engage Placer Dome in a protracted court battle.

In the case of Lafayette Mining Ltd. and Lafayette Philippines Inc. (LPI), the ownership and managerial arrangements tend to reflect strategies of seizing loopholes in the Philippine Constitution, Mining Act of 1995 and other related laws and pre-empting accountability in the event that a Marinduque-type of disaster comes.

Rafael Mariano, Anakpawis Party List Representative, calls the relationship between the LPI ownership structure and LPI mining interest in Rapu Rapu a "direct violation of the 1987 Constitution and the country's national patrimony."[28] Bayani Agabin, LPI lawyer, calls it a legally permissible "layering of ownership."[29] For the people of Rapu Rapu, the issue has become a lingering debate on whether Lafayette presence is an opportunity or a threat the major problem being that all the necessary information were not laid on the table for all stakeholders to see prior to start of operations. If a Marinduque-type of disaster occurs in Rapu Rapu Island after the mining operations have ceased, who would be held accountable for the environmental and health costs and economic losses where the values are likely to exceed what is available from the Mine

Table 2. Lafayette Mining Operations

Activity/Process	Description	Results	Risks
Open pit mining	Extract sulphide ore	2500-3,000 tpd	Permanent excavation of the open pit
Ore processing	Produce concentrates	Zinc and copper concentrates	Toxic reagents, tailings, mine spill
Transporting	Copper and zinc concentrates loaded to trucks for delivery to Malobago port	Delivery to loaders at the pier	Road accidents, road spills
Off-Loading	Copper and zinc concentrates loaded to barge by mobile hopper and conveyor	Concentrates are loaded to barge	Accidents, spills to the sea
Shipping	Copper and zinc concentrates loaded to barge	Delivery to smelters (Leyte for copper and Japan, Korea or Australia for zinc)	Oil spill, concentrate spills
Copper Smelting	Off site (PASAR, Leyte)	Copper, gold and silver	---
Zinc smelting	Off site (Japan, Korea or Australia)	Zinc	---

Source: Rapu Rapu Polymetallic Project Environmental Impact Statement

Table 3. Lafayette Processing Operations

Activity/Process	Description	Results	Risks
Crushing	Ore rocks crushed in primary crusher to reduce size to less than 800 mm	12 hrs/day, 244 tons per hour of crushed ore discharged to 1,000 ton bin	Overfilling (may be diverted to stockpile)
Milling	2-stage milling: semi-autonomous grinding (SAG) and ball milling	fine milled ore	Accidents; hazard to workers
Conditioning	Milled ore gravitates in flotation conditioning tank	Zinc and copper floats and separates from pyrite and gangue materials	
Flotation (copper)	Milled ore fed into flotation tank	Copper concentrate containing gold and silver; tailings	Tailings will contain residual cyanide; more cyanide is used when the CIL is running
Flotation (zinc)	Tailings from copper flotation	Zinc concentrate	Tailings will contain residual cyanide; more cyanide is used when the CIL is running
Gravitation	Zinc and cooper concentrates gravitate in separate wet screens	Trash removed prior to thickening	Tailings
Pumping	Concentrates pumped to separate storage tanks	Store bulk concentrates	Potential leakage due to pressure
Dewatering	Concentrates pass through pressure filters	Concentrates dewatered	Waste water
Discharging	Filter cakes discharged to two (2) 5,000 dry tonne conical stockpile separated by concrete barrier	Concentrates prepared for transport	Accidents; hazard to workers
Thickening	Tailings thickened to 55% solid prior to pumping to tailings dam	Tailings partly dewatered	Waste water
Water recycling 1	Waste water from filters and thickeners will be separately recycled to the flotation circuit	Water recycled and reused in flotation circuit	Cross contamination of reagents
Water recycling 1	Waste water from tailings thickener will be recycled	Waste water reused for grinding, flotation and regrinding	Cross contamination Residual cyanide
Raw water storage	Collection of rain water, waste water and tailings dam water	For processing and potable water supply	
Carbon in Leach	Treat oxide parts of ore body and tailings	Produce gold and silver	

Source: Rapu Rapu Polymetallic Project Environmental Impact Statement

Rehabilitation Fund and the Reserve Cash Fund? The legal chase will have to go through layers that would insulate Lafayette Mining Ltd. of Australia from direct accountability. The most likely legal targets would be Rapu Rapu Minerals Inc. and Rapu Rapu Processing Inc. which can seek shelter in a holding company called Rapu Rapu Holdings. The latter, in turn, can shield Lafayette Philippines which can claim that it is but a minority holder in its subsidiary companies.

Anatomy of Layering: Subsidiaries, Buy Ins and Buy Outs

Indeed, Lafayette's mining interests is a multi-layered, vertical and horizontal ownership complex not only capable of withstanding legal barriers in the mining policy arena but also flexible and agile in terms of seizing legal loopholes in the mining sector and pre-empting major accountability if and when disaster occurs after mining operations have ceased.

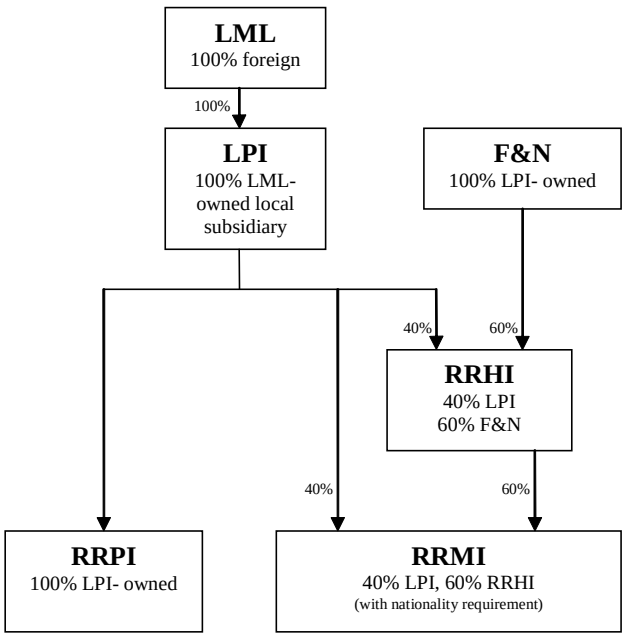
The layering of ownership begins in Australia during the public listing of Lafayette Mining Ltd. in the Australian Stock Exchange in 1996. In the Philippines, it began with a feasibility in Rapu Rapu conducted by Spinifex (Philippines) in 1994 before it became Lafayette Philippines Inc. (LPI) in 1998.

The first layer of ownership traces back to Lafayette Mining Ltd. However, it was a low-key first layer in 1998 when LPI emerged as a Filipino-owned company with minority exposure from Lafayette.

LPI, then, became a spearhead for vertical acquisition of rights and claims of pre-existing players in Rapu Rapu. But first, LPI had to create a horizontal layer beginning with Rapu Rapu Minerals Inc. (RRMI) in 1998 (and Rapu Rapu Holdings in 2000). Thereafter, Lafayette, LPI and RRMI would combine to enter into a joint venture with TVI, the operator of the UMMI-TVI MPSA in Malobago. Then, what began as a joint venture became an internal acquisition. By 1999, TVI would be bought out of the arrangement. The project is still being projected as a joint venture but in fact it is owned, controlled, operated and managed by the same entity woven within a single complex layer of corporations: Lafayette, the mother company; LPI the subsidiary which acts as the Philippine-based mother company for other surrogates; and, RMMI, LPI's subsidiary.

LPI has skillfully covered its corporate tracks without Lafayette losing control of ownership and management. At start of operations, LPI was supposed to be a majority-Filipino company but it was led by an Australian country manager. Filipino management only occurred after the mine spills.

Diagram 1: Corporate Set up of the Lafayette Group of Companies



SOURCE:: Rapu Rapu Factfinding Commission Report based on 2005 General Information Sheets (GIS) of RRPI, RRMI, RRHI, LPI and F&N. 19 May 2006.

In 2004, LPI increased its capital stock to PhP127 million with a new ownership structure: 74% by Lafayette Mining Ltd., 26% by Philco (jointly owned by LG Metals and KORES Inc.), a Malaysian consortium with South Korean interests.[30] KORES is the South Korean government's resource investment arm which also provided Php$10 million in subordinated debt financing to LPI.[31] Thus, what nominally appears as a Philippine company is actually a foreign-owned company. This is evidenced by the 2004 change of directorship and ownership structure.

In terms of formality, LPI does not disregard the issue of patrimony and the prohibition of foreign control of public utilities and mining firms. However, it does not aim to merely secure operating and managerial rights. It also aims to secure beneficial ownership rights through legal loopholes. For one, it already controls management and operations through the joint venture where it takes over the managerial rights of TVI and full control of mineral processing through Rapu Rapu Processing Inc. (registered with the SEC in 2001).

Under the Mining Act of 1995, beneficial ownership rights (pertaining to mineral extraction and utilization) are bestowed only on Filipinos or Filipino-owned firms. In the case of the Rapu Rapu joint venture, this is bestowed on UMMI. But in 1999, LPI's subsidiary, RMMI, entered into an agreement with UMMI whereby the former may purchase the claims and mineral rights of the latter.

Horizontal layering creates a mesh that hides foreign interest on a national patrimony concern. Lafayette has the option of buying out UMMI's beneficial ownership rights through RRMI and still argues that it does not violate the law because RMMI is Filipino-owned with only two (2) Australian members of the Board of Directors (BOD). But it can also evade issues of foreign infection of RMMI by claiming that RMMI is owned by a Filipino-owned corporation called Rapu Rapu Holdings (registered with the SEC in 2000).

In its public pronouncements, LPI argues that its main arena of control is mineral processing through Rapu Rapu Processing Inc. However, it also controls management of mining through the joint venture with UMMI where it holds preponderance, having brought into the joint venture three corporations: Lafayette Mining Ltd., LPI and RMMI. Another horizontal layer created is Rapu Rapu Holdings Inc. (registered with the SEC in 2000) which purportedly owns (60% of) Rapu Rapu Minerals Inc.. But Rapu Rapu Holdings is also a subsidiary of LPI.

Finally, layering is also characterized by interlocking directorships. SEC documents reveal that LPI, Rapu Rapu Minerals Inc. and Rapu Rapu Processing Inc. have the same set of Board of Directors except for LPI which has three Australian directors.[32] They also have the same addresses except for RRMI which chose to locate in another office within Makati City.

On the ground in Rapu Rapu, Lafayette's subsidiaries engage in an incestuous relationship of extraction, buying, processing and exporting. RRMI extracts the ore and sells it to RRPI. While both appear to be distinct and independent juridical personalities, they belong to the same mother company and both have interlocking directorates.

Expectedly, the accountability system is weak except for the group of companies' own internal and financial interests. The guardianship of the national patrimony is relegated to the state or its instruments like the DENR, MGB and EMB as if patrimony is a mainly statal, not societal concern.

Environmental Impact Assessment (EIA)

The Lafayette EIA was conducted by a multi-disciplinary team of experts from Woodward-Clyde Philippines from October 1999 to October 2000. Scoping was conducted on October 14, 1999 through a stakeholders' meeting in Rapu- Rapu.

The team employed the following modules for the assessment:

- Freshwater and marine ecology
- Fisheries
- Air and noise quality
- Geology
- Pedology and land use
- Hydrology and limnology
- Water quality
- Terrestrial ecology
- Human health and safety
- Socio-economics
- Social cost benefit analysis
- Archeological impact
- Environmental risk assessment

The EIA/EIS document was received by the DENR EIA Division on October 27, 2001 and the ECC was issued on July 12, 2001.

It is not clear whether the results of the EIA were validated by all stakeholders in Rapu- Rapu. Accounts from various informants, especially those in outlying areas affected by the mining activity (such as Prieto Diaz and Gubat) indicate that they were not informed of the results.

It is also important to note that the Provincial Environment Code of Albay was only enacted on July 22, 2003. Some pertinent provisions of the Code could have altered the course of events prior to the issuance of the ECC. These include the following:

- Creation of a 7-member EIA Monitoring Team (Section 93) that would participate in scoping, validate the scoping sessions, participate in the preparation of the EIS document, review the EIA document and participate in public consultations (Section 94).

- The Governor's validation of the findings of the EIA and affixation of his/her signature to validate its authenticity (Section 95)

- The Governor's prerogative to procure the services of experts to validate the findings of the EIA or to conduct another EIA (Section 97); and,

- Reiteration of the local government authority (under Sections 26 and 27 of the Local Government Code) to ensure consultations and prior consent

Impact Areas

The present Lafayette mining operations directly impact on the villages of Malobago, Pagcolbon, and Binosawan which have an aggregate population of 1,007 persons (as of 2000) and an aggregate area of 2,026 hectares. Only about 40 persons were added to the population since 1999.

Malobago is adjacent to Sta. Barbara, the former site of Hixbar Mining. Of the three, Binosawan is the most isolated with no access except through the rough Pacific waters. The people rely on fishing, coconut farming and patches of food crop areas. The best natural endowments of the area are the creeks and rivers, one of which (the Binosawan) river is being tapped by an NGO-assisted micro hydro power project. More than 220 persons are directly engaged in fishing. This signifies that every household has a fisher in the family.

The population is characterized by poverty, low access to health services and limited access to higher education.

Table 4. Basic Features of Main Impact Areas

Basic Features	Brgy. Pagcolbon	Brgy. Binosawan	Brgy. Malobago	Total
Land Area (hectares)	172	843	1,011	2,026
Population	153 (2000)	454 (2000)	400 (2000)	1,007
No. of households	24 (2000)	84 (2000)	69 (2000)	177
Location	Southern tip	Northern tip	Southern tip	
With high school education	19	---	21	
With college education	3	---	4	
HH for relocation	15			
Significance to Lafayette	Project site (20-hectare pit area, conveyor area; tailing and waste rock dump in Catmon Valley	Tailing and waste rock dump in Catmon Valley	Wharf area; access point for supplies and human resources	
Health clinics	None	None	None	
Drinking and cooking water source	Spring	Spring	Spring (tapped; stored in tank)	
Washing and bathing water source	Creek	Shallow wells (9)	Creek	
HH with toilet facilities	90%	70%	90%	

Sources: Woodward-Clyde EIA/EIS 2000; Rapu RapuMunicipal Socio Economic and Physical Profile, 2002

Presently, these three villages are the main beneficiaries of Lafayette's social development projects and the main source of low-level 30 percent local employment. Around 100 to 120 persons were contractually employed during the exploration period. Private landholders of these villages have also entered into informal land transfer rights induced by the acquisition price of PhP150,000 per hectare.

Of the three barangays, Binosawan is anecdotally described as the 'sacrificial' barangay because the tailings and waste rock dump are located in the Catmon Valley which overlooks the barangay. During the October 11 and October 31, 2005 mine spills, the documented fish kills occurred in Binosawan.[33]

Table 5. Economy of Main Impact Areas

Basic Features	Brgy. Pagcolbon	Brgy. Binosawan	Brgy. Malobago	Total
Land Area (hectares)	172	843	1,011	2,026
Labor force	86 (1995)	50% of pop.	170 (1999)	501
Major employment	Lafayette (mining)	Fishing, farming	Fishing, farming (abaca and coconut)	
Employed by Lafayette during exploration (as of 1999)	41	30	30-50	101-121
Motorized fishing boats (1999)	3	6	12	21
Non-motorized fishing boats (1999)	17	18	18	53
People directly engaged in fishing				221
Coconut lands (hectares)	28 (1,202 trees, 21 farms)	47 (2.461 trees, 23 farms)	59 (3,352 trees, 26 farms)	
Rice lands (hectares)	---	5	---	
Abaca lands (hectares)	5	6	9	
Livestock	95	182	96	

Sources: Woodward-Clyde EIA/EIS 2000; Rapu Rapu Municipal Socio Economic and Physical Profile, 2002

The indirect impact barangays are Sta. Barbara (pop. 92 as of 2000), Linao (pop. 287 as of 2000) and Tinopan (pop. 556 as of 2000). Sta. Barbara is on the southern side of the island adjacent to Malobago. It is the former site of Hixbar Mining and is characterized by waste lands and contaminated rivers and creeks. The continuing risks to health and livelihoods have induced out-migration such that the village looks like a ghost community. The 2000 population (92) is lower than the 146 level it had in 1995.

Linao and Tinopan are on the northern side of island reachable only by boat. Linao is adjacent to Binosawan whose coastal zone is characterized by white beaches. People are dependent on coconut farming and fishing. Tinopan is a relatively active barangay where, apart from farming and fishing, people are engaged in construction and trading.

In the geological map of Rapu Rapu, the villages of Malobago, Sta. Barbara, Tinopan and Linao contain lands with massive sulphides and are very vulnerable to AMD.

Mine Spill: Environmental, Health and Economic Effects

Concerns regarding the environmental, health and economic risks of Lafayette mining in Rapu Rape were re-ignited during the October 11 and October 31, 2005 mine spills. It was the rainy season. In the executive summary of the final report of the Rapu Rapu Fact Finding Commission, these incidents were described as follows:

- October 11, 2005 mine spill – There was an overflow of tailings and processed water (containing cyanide) in the waste pond (called events pond). This pond is located near the CIL (gold processing) plant. The overflow was caused by a malfunction of the main pump and the back-up pump that was supposed to pump the tailings and processed water to the upper tailings pond. Within three hours of the malfunction, a combination of slurry materials and processed water overflowed. According to RRPI and the Mines and Geosciences Bureau (MGB) Region V,

around 20 cubic meters of slurry and processed water overflowed reaching the Alma and Pagcolbon creeks. A subsequent DENR water analysis found that the slurry materials contained cyanide beyond the 0.05/mg per liter standard. In the afternoon of the same day, dead fishes, shrimps and crustaceans were discovered in the mouths of the two creeks.

- October 31, 2005 mine spill – Heavy rains fell on Rapu Rapu that day. The tailings pond overflowed. To protect the dam structure, RRMI management decided to undertake a "controlled" discharge. Water and effluents containing cyanide overflowed to the Ungay and Hollowstone creeks and Binosawan River. By the morning of November 1, dead fishes and other marine organisms were found in the creeks and river. The resulting fish scare affected 80 percent of the fish trade in Legazpi City.

Evidence shows that the mine spills were not pure accidents or events that could not have been anticipated. The first incident was caused by non-fulfillment of DENR-approved plant design which specifies that tailings and processed water should be stored at the upper tailings facility, not at the events pond (RRFFC 2005; 3-4). The events pond should be used only for storage during emergencies. Facts show that during the incident, the events pond was already half full during the night shift of October 11 and it overflowed by 2:36 the following morning. The second incident is also not a pure accident. Annual torrential rains are a fact of life in Rapu Rapu and this phenomenon has been indicated in the Woodward-Clyde EIA/EIS. Secondly and more significantly, Lafayette did not follow the DENR-approved dam design which requires 190 meters in height.[34] Instead, Lafayette constructed a 127.9-meter with insufficient freeboard capacity even during common rainfall (RRFFC 2005;5).

The mine spills and the fish kills induced reactions, including indignation from small fishers and civil society organizations in Sorsogon. Several studies were conducted following the spills. The Center for Environment Concerns (CEC) conducted an independent investigation and gathered testimonies from seven (7) mine workers who testified that the spill was not the result of an accident; rather, it was an intentional discharge to protect the tailings dam.[35]

The Bureau of Fisheries and Aquatic Resources (BFAR) conducted several tests and took water samples from eleven (11) locations in Rapu Rapu and Prieto Diaz on November 3-4, 2005.The results indicate that freshwater samples from Pagcolbon and Malobago and sea water samples from Bacon were within safety limits, the freshwater sample from Binosawan and sea water from Prieto Diaz and San Ramon were dangerously high in metal and other toxic contents and that drinking water from Malobago was within safety limits of mercury content.[36] An independent expert, however, opines that the BFAR tests were misleading because they focused on mercury which Lafayette does not use.

A separate test conducted by the UP Natural Science Research Institute (UP-NSRI) on March 1, 2006 showed that water and fish from around Rapu Rapu and Sorsogon are safe for human consumption.[37] This test reinforces five (5) previous studies conducted by the BFAR. Of the five, however, one test showed high level of mercury in the fish samples from Prieto Diaz. This prompted the Vice Governor of Sorsogon to warn the public causing a fish scare that resulted in huge economic losses to small fishers.

In response to the fish scare, the Governor of Sorsogon commissioned the UP-Manila Department of Pharmacology and Toxicology to conduct another study (on February 20-22, 2006) using fish samples and blood and urine samples from six (6) villages in Sorsogon and Albay. The blood and urine samples were taken from 25 households in Gubat, Prieto Diaz, Barcelona, Bacon, Bulusan and one barangay in Legazpi City. Headed by Prof. Nelia Cortez-Maramba, the tests did not produce any conclusive results.

As reported in the media, the team was unable to determine the amount of arsenic, mercury, lead and cadmium because these metals were below the detection limits of the machines.[38] The team also did not check for cyanide because the mine spills occurred three months earlier and it was no longer logical to assume that cyanide was still present in the samples. The overall results of the test received speculations from the media prompting Governor Raul Lee of Sorsogon to denounce Prof. Maramba's testimony at the Rapu Rapu Fact Finding Commission as unethical.[39]

The Maramba study detected mercury in the fish samples but has yet to establish direct links to health effects on the human population. The team is still awaiting results of laboratory tests from Minamata (Japan) for the urine samples and New Hampshire for the water samples.[40] The presence of toxic heavy

metals in soil, water and sediments and in the urine and blood samples are telling enough of serious risks and threats (RRFFC 2005;8).

The Albay Provincial LGU has reacted to the Sorsogon fish (mercury) scare by conducting its own investigation. The Vice Governor, James Calisin, requested the National Bureau of Investigation (NBI) to probe the origins of the fish scare and to find out who was responsible for the mercury-laden fish samples used during the BFAR second test.[41]

Mineral processing operations have been suspended and Lafayette has since been imposed a PhP10.4 million fine for violating the Clean Water Act. According to Lolibeth Medrano, EMB Director, this fine represents PhP200,000 per day from October 11, 2005 until December 14, 2005, the latest sampling date before the Pollution Adjudication Board (PAB) issued its decision against Lafayette. This fine is on top of the PhP300,000 fine for violating some provisions of the ECC. The PAB ruling includes the following conditions for the lifting of the suspension: (a) approved environmental management system or ISO 14001 certification; (b) comprehensive pollution control program including plans and specifications of the antipollution facility; (c) budget and chart of activities; (d) surety bond of 25% of total cost of the pollution control program; (e) detailed description of the interim remedial measures to mitigate pollution pending the completion of the pollution control program; (f) employment of a pollution control officer duly accredited by the DENR; (g) notarized undertaking showing proof of compliance with all the conditions; (h) rehabilitation of the settling, polishing and event ponds.

Despite the suspension, environmental and health concerns persist. In Rapu Rapu, a pregnant pygmy sperm whale was found dead on January 26, 2006. The pygmy sperm whale is an endangered species protected under the Convention on International Trade in Endangered Species (CITES) and is included in the National Red List of Philippine Wildlife Fauna.

The series of studies and the seemingly-conflicting results emphasize the importance of science as the common denominator in policy development and decision making.

Rapu Rapu Special Economic Zone

On May 1, 2004, President Gloria Macapagal-Arroyo (GMA) issued Proclamation No. 625 declaring a 42-hectare portion of the Lafayette mining site in Barangays Malobago and Pagcolbon as a Special Economic Zone upon the recommendation of the Board of Directors of the Philippine Economic Zone Authority (PEZA). By said proclamation, the area would be known as the Rapu Rapu Ecozone.[42]

At first glance, the proclamation appears like a straightforward incentive in favor of a foreign investor like Lafayette. In fact, the proclamation triggered the commencement, two months later, of mining site construction and gold production. The proclamation would entitle Lafayette exemptions from national and local taxes resulting in foregone revenues.

A deeper look at the proclamation, however, reveals a political dynamics that reflect weaknesses in the policy architecture on mining and political governance. The Rapu Rapu Fact Finding Commission (RRFFC) would describe this as a "major blot" in Lafayette's corporate character. This blot refers to Lafayette's use of the spurious SB Resolution 150-2003 with the forged signature of SB Secretary Allan Asuncion to press approval of its ECOZONE application (RRFFC 2005; 12). Lafayette also exerted pressure on the Office of the President. In his plea, then LPI Country Manager Roderick Watt emphasized that the $45 million investments from Lafayette Mining Ltd. (Australia) and the $10 million investments from the LG Group of Korea would be put on hold unless the ECOZONE application was approved (RRFFC 2005; 11).

The ECOZONE idea was first proposed by the Department of Trade and Industry (DTI) in the wake of the January 2004 decision of the Supreme Court declaring RA 7942 (Mining Act of 1995) unconstitutional and the Board of Investments (BOI) decision to exclude foreign-owned mining projects from its list of investments qualified for tax incentives.[43] Thus, the rush to approve the RRMI application could be construed as a preemptive move in case the Supreme Court would finally decide on the unconstitutionality of RA 7942.

There are indications that issuance of the proclamation may have disregarded two fundamental requirements: **one**, endorsement from the Sangguniang Bayan (municipal legislative body) through a resolution signed by the Municipal Mayor; **two**, land conversion clearance or certificate of exemption from the Department of Agrarian Reform (DAR) or a zoning certification from the Housing and Land Use Regulatory Board (HLURB) especially that Rapu Rapu has an existing land use plan and the area covered by the proclamation includes land classified by the LGU as agricultural land. Some of these lands

may have been covered by the Comprehensive Agrarian Reform Program (CARP). Most certainly, the Rapu Rapu Sangguniang Bayan has already nullified SB Resolution 150-2003. It is not known whether RRMI, the ECOZONE applicant, has gotten a DAR conversion clearance or exemption certificate from the DAR.

Anecdotal accounts in the direct impact barangays indicate that Lafayette has been acquiring land rights through purchase at PhP 150,000 per hectare. Section 29 of the Special Economic Zone Act (RA 8748) provides that only the government has the power of eminent domain, i.e. to acquire either by purchase, negotiation or condemnation proceedings, any private lands within or adjacent to the ECOZONE for purposes of land consolidation for zone development purposes, acquisition or right of way to the ECOZONE and protection of watershed areas and natural assets.

In October and November 2005, the Sangguniang Bayan of Rapu Rapu issued a series of resolutions and a position paper calling for the revocation of Proclamation 625 and cancellation of Lafayette's Environmental Compliance Certificate (ECC). These resolutions include the following:

- Resolution No. 165-2005 dated October 18, 2005, praying for the revocation of Proclamation 625 and cancellation of the ECC issued to Lafayette. This resolution was triggered by the October 11, 2005 mine spill and information that Lafayette was shipping out minerals from the island without disclosing the destination.

- Rapu Rapu Sangguniang Bayan Position Paper dated October 18, 2005, declaring "extreme disgust over the anomalous and irregular manner by which Presidential Proclamation 625 was founded…"

- Resolution No. 183-2005, dated November 22, 2005, appealing for the support of all municipal and city councils of the Bicol Region in favor of the Rapu Rapu Sangguniang Bayan's call for the revocation of Proclamation 625 and cancellation of the ECC issued to Lafayette.

- Resolution No. 182-2005, dated November 22, 2005, appealing to all residents of Rapu Rapu to support the Sangguniang Bayan's call for the revocation of Proclamation 625 and cancellation of the ECC issued to Lafayette.

How Proclamation 625 came to be reveals a perplexing story of how policy issuances can be derived from imperfect information and vested interest lobby. The story begins in 2002 when Rapu Rapu Minerals Inc. (RRMI), an LPI subsidiary, filed an application to create a Rapu Rapu ECOZONE in the Lafayette mining site. It was an application filed by a supposedly Filipino-owned company (headed by Roderick Salazar III, President) but direct lobby work was conducted by Roderick Watt, the Australian Country Manager of LPI. The original application pertained to the 25-hectare processing plant area of the mining site. During the same year, Roderick Watt directly requested the Mayor, Vice Mayor and the Sangguniang Bayan (SB) to endorse the application.

In May 2003, the PEZA required RRMI to submit two important documents: (a) endorsement from the Sangguniang Bayan of Rapu Rapu, and, (b) DAR conversion clearance/ exemption certificate or HLURB zoning certification. In June of the same year, LPI succeeded in getting the endorsement of the Albay Provincial Governor but failed to get the direct endorsement of the Rapu Rapu Municipal Mayor, Dick Galicia. The latter, persuaded the Sangguniang Bayan to exercise discretion in responding to Roderick Watt's request. Correspondingly, the Vice- Mayor, relayed the SB's rejection of Roderick Watt's request.

Lafayette's opportunity came in November 23 during the 90th Regular Session of the SB. The Vice Mayor was on leave. Acting as Vice Mayor was SB member Larry Batas who also presided the session. The same session produced Resolution 150-2003 endorsing RRMI's application for ECOZONE status.

In February 2004, Roderick Watt wrote President GMA requesting approval of the RRMI application for ECOZONE status and brandishing the following documents:

- Registration Agreement between RRMI and PEZA. The PEZA Board of Directors approved the RRMI application as early as December 11, 2003

- Signed but undated pro-forma Certificate of Concurrence from the Albay Provincial Governor

- Endorsements from the Barangay Captains of Malobago, Pagcolbon and Binosawan (the direct impact barangays)

- SB Resolution 150-2003 endorsing the RRMI application for ECOZONE status

By May 1, 2004, Lafayette got its wish with Proclamation 625. The problem: 2004 was an election year. There was a political turnover at the LGU level. Secondly, there was a mine spill in October 11, 2005. The new set of officials at the LGU was pressured to act. It demanded accountability pertaining not only to the mine spill but also to the manner by which Proclamation 625 was decided upon and issued.

Crucial to the issue is SB Resolution 150-2003. According to the new SB (during its 54th Regular Session on October 18, 2005), SB Resolution 150-2003 was a spurious document and one that should not have been used as basis for Proclamation 625. The new SB cites the following defects of the resolution:

- Resolution 150-2003 was not entered in the minutes of the 90th Regular Session of the previous SB.

- Said resolution was not signed by the majority of the SB members.

- Said resolution was bogus and was not properly transmitted to the Office of the Mayor.

- Said resolution did not bear the signature of the Municipal Mayor, Dick Galicia.
- The signature of the SB Secretary, Allan Asuncion, was fictitious[44]

Additionally, the Certificates of Concurrence signed by (former) Provincial Governor Al Francis Bichara, Acting Vice Mayor Larry Batas and the three Barangay Captains of Malobago, Pagcolbon and Binosawan were undated pro-forma certificates.

There was sufficient time for the PEZA and the Office of the President to exercise due diligence in verifying compliance to the requirements before issuing the proclamation but this was not conducted. In fact, evidence shows that the PEZA and the Office of the President were bent on approving the RRMI application. The PEZA Board of Directors approved the RRMI application on December 11,2003 (PEZA Certificate of Board Resolution No. 03-320) one week ahead of PEZA Director Lilia B. De Lima's letter of request (letter dated December 16,2003) for Rapu Rapu Mayor Dick Galicia to attest SB Resolution 150-2003. On January 22, 2004, Mayor Dick Galicia informed the PEZA that SB Resolution 150-2003 was not properly transmitted to the Office of the Mayor. Notwithstanding the defects in the application, the PEZA violated its own rules and approved the RRMI application.

In January 2005, the Rapu Rapu SB formally and officially declared "null and void" Resolution 150-2003 (through Resolution No. 068-2005).

Financial Implications to the LGU

Under Section 290 of the Local Government Code (RA 7160), LGUs shall, in addition to the IRA, have a 40 percent share of the gross collection derived by the national government from mining taxes, royalties, forestry and fishery charges, etc. and from its share in any co-production, joint venture or production sharing agreement in the utilization and development of national wealth within their territorial jurisdiction.

The national government's share in the Rapu Rapu Polymetallic Project will be governed by Chapter XIV, Section 280 of the Mining Act (RA 7924) concerning MPSAs. This mainly pertains to the excise tax. In turn, this will be governed by RA 7729 which reduces excise tax rates on metallic and non-metallic minerals and quarry resources. Section 151 of RA 7729 indicates that the tax on metallic minerals shall be based on the actual market value of the gross output at the time of removal. In the case of copper and other metallic minerals, the tax base would be one (1) percent on the first three years upon effectivity of RA 7729, one and a half (1.5) percent on the fourth and fifth year and two (2) percent on the sixth year. Gold and chromite will have a tax base of two (2) percent.

In the case of Lafayette, the government's actual share will be dependent on two variables: **one**, the volume of ore extracted and, **two**, the market value of the ore at the time of removal. The Rapu Rapu Fact Finding Commission has already found evidence of underreporting and possible tax cheating by around 50 percent (RRFC 2005;13). Secondly, market valuation would be vulnerable to under-pricing since the seller (RRMI) and the buyer (RRPI) are sister companies being subsidiaries

of Lafayette Philippines Inc. Thirdly, export volume and values would also be dependent on integrity and honesty of the Bureau of Customs, the Rapu Rapu ECOZONE being a separate customs territory.

The national government and LGUs do not have much to expect during the prime years of mining operations. Under RA 7942, mining investors with FTAA enjoy a 5-year tax holiday for a maximum of five (5) years from commercial production. In addition, they practically enjoy tax pardons since they can carry forward losses and accelerate depreciation of fixed assets which serve as reference for tax deductions. They are also exempted from payment of real property taxes on pollution control devices.

In the case of Lafayette, the government's share is not determined by RA 7916 or the Special Economic Zone Act of 1995 (as amended by RA 8748 or the Special Economic Zone Act of 1998). Section 24 of RA 8748 states that no taxes, local and national, shall be imposed on business establishments operating within the ECOZONE except real property taxes on lands owned by the developer. In lieu of taxes, Lafayette would remit five (5) percent of gross income. This would be shared between the national government (3 percent) and the local government unit where the ECOZONE is located (Section 24, RA 8748).

Even if the government were to generate its share from the excise tax, the revenue share would be likely reduced due to underreporting of production outputs and the government's inability to verify or validate the production reports. In 2005, RRMI and RRPI underreported their production of gold ore by 50 percent and, correspondingly, underpaid their excise taxes by 50 percent (RRFFC 2005; 13).

Institutional Implications

Rapu Rapu is not included in the list of designated ECOZONE areas when the Special Economic Zone Act was passed. Only portions of Tabaco and Legazpi were included in the list (Section 5). Rapu Rapu, therefore, falls under a special category which, under Section 6 of the Act, should, through a feasibility and engineering study, conform to the following criteria (among others):

a. The proposed area must be identified as a regional growth center in the Medium-Term Philippine Development Plan or by the Regional Development Council;

b. The existence of required infrastructure in the proposed ECOZONE, such as roads, railwa ys, telephones, ports, airports, etc., and the suitability and capacity of the proposed site to absorb such improvements;

c. The availability of water source and electric power supply for use of the ECOZONE;

d. The extent of vacant lands available for industrial and commercial development and future expansion of the ECOZONE as well as of lands adjacent to the ECOZONE available for development of residential areas for the ECOZONE workers;

e. The availability of skilled, semi-skilled and non-skilled trainable labor force in and around the ECOZONE;

f. The area must have a significant incremental advantage over the existing economic zones and its potential profitability can be established;

g. The area must be strategically located; and

h. The area must be situated where controls can easily be established to curtail smuggling activities.

The above criteria suggest a priori conditions or that the described characteristics should have been in place prior to its consideration as a special economic zone. Firstly, Rapu Rapu is not a growth center. The supposed "vacant" lands occupied by the ECOZONE are not classified for residential, commercial or industrial use. In fact, they are watershed areas feeding seven catchment areas and natural drainage systems. Any expansion would have critical impact on the fragile physical environment. Thirdly, the area is not strategically located in terms of accessibility by other economic players. Fourthly, ECOZONES are designed as growth centers for multiple players or multiple investors. The Rapu Rapu ECOZONE comes as a different breed – one that appears to be a community of various establishments but actually an incestuous family of subsidiaries (with interlocking directorates) under Lafayette. Given the fragility of the ecosystem, the local government unit and local communities should have been informed and consulted prior to the issuance of Proclamation 625.

Moreover, the institutional arrangement suggested in Proclamation 625 effectively shields Lafayette from the authority of the Rapu Rapu LGU. Section 6 of RA 8748 states that the ECOZONE " …shall administer itself on economic, financial, industrial, tourism development and such other matters within the exclusive competence of the national government." Moreover, Section 8 of the Special Economic Zone Act provides that the ECOZONE shall be operated and managed as a "separate customs territory" under the Philippine Economic Zone Authority (PEZA), a body attached to the Department of Trade and Industry (DTI). Likewise (Section 15), the Ecozone shall be organized, administered, managed and operated by the ECOZONE Executive Committee composed of an Administrator and Deputy Administrator appointed by the PEZA Board of Directors. In effect, the so-called exclusive competence of the national government is now translated into a problem of coordination between the Department of Trade and Industry which oversees the ECOZONE through the PEZA and the Department of Environment and Natural Resources which oversees the mining operations.

Lafayette's Social Development and Environmental Management Program

Lafayette's social development program and environmental management program form part of the 29 requirements of the ECC issued by the DENR on July 12, 2001. Also inclusive are necessary social costs such as relocation of the families directly affected by the project, provision of livelihoods and skills training and provision of economic opportunities through priority in local hiring.

Lafayette claims that it spent PhP200,000 per month for health and human welfare upliftment during the exploration period and pre-operational phase of the project (EIA/IS, p. 4-25).

In the EIS submitted to DENR, Lafayette committed to the following:

- Relocation of 15 households directly affected by the project (EIA/EIS, p. 4-26)

- Priority to local labor hiring; in this regard, Lafayette defines local hiring as locals coming from the direct impact barangays and next immediate barangays which means Malobago, Pagcolbon, Binosawan, Linao, Tinopan, Sta. Barbara and Poblacion (Woodward-Clyde 2000; 4-27; powerpoint presentation of CARE Group). Labor generation during the exploration period was around 100-150/week.

- PhP90 million for mine closure at the end of operations on top of the PhP300 million/year for rehabilitation during the mine life, i.e. 5 to 7 years (Woodward-Clyde 2000; 4-27)

- Creation of a Monitoring Trust Fund for 10 years from the date of mine closure (Woodward-Clyde 2000; 4-28)

- Turn over of the Malobago port to the local authorities, conversion of the mine pit into a water reservoirs and possible hydroelectric power generation and salvaging of the dormitories, camps, plants and buildings for beneficial use of the people (Woodward-Clyde 2000; 4-28)

- Creation of a community development program advisory group (CDPAG) to be chaired by the Rapu Rapu Municipal Mayor. A Lafayette representative will act as Vice-Chair and the Malobago Barangay Captain as Secretary and Treasurer. Funding for the CDPAG would be around PhP 200,000 per month (Woodward-Clyde 2000; 4-28)

- Formulation of a Community-Based Environmental Monitoring Program to be handled by a Steering Group composed of the Mayor or Vice Mayor (Chair) and other stakeholders such as Lafayette, NGOs, Church, Sangguniang Bayan (SB) of Rapu- Rapu, Sangguniang Kabataan (SK), Barangay Captains of the direct impact barangays, MHO, CENRO and other NGOs and POs. In addition, there will be Barangay Monitoring Teams whose leadership would be determined by the respective barangays captains (Woodward-Clyde 2000; 4-32/33)

- Creation of a Mine Rehabilitation Trust Fund (MRTF) to which Lafayette would contribute through the Monitoring Trust Fund (MTF) and the Rehabilitation Cash Fund (RCF). The MTF is estimated at no less than PhP 50,000 per month and the RCF is estimated at 10% of the amount needed for the environmental protection and enhancement program (EPEP) or PHP 5,000, whichever is lower (Woodward-Clyde 2000; 4-38)

In its accomplishment report for 2000-2005, the Community Action Relations and Education Group (CARE Group) of Lafayette indicated that the company spent a total of PhP8.9 million for infrastructure support (PhP6.24 million), livelihood (PhP128,944), health and sanitation (PhP1.7 million), education (PhP 705,100), capability building (PhP114,365) and socio-cultural activities (PhP40,000). The infrastructure support also includes relocation expenses for the 15 affected families.

Lafayette's Financial Vulnerability

Lafayette considers the mineral resources of Rapu Rapu as speculative assets (Woodward-Clyde 2000; 3-29). Its venture into the area is infected with this definition as it also rests on speculative approaches to generate investments rather than absorb much of the risk through equity investment. There are indications that its Filipino partners are reluctant to risk their own equities such that Lafayette is obliged to generate investments from the Australian Stock Exchange.

The suspension of operations after the October 11 and October 31, 2005 mine spills have already created uncertainties among Lafayette's investor and creditors. News accounts attributed to Lafayette indicate that the company has been losing PhP150 million a month since the suspension over the last six months.

Lafayette is into a coping strategy mode. After the November suspension, it went into a US $42 million rescue package and a management reshuffle aimed at showing that "Filipinos run the show".[45] This new strategy highlights the entry of Carlos Dominguez as the new LPI country manager and the mobilization of Bicolano prominent personalities and families. In Albay, this move is highlighted by the tendency to put blame on the bad management and lack of sensibility of Australian managers against the better management abilities and cultural sensitivity of Filipino managers.

However, the above seems to be a transitional coping strategy against a serious financial problem owing to the suspension of operations. Unknown company officials opine that bank creditors might go into foreclosure proceedings unless the company resumes operations.[46] Reuters also cited a Lafayette Mining Ltd. statement warning that "foreclosure by creditor banks of Lafayette is a possibility in the near term as a result of the delay in the project's start that was originally scheduled in mid-March (2006)."[47] In the same statement, the company claims that it has been losing US $2.9 million per month for the past six months and the total debt is now running at US $189 million.[48] This debt exposure includes US $35 million in debt financing, A$140 million hedged market to market exposure and an A$60 million metal forward contract liability.[49]

Aerial photo of Lafayette open-pit mining operations in Rapu Rapu Island.
©Greenpeace/Jimmy A. Domingo

PART FIVE: Current Effects and Potential Impacts of Lafayette Mining

Anti-mining signs in Rapu-Rapu Island. The current and future losses to the people of Rapu-Rapu and outlying areas far outweigh the benefits of the mining project. The losses do not only pertain to the immediate after-effects of the environmental damage but also to the future social costs that will be incurred due to diminution of natural assets necessary for livelihoods and potential psycho-social stresses and health costs. ©Greenpeace/Lester Ledesma

Lafayette's presence and mining experience in Rapu Rapu is still relatively short. The October 11 and October 31, 2005 mine spills occurred after barely four months of mineral processing operations. Several investigations and tests tend to produce conflicting results. Responding to public pressure, President Gloria Macapagal-Arroyo issued Administrative Order No. 145 creating the Rapu Rapu Fact Finding Commission to investigate the effects of the mining operations of Lafayette on people's health and environmental safety. Meanwhile, Lafayette has been urging government to allow it to test the corrective measures. The problem, however, is not mainly the results and effects of the mine spills. The main problem is whether or not mining should be allowed in Rapu Rapu. That mining in Rapu Rapu should not be allowed has been raised by the Institute for Environmental Conservation and Research (INECAR) of the Ateneo de Naga University based on the findings of the study of Regis et al. (2001).[50]

LPI's Environmental Impact Statement argues that the mineral resources do not have value to the community, not even an asset value without the investor or without Lafayette.[51] This is a self-serving argument. **Firstly**, why would Lafayette risk an estimated US $42 million in investments (and predict revenues of US $246 million) if the Rapu Rapu mineral resource has no value?[52] **Secondly**, while LPI argues that the economic resource value of the minerals remain speculative without the investor, Lafayette itself uses the same speculative value as inducement to generate capital. It could not have gone public to attract investments without framing the Rapu Rapu mineral resources in monetary terms. **Thirdly**, the ability of the investor to bring in capital and technology does not negate the prerogative of the resource owners (the present and future generations of Rapu Rapu) to choose whether to use the resource now or in the future. **Fourthly**, the present financing arrangements and behavior of the state do not guarantee that the present and future generations will be justly compensated for the permanent loss of the resource and the concomitant costs incurred during and after the extraction of the mineral resource.

Mining disasters and independent studies elsewhere also provide strong evidences to what could happen in Rapu Rapu if Lafayette mining were to continue. The island has a fragile ecosystem where the physical characteristics and geographic location limit its carrying capacity for a growing population. The prospect of mining 80 percent of the island raises fears not only among island residents but also those of the outlying areas and the general public. As expressed by the Rapu Rapu Fact Finding Commission, Lafayette may have offered the best technology and best practice in environmental management to Rapu Rapu Island but no proof is yet available on prevention of acid mine drainage (AMD) in hilly terrains (RRFFC 2005; 9). Scientific studies show that AMD prevention through subaquaeous deposition of mine waste has found success only in flat terrains (RRFC 2005; 9). Rapu Rapu Island is exactly the opposite with only 12 percent of territory consisting of narrow coastal plains.

Environmental Effects and Potential Impacts

The Marinduque mining disaster is a strong reminder of design failure and corresponding effects. On March 24, 1996, the Marcopper tailings dam broke causing toxic spills and flash floods and isolating five (5) villages with a population of 4,400 persons. Government estimated that the toxic waste killed PhP1.8 million worth of mature freshwater and marine fishes and PhP5 million worth of bangus fry. The floods also buried one village under six feet of mud causing 400 families to evacuate. A study conducted in May 2000 by the US

Geological Survey in Marinduque found that the Boac River is nearly devoid of fish and the river contains extensive tailings deposit. The Philippine government reportedly spent PhP20 million for the study.

In 2003, an MGB official in Benguet raised alarm on the hazards of tailings dams during downpours.[53] The same official also raised alarm that of the 10 tailings dams of Lepanto and Philex mines, only two (2) were operational and maintained.

Experts from the academe conducted studies on the effects of mining in Benguet. A study presented by Engr. Josephine Dulay of the SLU Chemical Engineering Laboratory in October 2004 and February 2005 showed elevated levels of cyanide at the mill outlet of the Lepanto Carbon-in-Pulp processing plant and elevated amounts of chromium, lead and mercury in other sampling sites.[54] The water samples were taken from the mouth of the Abra River in Vigan and in Sta. Cruz, Ilocos Sur.

Another study presented by Prof. Jocelyn Rafanan and Adwin Almo of the Biology Department at the UP-Baguio, showed that root growth of native onions *(Allium fistulosum)* were inhibited by water samples taken from the Lepanto mill outlet at the Baguyos Bridge. This effect phenomenon is attributed to high cyanide content of the water and low dissolved oxygen.[55]

Still another study presented by Dr. Ana Marie Leung of the SLU Department of Preventive and Community Medicine found high levels of cyanide, copper and lead in the blood samples of residents in Paalaban, a community located behind the Lepanto mill.[56]

A fisherman among the lush mangroves of Prieto Diaz, Sorsogon. Prieto Diaz is directly across Rapu Rapu and its residents share whatever misfortune arises from mining disasters in the island. ©Greenpeace/Lester Ledesma

While mining disasters and scientific studies elsewhere provide strong evidence of the hazardous impacts of mining, Lafayette tends to downplay these impacts. However, its own Environmental Impact Assessment does not fail to foresee potential negative impacts. Some of the projected major effects and impacts are the following:

a) Mineral Resource Depletion

Lafayette estimates that there are 4.93 million metric tons (MT) of ore reserves in the 20-hectare open pit area alone. The joint venture project aims to produce 36,000 MT of copper concentrates and 24,000 MT of zinc concentrate per year. At the end of five years, the project shall have extracted an estimated 5 million MT of ore. Once extracted, these minerals would have no reasonable time frame for augmentation or return. These resources are depletable where the replenishment feedback loop cannot be determined in the near term.

b) Alteration of Topography

The total area covered by the polymetallic project is 407 hectares consisting of 72 hectares of eight (8) patented claims and 335 hectares of two (2) MPSAs. Mineral development activities will be concentrated in 150 hectares that will include a 23-hectare catchment area for the tailing pond, 24.2-hectare open pit (800m x 350m), 35-hectare waste dump and other areas reconfigured during the construction and cut-and-fill operations. Inevitably, 80 hectares of the area will be totally and permanently altered inclusive of its land use pattern. The open pit will become a permanent lake and the tailings dam and waste dump will become useless land that serves as a perennial threat to the local community. Likewise, the natural drainage systems of the project site will be permanently altered. This alteration is likely to induce flooding and sedimentation of water ways, catchment areas and lowland water bodies because of the hilly topography of the island.

c) Mass Movement and Flooding

The massive alteration of the topography creates risks of mass movement and flooding. While LPI argues that it uses sound earthworks and drainage systems, the October 11 and October 31 (2005) mine spills in Rapu Rapu indicate the vulnerability of the island's ecosystem to LPI's physical reconfiguration of the project site. Mass movement and flooding are likely to occur in several high risk areas such as the following:

- **Tailings Dam** – Two tailings ponds will be constructed at the north side of the pit at 170 masl and 210 masl, respectively. The dams are designed such that the tailings will have a minimum of 2-meter water cover to prevent acid mine drainage. The tailings have high sulphide content and due to lack of carbonates which can act as buffer against low pH, the tailings are likely to create acidic conditions when exposed to the air (Woodward-Clyde 2000; 4-22). The dams are vulnerable to slope failure which is likely to induce overflows during the rainy season as what happened on October 31, 2005 when the dam overflowed after a heavy rain the previous day. Although Lafayette has recently constructed new diversion canals on the slopes to divert surface runoff, this does not guarantee against heavy and continuous rains.[57] Sudden overflows will override safety and protective measures such as diverting the overflows to the waste rock dump and sediment collection (at the northern end) before discharging the "cleaned" water into the sea. This risk is emphasized by the failure of Lafayette to follow the approved dam height of 190 meters. After the mine spills in October 2005, Lafayette's rehabilitation plan merely offered augmentation of the dam height to 135 meters from the present 127.9 meters (RRFFC 2005; 5).

  It is also important to note that the tailings dam consists mainly of waste rock and compacted clay soil.[58] Again, there is no guarantee that compacted clay will not collapse during the project term and beyond.

  The Philippine public continues to be reminded of the Marinduque mining disaster on March 24, 1996. The rock around the plug in the Tapian Pit was fractured unleashing the waters. The chain reaction unleashed 1.6 million cubic meters of tailings to the Boac, Makulapnit and Mogpog rivers affecting surrounding areas, including Calancan Bay. It is estimated that 703,228 cubic meters remain deposited in the Boac and Makulapnit rivers.[59] By August the government ordered a closure, Marcopper was gone and so was Placer Dome, the managing company. Placer Dome denied responsibility and pointed its finger at Marcopper which was no longer in existence.

  Given the character of the tailings, the tailings ponds do not provide final guarantees for safety. Rather, they are temporary and can be managed only during the lifetime of the project. The ultimate problem is what to do or how to finally dispose of the tailings. Submerging the tailings under two (2) meters of water is one thing, preventing a spill during overflows is another. The Woodward-Clyde EIA/EIS (p. 4-22) mentions the possibility of constructing a floating pipeline to allow discharge of tailings away from the sides of the valley. But the question is: where will the tailings be discharged?

- **Waste Rock Dump** – The waste rock dump is located in the Catmon Valley at the northern end of the open pit. It serves two purposes: (1) to buttress against the lower tailings embankment and add strength to the tailings dam; and, (2) to serve as catchment of up stream water runoff for storage and slow release through the gabion mattress and sediment traps. The dump is vulnerable to slope failure and foundation failure. If the dump collapses, the tailings dam would also be vulnerable to collapse.

- **Open Pit** – The mine pit has a surface area of 24.2 hectares towered by two elevation points: 130 meters above sea level (masl) on the east side and 225 masl on the west side. The south end is a slope that drops to the coast while the north end is a valley. Continuous dewatering is necessary to prevent flooding and erosion. Lafayette argues that the pit will be transformed into a lake and would become a biodiversity location. But who will manage the forces of nature and who will prevent the lake from overfilling, unleashing water and exerting pressure on the waste rock dump and tailings dam?

d) Soil Erosion

LPI's own Environmental Impact Assessment indicates that most of the project site is susceptible to moderate erosion and most of the southern portion of the site (i.e. Malobago and Pagcolbon side) is susceptible to severe erosion.[60] The erodability of the soil is also directly influenced by soil type which is clay loam and the absence of vegetation in the uplands.

Building and road construction and breakdown of rocks have removed soil binding and soil compacting (for road, building and dam construction) has reduced the permeability of the soil. The overall result is increased water runoff and soil erosion during the rainy season. Interviews with fishers and residents in Binosawan and Rapu Rapu Poblacion indicate the effects of

erosion evidenced by the color change of marine waters from the coast of Pagcolbon to the marine waters of Prieto Diaz (in Sorsogon) during the rainy months.[61]

LPI argues that the impact of soil erosion will be localized and short term and that the mining area will be rehabilitated inclusive of re-vegetation of slopes surrounding the facilities. During an ocular visit, a member of the research team found that LPI has planted "vertiver" grass (which looks like carabao grass except that it has bigger roots) on the slopes. While this grass may mitigate against soil erosion during the project life, there is no guarantee that it will sustain the water-holding capacity of the upland areas especially that this grass requires regular maintenance.

e) Alteration of Surface Water Hydrology

The project site is located within seven (7) catchments, namely: Pagcolbon (35 hectares), Malobago (96 hectares), Maypajo (40 hectares), Catmon (46 hectares), Alma (less than 25 hectares), Cynthia (less than 25 hectares) and Binosawan (610 hectares). These catchments are drained by creeks and rivers which bear the same names: Pagcolbon Creek (1.6 kms), Malobago Creek (2.1 kms), Maypajo Creek (1.4 kms), Catmon Creek (2.2 kms), Binosawan River (6.7 kms) and Alma Creek (1.1 kms). Except for Malobago Creek which drains into the Albay Gulf, the rest drains into the Pacific Ocean.

The Binosawan Catchment is the most mature and largest. It also has the longest drainage system at 6.7 kilometers. The lower areas are croplands with the most developed area being the fertile valley (planted with rice and other cash crops) approaching the beach area at the village proper. A waterfall upstream is being used for bathing and swimming and a mini hydro-electric project constructed by a Manila-based NGO which provides electricity supply to the village downstream (at PhP0.50 per watt).[62] Most upland owners in the Binosawan Catchment have sold their land rights to LPI at PhP15/square meter.

The Pagcolbon Catchment is within the mine development area. It is characterized by steep valleys and occasional rapids and a drainage length of 1.6 kilometers.

The Malobago Catchment contains adequate vegetative cover and diversity and is endowed with impressive natural pools and steep falls that are potential eco-tourism sites. It sits along the southern border of the project site.

The Maypajo Catchment is most developed at the upper area where the land is being converted to multi-storey farms.

The Catmon Catchment has a drainage length of 1.9 kilometers. Its upper portions are being used for multi-storey farms.

Smaller catchment areas such as the Alma and Cynthia catchments border the Pagcolbon Catchment on the northeast and southwest.

The surface water hydrology of the seven (7) catchment areas and drainage systems will be affected by the earthworks (extraction, compaction, ground clearing) of the project. Such earthworks will increase surface water runoffs during the rainy season. Although some of the rainfall will be temporarily impounded in the tailings pond, open pit, waste dump and sedimentation pond, the project will still use the existing natural drainage system for water disposal which will contain sediments. There is no guarantee that the sediment traps along drainage ways will effectively contain the sediments. This risk was evident during the October 11, 2006 mine spill which affected the Alma Creek resulting in a fish kill owing to increased sedimentation and reduction of oxygen supply.[63]

Increased and uncontrolled surface runoff has been observed by local residents even before the start of the project. Mining operations will exacerbate the vulnerability of the area's surface water hydrology. Most affected will be the Catmon and Pagcolbon watersheds where the mine development is most concentrated.[64]
Overall the direct effects will be the following:

- Alteration of the drainage pattern
- Accumulation of sediments at the bottom of the waterways
- Reduction of the drainage capacity of waterways
- Increased vulnerability to flooding

LPI argues that the progressive rehabilitation and re-vegetation of the unused areas will, in the aggregate, reduce surface water runoff.[65] However, this does not negate and compensate the sacrificial role of the direct impact areas such as the Catmon and Pagcolbon watersheds and creeks.

f) Acid Mine Drainage and Heavy Metals Contamination

Acid mine drainage (AMD) occurs when sulfide bearing rocks are exposed to oxygen and water. The resulting chemical reaction produces sulfuric acid and red iron sulfate. Sulfuric acid is a strong acid. When concentrated, sulfuric acid is a dessicant that removes water from wood, paper, cotton and sugar. It is also an oxidizing agent capable of dissolving heavy metals such as copper, mercury, arsenic, cadmium and lead. Iron sulfate, on the other hand, is the one responsible for the reddish-orange coloration of deposits on rock surfaces and stream bottoms (Regis et al., 2001).

There is sufficient evidence indicating the lethal potential of AMD in Rapu Rapu. A previous study by Regis et al. (2001) on water pH, soil pH, sulfate content and heavy metals content in the ecosystems of the former Hixbar Mining site (Sta. Barbara) and the present mining site of Lafayette (Pagcolbon) in Rapu Rapu indicates AMD presence. This is evidenced by high acidity (low pH values) of soil and water samples in the two mining sites. The same study also indicates high cadmium (in Hixbar and Lafayette mining sites), lead (in Lafayette mining site) and arsenic (in both sites) levels.

The Hixbar mining site in Sta. Barbara has been abandoned in 1976 and yet evidence of AMD effects still remains. Bigger effects are expected from Lafayette mining due to the sheer volume of waste rocks and mine tailings that will be generated and the physical environment of the mining site. Lafayette mining is expected to generate 10 million cubic meters of acid-forming waste rocks and 5 million tons of sulfide-bearing tailings.

In its EIS, Lafayette aims to contain potential AMD by encapsulating waste rock in impervious material within the waste dump and sub-aqueous placement (at below 2 meters of water) of tailings in the tailings dam to prevent exposure to oxygen. The October 11 and October 311, 2005 mine spills, however, prove that the safety measures do not necessarily work as designed. Firstly, Rapu Rapu belongs to the Type II Climate where rainfall patterns are more pronounced than dry spells and where the Northeast Monsoon (Amihan) and Southwest Monsoon (Habagat) generally bring in heavy rainfall and winds. Weather data indicates that Albay Province is hit by an average of four (4) cyclones every year. During Habagat, the wind moves to the Laganoy Gulf and during the northeast monsoon (locally known as Amihan), the winds move southward of Rapu Rapu towards Sorsogon. Secondly, there is no assurance that Lafayette has really put in place adequate safety measures. Again, the so-called "controlled discharge" causing the mine spill on October 31, 2005 was due to the impact of heavy rainfall on an inadequate safety design.

Regis et. al. (2001) argue that the impact of AMD on Rapu Rapu and outlying areas would be greater, more widespread and long lasting than the toxic effects of cyanide. The unleashing of heavy metals (due to AMD) would cause death to living organisms and destroy the productivity of aquatic and terrestrial plants.

These effects will reverberate along the food chain that would ultimately affect the human species. Regis et al.(2001;58-59) studied several biological indicators at the ecosystems and species level and found evidence of reduction in species, high pollen grain abortion of a test organism (using the weed *Stachytarpheta jamaicensis*).[66] High pollen grain abortion suggests reduction of productivity of many plants including those that may be economically useful to humans.

g) Potential Chemical Contamination

The mining industry is one of the biggest contributors of toxic chemical waste. In the United States, the metal mining industry accounts for 45 percent of the country's total toxic chemicals compared to the chemical industry which contributes only 9.5 percent.[67] As of 2001, twenty chemicals account for 86 percent of releases. These include 1 billion pounds of copper compounds, 960 million of zinc compounds and 422 million pounds of lead and lead compounds.[68] Lafayette mining in Rapu Rapu involves copper, zinc, gold and silver. The flotation circuit (to derive copper and zinc concentrates) and the Carbon-in-Leach circuit (to derive gold) of mineral processing involve extensive use of chemicals.

The Woodward-Clyde EIA/EIS shows that Lafayette uses **sodium cyanide** to depress zinc and recover gold during the Carbon-in-Leach (CIL) circuit, **hydrogen peroxide** and **sulfuric acid** to destroy cyanide, **cupric sulfate** for the flotation circuit, **zinc sulfate** as modifier for the flotation circuit, **hydrated lime** for pH conditioning in the processing circuits. In addition, the flotation circuits also use **Aerophine 3418A, Sodium Ethyl Xanthate** and **Copper Sulphate**.

The chemical with the most immediate and lethal effect is sodium cyanide since it is poisonous. Long term and extensive effects, however, will be derived from sulfuric acid which, through AMD, will unleash heavy metal contamination.

Although safety designs are expected to be secure in the flotation circuit in order to protect mine personnel, the risks to the population and the physical environment would likely occur in the following high risk areas:

- Tailings from the flotation circuit will contain residual cyanide. When contained in the tailings pond, they can pose hazard to wildlife and during mine spills they can contaminate surface or ground water producing such effects as fish kills.
- There will be risks during shipment of chemicals through the port of Albay, unloading at the port of Malobago and transport from the Malobago port up to the storage bays at the mining facility. The risk factors during shipping will include quality of packaging and seaworthiness of the vessels. At the unloading stage, the risk factors will include quality of port facilities, cranage and other lifting gear and design of the laydown areas. During transport, the risk factors will include type of hauling vehicles and handling.
- Storage is also a risk area and the problem would be how to maintain the dryness of the storage bay to prevent leakage.
- Another risk area would be the mixing and distribution of the chemicals to the flotation and CIL circuits.

At the end of the life of mine, currently estimated at 5-7 years, Lafayette shall have left a toxic legacy in the towering uplands of Pagcolbon, Malobago and Binosawan – in the tailings ponds, event pond, waste rock dump, open pit and silt traps and gabions in the upstream of creeks and rivers. As yet, there is no law, not even the Mining Act of 1995 – that requires mining companies to clean up veritable toxic sites after they leave. In the absence of such legal protection, the affected communities and local government units will have to bear the cost of the effects of toxic waste.

h) Damage to Marine and Riverine Habitats

The geological map of Rapu Rapu indicates an extensive coral reef system in the Albay Gulf (on the south), Lagonoy Gulf (on the north), Cagraray Pass (on the west), Rapu Rapu Strait (separating Rapu Rapu Island from Batan Island) and the Pacific side of Rapu Rapu towards the east. Batan Island is almost fully surrounded with coral reefs. Rapu Rapu Island is also surrounded with coral reefs except on the Poblacion-Carogcog-Sta. Barbara-Malobago stretch.

Results of the EIA conducted by Woodward-Clyde indicate that there is only 24% live coral cover near the port of Malobago. Based on this finding, Lafayette argues that its mining operations will have minimal adverse effects on corals except for localized effects at short durations.

Effects to the marine habitats cannot be downplayed by saying that the risk factors will emerge only during port operations in Malobago. The adverse effects will have an impact on the wider physical environment and are likely to occur owing to the following inter-linked causes:

- Mining construction and continuing extraction at the open pit exacerbates soil erosion which, in turn, increases water turbidity. The same turbidity will reduce light for photosynthesis and movement of marine life. It must be noted that corals are very susceptible to turbidity.
- Sediments (from mine tailings and eroded soil) are bound to accumulate on the benthic fauna of water bodies. Given the Type II climate of Rapu Rapu, the sediments will certainly be transported offshore. Damage to benthic fauna will disturb the food chain in the marine environment.
- Acidity (from sulfuric acid) and toxicity from chemicals, oil (from shipping vessels), reagents and wastes will impair aquatic life.

The three direct impact barangays (of Pagcolbon, Malobago and Binosawan) have seven (7) catchment areas and seven (7) natural drainage systems (rivers and creeks). The elevated locations of the open pit, waste rock dump and tailings pond make these drainage systems vulnerable to spills. Lafayette's safety design involves establishment of silt traps and gabions along these drainage systems. Aimed at preventing spillage to the marine waters, these drainage systems serve as the second line of defense and are thus considered sacrificial areas. Moreover, their defense value will depend on the maintenance and effectiveness of the silt traps and gabions. While these may be maintained during the project term, there is no guarantee that these will be maintained thereafter.

AMD is already a prevailing environmental disaster in Rapu Rapu that has been exacerbated by Lafayette mining. There is no more aquatic life in three out of four creeks of Sta. Barbara, the former Hixbar Mining site (Regis et al. 2001).

i) Loss of Biodiversity and Habitat

Regis et al. (2001) found evidence of decrease in plant and animal diversity in Pagcolbon (Lafayette mining site) and Sta. Barbara (Hixbar mining site). Using the sturdy common weed, *Stachytarpheta jamaicensis* (L.) Vahl, Regis et al. proved that heavy metals inflict damage on plant life by pollen grain abortion. Destruction of the plant life necessarily affects animal life, thus disturbing biodiversity and habitat.

Lafayette argues that the mining site has already been denuded and, therefore, there is very little biodiversity to speak of. The truism of the argument all the more emphasizes the imperative of restoring the habitat because this is the only chance of restoring biodiversity in the area.

Effects on the Local Economy

Lafayette seems to have a very strong persuasion on the GMA administration not to mention that the Australian Embassy has added to the call for the lifting of its suspension.[69] Its polymetallic project in Rapu Rapu is being billed as the flagship of the country's revived mining industry and is listed as one of 24 priority large scale mining projects of the government. Secondly, the Lafayette project site is, so far, the only mining site declared by the government as a Special Economic Zone. Thirdly, despite the adverse recommendations of the Rapu Rapu Fact Finding Commission, the government has not wavered on its support for the Lafayette project.[70]

Indeed, the financial figures are very attractive: US$ 42 million in investments, US $246 million in potential revenues and US $4.2 million in annual excise taxes in favor of the government. Topping the attraction is the potential of economic spillovers to the local economy of Rapu Rapu in terms of local taxes, employment generation, increased circulation of money and a social development program to buttress the inadequate social services of the local government. As of November 2005, Lafayette had already spent $45 million developing the mine.[71]

Lafayette's message to the local government and people of Rapu Rapu is also very clear[72]:

Twenty-six species of commercial fish are present in the fishing grounds around Rapu-Rapu Island. ©Greenpeace/Lester Ledesma

- Rapu Rapu is a 4th Class municipality and the local government has very limited budget and resources.
- The people are very poor with families earning average incomes of only PhP45,000 per year.
- Rapu Rapu Island's ecosystem is already damaged; the forests are denuded and the coral reefs have been destroyed by illegal fishing. Therefore, the people have little means of generating income.
- But, the island has plenty of mineral resources.
- Therefore, external intervention is necessary and this intervention can be provided by Lafayette.
- This intervention will create conditions for resting the marine environment as fishers would be drawn away from their traditional livelihoods.

Lafayette's vision for Rapu Rapu is "a mining community that is empowered and with a capacity to chart its own destiny" and its mission is "to have a mining community that is self-reliant, pro-people, investor-friendly, pro-environment and committed to sustainable development."[73] If Lafayette were not known to be a for-profit mining company, its vision and mission statements for Rapu Rapu would have led people to believe that it is a social development institution dedicated to uplift the people of Rapu Rapu from poverty.

However, it would be best to look at the evidence:

- **Tax Income**: Lafayette began mining exploration in 1998, commenced construction of the mining site facilities in 2004 and began gold production in 2005. In its EIS, Lafayette estimates that national taxes, real property tax and business tax would amount to PhP930 million during the project period. But records show that the revenue generating capacity of the Rapu Rapu LGU has

not improved due to mining. This phenomenon is attributable to the fact that Lafayette availed of tax incentives (as a special economic zone under Proclamation 625) as soon as it commenced construction of the mining facilities. Table 7 indicates that there is no significant change in the income capacity of the Rapu Rapu LGU that may be attributed to Lafayette presence in the island.

With the declaration of Lafayette's mining site as an ECOZONE, the Rapu Rapu LGU can no longer enjoy its forty (40) percent share of the mining tax under Section 290 of the Local Government Code. Rather, it will get a two (2) percent share of gross income while another three (3) percent shall be directly remitted to the national government.[74]

Table 6. Rapu Rape Municipal LGU Income, 1996-2005

Year	Income (PHP)	Expenditures (PHP)	Lafayette Non-Factor
1996	11,693,544.53	11,895,336.82	Lafayette Mining Ltd. registered in the Australian Stock Exchange
1997	14,697,389.30	14,994,276.25	Lafayette applied with MGB to explore 1,719 hectares.
1998	16,090,368.51	16,026,650.23	Lafayette exploration in Rapu Rapu; spent US $ 3.8 million (Woodward-Clyde 2000; 1-5)
1999	19,842,835.84	17,527,145.28	
2000	24,067,570.15	22,486,497.33	
2001	24,798,028.90	22,405,945.88	Rapu Rapu Processing Inc. registered with the SEC
2002	-no data-	-no data-	
2003	-no data-	-no data-	
2004	-no data-	-no data-	Lafayette commenced construction of mining facilities
2005 (estimated)	24,943,552.00	24,943,552.00	Lafayette commenced gold processing operations

Source: Rapu Rapu Socio Economic and Physical Profile, 2002; LGU Accomplishment Report, 2005

- **Employment**: Lafayette projects undertaken from 2000 to 2005 have mobilized a workforce of 948 persons. However, only 32% of the workforce comes from Rapu Rapu and most of these are mainly from the direct impact barangays of Malobago, Pagcolbon and Binosawan.[75] Against promises, there is no clear skills training program that would allow the local labor force to compete in high-paying skilled jobs. This phenomenon negates the spillover effects argument as incomes generated from local employment do not significantly increase demand for local goods and services. A contractual worker employed by RRMI (whose contract is renewable every six (6) months receives PHP 5,400/month.[76] Highly skilled staff would receive higher salaries. And engineer, for example, would receive PhP13,000 (before tax) per month.[77]

- **Community development projects**: From 2000 to 2005, Lafayette spent a total of PhP8.9 million for local infrastructure development (PhP6.2 million), livelihoods (PhP128,944), health and sanitation (PhP1.7 million), education (PhP705,100), capability building (PhP114,365) and socio-cultural activities (PhP40,000).[78] This social development spending pattern represents an average of PhP1.8 million per year. Hardly does this support its argument that the Rapu Rapu does not have enough capacity to provide social and economic development services. In fact, in 2005 alone, the Rapu Rapu LGU spent PhP5.7 million in economic development support funding.

- **Economic Spillovers**. There are no indications of increased demand and supply of local goods and services in Rapu Rapu. The mining facility is a self-contained facility where goods and services are supplied from the outside through contractors and suppliers. The company uses its own vessels to ferry supplies and personnel. Regular employees are housed and fed inside the mining facility. The only avenue for economic spillovers is through local employment from where effective demand (for local goods and services) may be generated. However, Lafayette has mobilized only 305 local workers (of 948) for its 2000-2005 projects.[79]

- **Direct Economic Assistance**. Lafayette's direct assistance programs appear significant when viewed from the aggregate dimension of funding. Moreover, direct assistance programs signify income transfers that are supposed to pump prime productive activities. However,

pump priming requires a critical mass to achieve a tipping point from which transformation can occur. Otherwise, everything can be lip service and pro forma. Looking at some of the evidence, we find the following:

a) **Piggery project for Malobago and Pagcolbon**: PhP75,000 for 20 beneficiaries.[80] This represents a per capita spending of PhP3,750. Most of the projects are of the backyard type with no clear projection for reaching economies of scale. The project would have greater chances of success if it was connected to an arrangement by which communities would supply the pork meat needs of Lafayette.

b) **Beauty Parlor project for Malobago and Pagcolbon**: PhP30,000 for 26 beneficiaries.[81] This represents a per capita spending of PhP1,153. It is not clear whether this project is a poverty-alleviating measure or just a means of keeping some jobless locals busy. It is also not clear why 26 new beauticians would be needed in the two barangays where the working age population would be around 273 persons (as of 2000).

c) **Soap making project for 3 barangays**: PhP12,000 for 56 beneficiaries.[82] This represents a per capita spending pattern of PhP214. It is not clear how this project was even conceived when available evidence shows that small scale soap making projects are not financially viable. Soap making is a highly developed industry where economies of scale have reduced the prices of soap, from bathing to laundry soaps. Lafayette should have calculated the opportunity cost of mobilizing 56 people for a PhP12,000 project that has little chance of generating incomes that can compensate the value of time and effort spent on the project not to mention the raw material and transaction costs for acquiring caustic soda elsewhere.

d) **Handicraft (hammock making) project**: PhP2,000 for one beneficiary. In a number of barangays outside the mining site, communities use the indigenous Caragomoy as raw material for handicrafts. There are 102 hectares of land planted with Caragomoy in the whole municipality.[83] If Lafayette were interested in pump priming alternative livelihoods using local raw materials, it should have invested in Caragomoy-producing communities with projects designed for economies of scale. Major growers are Barangays Carogcog (10 hectares), Gaba (15 hectares), Galicia (18 hectares), Mancao (20 hectares) and Villahermosa (15 hectares).

Overall, spillovers to the local economy will be very limited. Lafayette is sheltered by Proclamation 625 and the overall tax-related provisions of the Mining Act of 1995. Furthermore, the ECOZONE is a self-contained special territory where tax incentives rather than wealth sharing operate. If ever, wealth sharing would be at the macro or national level. What the Mines and Geosciences Bureau originally estimated at US $ 4.2 million in annual excise taxes may no longer see reality. The only opportunities for spillovers are the social development programs and labor hiring. However, Lafayette gives priority only to the direct impact barangays and the indirect impact barangays (Woodward-Clyde 2000; 4-27).

Fishing is the main source of livelihood for residents of Binosawan town in the Pacific side of Rapu Rapu Island which witnessed the fishkill in October 2005. Continued mine operations threaten their fishing grounds.
©Greenpeace/Lester Ledesma

In contrast, the current and future losses to the people of Rapu Rapu and outlying areas would far outweigh the benefits of the mining project. The losses do not only pertain to the immediate after-effects of the environmental damage but also to the future social costs that will be incurred due to diminution of natural assets necessary for livelihoods and potential psycho-social stresses and health costs. The October 11 and October 31, 2005 mine spills have already disturbed the traditional harmony between and among local government units and officials and between and among communities. Although the subsequent and various studies conducted seem to present conflicting findings short of any definitive conclusion, the psycho-social stresses have impacted on the behavior of producers and consumers.

What does the future hold for Rapu Rapu?

Looking at the flow of events after the conclusion of work of the Rapu Rapu Fact Finding Commission, there is a strong likelihood that Lafayette will resume operations. It, then, has the option of optimizing the 25-year validity of its mineral production and processing permits or simply completing the 5 to 7-year expected mine life of 150-hectare area currently being developed. Assuming a 5 to 7-year project term for the 150-hectare site, the following benefit scenarios are possible:

- **Local Government Revenues**. There is likelihood that Lafayette will offer financial incentives to the LGU if only to soften local government opposition to the project. In a news report, corporate lawyer Bayani Agabin insinuated that Lafayette might give to the LGU one half of the value of the tax exemption despite the ECOZONE status of the mining project.[84] Data from the Bureau of Internal Revenue (BIR) gathered by the RRFFC shows that in 2005, Lafayette (i.e. its subsidiaries RRMI and RRPI) exported US $2.44 million worth of ore for which it paid PhP 2.06 million (around US $40,000 at the current exchange rate) in excise taxes.

  Further assuming that the LGU will get a 40 percent share of excise tax (based on Section 290 of the Local Government Code), Rapu Rapu would generate an additional annual income of PhP826,204. In seven years, it would generate a total of PhP5.78 million. The question to be asked is whether this additional revenue will compensate for the permanent loss of the minerals and cover the cost of whatever possible environmental, economic and health expenses to the municipality? In 2005, the Rapu Rapu LGU was already earning PhP2.5 million in tax revenues and other incomes (apart from the IRA) or more than twice the expected revenue from Lafayette.

- **Labor Incomes from Mining.** Assuming that Lafayette will maintain the 30 percent local component in labor employment, it can be estimated that around 300 members of the local labor force will earn PhP6,000 per month (based on prevailing monthly wages for contractual workers). This also means that one (1) percent of the island population will have stable incomes for seven years with a per capita annual earning of PhP72,000 or a total of PhP504,000 in seven years. On the aggregate, this represents an income transfer of PhP151.2 million or PhP21.6 million per year. With good household financial management, PhP6,000 per month will provide relative stability to a household and has the chance of producing at least one college graduate per household or a total of 300 new college graduates over the next 6 years.

- **Income transfers from the Lafayette Social Development Program.** Based on Lafayette's 2000-2005 spending pattern for social development, income transfers through various projects would be around PhP1.8 million per year or PhP10.8 million for the remaining six (6) years. With a municipal population of 29,170 (as of 2000), the theoretical per capita benefit would be around PhP61.7 per year or PhP5 per month. This is on the assumption that the social development program delivers public goods accessible to all members of the local society. However, if Lafayette maintains the approach of focusing on the three direct impact barangays with a population of 1,000 persons, the real per capita benefit would be PhP1,800 per year or PhP150 per month. But this means that for seven years, 1,000 persons would be PhP150 better off every month than 28,000 other neighbors.

Will the benefits outweigh the social costs and will the income transfers from Lafayette lend significance to the Rapu Rapu local economy?

Extrapolating presently available data shows that the total expected financial benefits to Rapu Rapu over seven years would be around PhP176.6 million (PhP5.78 million in LGU revenue shares, PhP151.2 million in labor incomes, PhP10.8

million in social development funds for the next six years and PhP8.9 million already spent in 2000-2005). This represents a total theoretical per capita benefit of PhP6,092 or PhP2 per day for hosting and allowing Lafayette to exploit 150 hectares of land.

Using Uphoff's (1995) argument, do we find a positive-sum, zero-sum or negative-sum? Looking at the possible cost-and-loss scenario for the whole municipality, Rapu Rapu's life after Lafayette would straddle between a zero-sum and a negative-sum, i.e. either Lafayette earns at the expense of the island population and environment or that the aggregate losses due to mining would outweigh the economic gains.

- Inferring from the total expected financial benefits from mining and its theoretical per capita distribution of PhP2 per day, there is hardly any room for reinvestments and pump priming other economic sectors such as fisheries, agriculture and small scale enterprises even if Lafayette were to double the income transfers. Secondly, the export-orientation of the mining project has little room for subsidiary economic activities. At best, the 300 better off individuals earning regular labor income can make re-investments for child education so that when they are seven years older, 300 other members of their households would have attained college education.

- 150 hectares of land would be laid to waste lending them useless to agriculture. This also means that sulfide-bearing rocks in 150 hectares of land will be exposed to air and water exacerbating AMD in the island. The overall effect would be degradation of natural resources that, in turn, would deny livelihoods to the other members of the community.

- Based on mining feasibility, 4.93 million MT of ore shall have been extracted. Findings of RRFFC indicate that Lafayette extracted 136,180 MT of gold ore in 2005. At this rate, Lafayette will have extracted 952,000 MT of gold ore in 7 years. In addition, it shall have processed 420,000 MT of copper and zinc concentrates in 7 years. Financially, the government gains 2 percent of the export values while Lafayette retains 98 percent. Taking off managerial, financial, technical, human resource and transaction costs, Lafayette would still be better off than the resource owner who would permanently lose the resource.

- The surface water hydrology of seven (7) catchments covering 1,297 hectares and seven (7) creeks and rivers covering 15.1 kilometers shall have been altered, contaminated with heavy metals due to AMD or silted and contaminated with toxic chemicals due to mine spills causing damage to animal and plant life. Correspondingly, the biodiversity and ecological balance of these areas shall have been lost.

- There will be an annual and increasing risk and threat to the marine ecosystem as mining operations progress and expand. The inadequate safety design causing the two mine spills in October 2005 was placed against a risk scenario during barely four months of gold processing operations. Continuing extraction and processing operations will geometrically increase the mine waste and tailings. The tailings dams are expected to cater to 5 million MT of tailings (Woodward-Clyde 2000; 1-11). Combined with the annual heavy rains, these will put pressure on safety designs that are based on flat terrains. This is not to mention that the expected improvement of the dam height is still 55 meters short of the DENR-approved design (RRFFC 2005; 5). In case of disasters, the tailings fee of PhP5 million (calculated at PhP0.05 per MT as prescribed in Section 190 of the IRR) will not be enough to cover damages to lives and personal safety, lands, crops, marine life and aquatic resources and re-vegetation and rehabilitation of damaged farms and coastal zones. The Sorsogon LGU alone spent PhP10 million in emergency assistance for fishing families affected by the fish scare resulting from the October mine spills.

- Sedimentation and toxic contamination of the marine waters of the Albay Gulf and Lagonoy Gulf will affect 1,300 fishing households (based on current number of fishing boats) in Rapu Rapu and another 3,100 fishing households in the coastal municipalities of Gubat, Bacon and Prieto Diaz in Sorsogon. These effects represent losses in family income and local government revenues from the fishing industry not to mention revenue losses in subsidiary economic activities. In a related manner, a new cost center will emerge – the cost of coastal clean up which, under the terms of reference of the mining permits, has

not been included in the environmental protection and enhancement program (EPEP). In addition, Lafayette will leave behind a veritable toxic site (tailings pond, events pond, open pit, gabions and silt traps) where the cost of clean up is not required in the Mining Act of 1995 and its IRR.

- For the next six years, Pagcolbon, Malobago and Binosawan will experience a shift in their way of life due to focused infusion of capital from Lafayette and direct access to spillovers such as labor incomes. Spending patterns will change with greater circulation of money. Failure to make reinvestments (such as spending for housing, child education, enterprises or agriculture) will make life difficult once Lafayette is gone. This early, Pagcolbon residents are already coping with the dislocation and possible disintegration of the community. While they would still be better off than the rest of the community for seven years, they might end up worse off than the rest when Lafayette is gone.

- Rapu Rapu will incur an opportunity cost in ecotourism. Although the municipal government and local communities do not yet derive incomes and revenues from tourism, fourteen (14) potential ecotourism sites have been identified and capital infusion would create revenue and income opportunities. Most certainly, Pagcolbon, Malobago, Sta. Barbara and Binosawan will forego potential revenues and incomes from the would-be ecotourism sites (such as caves, waterfalls and scenic seascapes). Another mine spill similar to October 11 or October 31, 2005 would exacerbate the opportunity costs.

The status of the local economy of Rapu Rapu and outlying areas is not only defined by monetary income and the need for employment and livelihoods. It is also defined by socio-cultural harmony and co-existence with nature. Sudden shifts, such as Lafayette mining, that create uncertainties are more harmful than what the people presently have despite the prevalence of poverty. There has to be a way of alleviating poverty without incalculable risks to traditional sources of livelihoods.

Effects on Social Relations

Rapu Rapu is a very peaceful municipality. In fact, the municipal detention center is almost always empty.[85] However, there are indications of growing social tensions evidenced by the following causes and effects:

- Lafayette offered to give priority to Rapu Rapu in labor hiring. However, to date, local hiring represents only around 30 percent of total. The entry of migrant labor, mostly skilled and higher paid, will be expressed in differential income capacity and consumption habits. This differential capacity will be further translated into other behavioral factors such as relations of the sexes (either in courtship or the possible emergence of the sex trade). In fact, the Municipal LGU has already acted on some reports of STD cases in the direct impact barangays.[86]

- Differential access to labor opportunities has also caused tensions between the working-age populations of the direct impact barangays and those in the Poblacion and other barangays. This is exacerbated by Lafayette's preference for the direct impact barangays in terms of labor hiring. Understandably, Lafayette aims to thicken political and social support for the mining site. This objective is emphasized by subsidies for the security complement of the direct impact barangays.

- Lafayette's acquisition of land rights in privately-owned lands has caused displacement. In the process, there has been tension between those who were immediately tempted to sell off their lands (at PhP150,000 per hectare) and those who initially resisted for fear of losing their sources of food and income. The tensions are exacerbated by the actuations of Lafayette's armed guards who immediately established guard houses and perimeter defenses to bar entry to newly-acquired lands.[87]

- There has been tension between people employed by Lafayette and those who miss the opportunity. These tensions are channeled through text messages.

- There is also tension between movers and beneficiaries of the Binosawan Micro Hydro Electric Project and Lafayette security personnel especially that the micro hydro facility is located upstream near the Lafayette mining site. The maintenance officer of the micro hydro power plant has been receiving death threats through text messages.[88] The same person has recently lost a cousin who was kidnapped, tortured and eventually died.[89] The incident was not

reported to the police and no one could understand why it happened.

- There is also tension between officers of the social development program of Lafayette and the local Catholic Church. The priests refuse to say mass in the chapels built by Lafayette.[90] This tension radiates to the parishioners who are torn between allegiance to their religion and religious leaders and the desire to seize economic opportunities from Lafayette.

Human Rights

The social tensions are accompanied by human rights violations, the extent of which is not yet determined. Moreover, there is a possibility that these violations will increase and will become more serious in the future. In a soon-to-be released study by the United Nations, it is argued that extractive industries like oil, gas and mining account for most allegations of worst human rights abuses.[91] Anecdotal evidence indicates incidences of abuses by Lafayette's armed guards especially during acquisition of land rights. There are also indications of disregard for human health and safety evidenced by the conscious discharges of toxic waste during the October 11 and 31, 2005 mine spills. While Lafayette may have enforced its internal accountability system and have enforced some form of penalty through a revamp of the managerial structure, the persons responsible are still accountable for the actual damages incurred on the environment and the public.

Moreover, the Rapu Rapu Fact Finding Commission took note of the flaws in the EIA process where Sorsogon stakeholders and certain groups critical to Lafayette were excluded in the public hearing. This flaw represents a violation of the people's right to be informed and be heard. Finally, there is a need to monitor compliance to Philippine labor laws.

Effects on Governance

The Rapu Rapu Polymetallic Project is a national priority project in the mining sector. It comes at a time when the government is proposing mining as the next big hope to generate investments, employment, revenues and reduce the budget deficit. Understandably, the central government would flex its muscle if only to make the project happen and persuade other foreign investors to come. Since 1998, when Lafayette began its exploration, there tended to be a sequence of policy decisions favoring not only Lafayette but, in terms of precedence, all other foreign mining investors. Correspondingly, these decisions tend to contradict the very promises of high financial gains for the central government and for local governments and local economies in terms of taxes and employment generation. Conflicts naturally emerge when policy trends tend to contradict, if not, disregard original commitments and promises of benefits.

The Lafayette mining project in Rapu Rapu represents conflicts between local governments and mining companies and conflicts between national governments and local governments. Fiscal problems underlie these conflicts; conversely, revenue potentials tend to serve as incentive in arriving at compromises. The Lafayette case, however, has reached a level where boundaries have been clearly marked and the persuasion of the national government is to pursue its mining agenda while the expectations of the Rapu Rapu local government have been sidelined.

The barangay governments in the mining site are easy prey due to meager financial resources from the IRA. They can be easily tempted to cede responsibility of providing services to its citizens to Lafayette. Not only that, they get to take direct participation in labor generation, management and distribution of social development funds. As well, barangay government leaders can benefit from small-scale contracts and commissions in the acquisition of land rights.

It is for the above reason that there is tension between the Rapu Rapu Municipal LGU and the Barangay LGUs of the direct impact barangays. While the latter have given all out support for Lafayette since the start of the exploration period through the present despite the mine spills in October 2005, the Municipal LGU has shifted its position from that of support for the project to that of rejection (see Table 7 for the chronology of Sangguniang Bayan Resolutions).

Table 7. Rapu Rapu SB Resolutions Related to Lafayette Mining

No.	Title	Date of SB Adoption	Action Taken
150-2003	Resolution approving the Rapu Rapu Polymetallic Project and endorsing the RRMI application for ECOZONE status of Brgys. Malobago, Binosawan and Pagcolbon	October 31, 2003, 90th Regular Session	Not signed by Mayor
068-2005	Resolution declaring null and void Resolution No. 150-2003	January 5, 2005, 19th Regular Session	Not signed by Mayor; returned to SB
103-2005	Resolution requesting the Secretary of Justice to investigate the approval of the Rapu Rapu ECOZONE	May 4, 2005, 33rd Regular Session	Not returned to SB
104-2005	Resolution creating a Mining and Rapu Rapu ECOZONE Special Committee	May 4, 2005, 33rd Regular Session	Pending at Vice-Mayor's Office
136-2005	Resolution requesting the Municipal Mayor to designate knowledgeable personnel to monitor and determine the actual production of the mining companies in Batan Island and Rapu Rapu Minerals Inc at Brgy. Pagcolbon	August 23, 2003, 48th Regular Session	Pending at the Mayor's Office
150-2005	Resolution requesting RRMI to assist the LGU in constructing an access road to the Municipal Garbage Dump Site at Sitio Lagsingan.	October 4, 2005, 52nd Regular Session	Approved October 18, 2005
165-2005	Resolution praying for the revocation of Proclamation 625 and cancellation of the Lafayette ECC	October 18, 2005, 54th Regular Session	Approved November 21, 2005
182-2005	Resolution appealing to all residents of Rapu Rapu to support the SB's campaign for revocation of Proclamation 625 and cancellation of the Lafayette ECC	November 22,2005	
183-2005	Resolution appealing to all Municipal and City Councils of Bicol to support the Rapu Rapu SB's campaign for the revocation of Proclamation 625	November 22,2005, 57th Regular Session	Approved December 7, 2005
192-2005	Resolution requesting the Department of Energy to inform the Rapu Rapu SB on its share from coal mining taxes	December 6, 2005, 59th Regular Session	Approved December 20, 2005

There is no apparent tension between the Rapu Rapu Municipal LGU and the Albay Provincial LGU in terms of political positioning. Besides, the Provincial LGU is not a direct party of interest in the mining project. It does not even feature in the tax income sharing arrangements. At best, it comes forward when there are complaints from citizens.[92] The Provincial Governor is an endorser of the mining project but the Sangguniang Panlalawigan (SP) has not yet made any formal endorsement through a resolution.

There is tension, however, between the Provincial LGUs of Albay and Sorsogon arising from their varying reactions to the October 11 and 31 mine spills. The League of Municipalities of Sorsogon and the Municipal LGUs of Prieto Diaz, Gubat and Bacon have declared their opposition to the Lafayette mining project. The issue is not about fiscal incentives coming from Lafayette. The issue is about threats to livelihoods and Lafayette conduct. The Sorsogon Provincial LGU and the Municipal LGUs of coastal communities facing Rapu Rapu in the Albay Gulf have not been consulted about the project. The mine spills of October 2005 broke the straw and induced the Sorsogon municipal LGUs to act. The Mayor of Prieto Diaz first raised the issue of possible mercury contamination followed by the Vice Governor who raised a fish scare on behalf of 5,000 fishers along the Albay Gulf.

A succession of scientific studies by the Bureau of Fisheries and Aquatic Resources (BFAR), two research institutes at UP-Diliman, one institute at UP-Manila and a field investigation of the Center for Environment Concerns (CEC) produced conflicting results that resulted in further tension between the Sorsogon and Albay Provincial LGUs. In reaction to the (mercury) fish scare, the Albay Vice Governor sought the help of the National Bureau of Investigation (NBI) to investigate

the people behind the mercury-contaminated fish samples. At the other end, the Governor of Sorsogon commissioned the UP-Manila Department of Pharmacology and Toxicology to conduct an independent study.

In the interim, tensions between the national government and local governments remain. Meanwhile, Lafayette has expanded its lobby work to include the Sorsogon LGU. There are indications that the Rapu Rapu Municipal LGU will become the focus of external pressure from Lafayette and from the national government in reaction to its opposition to Lafayette and having called for the revocation of Proclamation 625 and cancellation of the Lafayette ECC. The hearings conducted by the Rapu Rapu Fact Finding Commission appeared to be a sideshow in the guise of informing policy.

Essentially, the national government is not about to change its policy position. On the ground, it has the full support of the barangay LGUs in the mining site and the political support of the Provincial LGU of Albay. Under pressure, the Rapu Rapu LGU is likely to experience tension, disunity and turnarounds of certain elected officials. In Sorsogon, there is a variance between the position of the Provincial LGU and the Municipal LGUs. The latter, through a resolution (No. 07-2005) of the League of Municipalities of the province, have called for the closure of the mining operations and cancellation of the mining permit.

At least two local governments in the Philippines have autonomously flexed their muscles to oppose the national government's proposition on large scale mining: Mindoro and Marinduque. In February 2002, the Mindoro Provincial LGU issued an ordinance calling for a 25-year moratorium on large scale mining. On October 28, 2005, the 10th Regular Session of the Sangguniang Panlalawigan of the Province of Marinduque declared a 50-year moratorium on large scale mining.

Political muscle flexing in the case of Rapu Rapu demands a serious review of accountability and transparency. The Municipal LGU's call for the revocation of Proclamation 625 and cancellation of the ECC is rooted in a political scandal that involves certain elected officials and the PEZA and uncalled-for interference of Lafayette in policy making. An investigation is called for and the results should inform governance arrangements in mining.

Effects on Civil Society

There is a general anti-mining alignment of national and local NGOs, the Catholic Bishops Conference (CBCP) and local churches, alternative law groups (such as the 17-member Alternative Law Groups Inc.) and pro-environment personalities at the national and local levels. This alignment has been formed even before Lafayette's entry in Rapu Rapu. Some national organizations (such as LRC-KSK and ALG Inc.) have persistently gone to court to contest the constitutionality of the Mining Act of 1995.

At the Bicol regional level, there are two alliances formed against Lafayette mining: (a) the Bicol Alliance against Mining (BAAM). Formed on January 24, 2006, this alliance brings together 23 organizations of small fishers such as SALMON, NGOs (such as the Institute for Rural Development Foundation or IRDF and Coastal Core), academic institutions and social action centers (SAC) of the Catholic churches of Legazpi City and Sorsogon City; and, (b) the Alyansa Kontra Lafayette sa Sorsogon (AKLAS), an anti-mining alliance of left-leaning organizations such as Kalikasan-PNE, Center for Environment Concerns (CEC), Umalpas Ka-Bicol and Bayan. Some people's organizations (PO's) which form part of BAAM are also members of AKLAS. The alliance is, in fact, a broad alliance composed of the local business sector, church-based organizations and personalities, NGOs and some local government officials (including the current Municipal Mayor of Prieto Diaz).

The Rapu Rapu mine spills in October 2005 have induced the broadening of alliances against mining and against Lafayette. However, there is a distinct variation between the advocacy positions of civil society organizations and that of the local governments. The position of the former is anchored either on the general opposition against mining or against the Mining Act of 1995 while the latter is anchored on the conditional acceptance of mining if it proves to be 'responsible'.

Economic Effects on Outlying Areas

Fishers from Rapu Rapu share the Albay Gulf fishing grounds and portions of the Pacific waters with fishers from Prieto Diaz, Bacon and Gubat. Conversely, any marine-related disaster signifies common misfortune. The October 11 and October 31, 2005 mine spills were exactly the type of disaster that

affected all fishers in the area. While Lafayette decries the PhP150 million worth of monthly losses after the mine spills (due to the suspension of mineral processing), it has a built-in financial risk management mechanism where the risks are shared by its investors and creditors. Small fishers do not have such kind of risk-absorbing capacity.

The mine spills induced a fish scare in Sorsogon during the months of October 2005 to January 2006. Most affected was Prieto Diaz where the reported mercury-laden fish sample came from. The fish scare caused a sudden shift in fish markets exacerbated by psycho-social stressors among fishers and consumers. There was a sudden drop in demand for Sorsogon fishes and, correspondingly, fishers lost the incentive to produce.

Data from FGDs among fishers in Bacon, Gubat and Prieto Diaz indicate that the amount of monthly losses (due to lack of demand and/or decline in production) was around PhP373 million in the three municipalities (see Table 8). The estimates are apparently on the high production side with optimum participation of all fishers in the area. It also needs to be noted that there has been a noticeable decline in fish stocks not only due to the Hixbar-induced AMD and Lafayette mine spills but also because of unsustainable and illegal fishing practices (such as cyanide fishing).

Table 8. October-December 2006 Sorsogon Fish Scare: Estimated Amount of Monthly Losses (in PhP)

Type of Fishing	Municipality		
	Bacon	Prieto Diaz	Gubat
Palutang (for Blue Marlin)		180,000,000.00[93]	
3 Ply	16,500,000.00[94]	16,000,000.00[95]	
Banwit	33,000,000.00[96]		
Kalansisi	43,200,000.00[97]		
All types			85,000,000.00[98]
TOTAL	**92,700,000.00**	**196,000,000.00**	**85,000,000.00**

Source: Results from the FGDs in Bacon, Gubat and Prieto Diaz

The fish scare not only impacted on fish incomes of fishers but also on upstream, downstream and ancillary economic activities. These affected fish traders, processors, transporters, laborers, restaurants and food shops, tourism enterprises, fish vendors and even entertainment centers such as karaoke bars. Among fish-dependent households, the sudden dip in incomes caused temporary displacement of children from schools and out-migration of a number of working-age individuals.

The Sorsogon local government appropriately responded by providing emergency economic assistance (EEA) using its calamity fund. An estimated PhP5 million was allocated for displaced families and another PhP10 million was allocated for directly-affected fishing households. The disposition of the assistance, however, was not without anomalies. In Gubat, beneficiaries were given rice (2 kgs) and canned goods and were provided temporary employment (in coastal clean up) for 10 days at PhP 150 per day. The catch: beneficiaries were asked to sign two sheets of paper, one for being a beneficiary of the EEA and one for favoring Charter Change (CHACHA).[99]

Anecdotal accounts also indicate some health effects especially in Prieto Diaz. However, a subsequent investigation by the UP-Manila Department of Pharmacology and Toxicology did not find any direct relationship between the mine spills and the reported health problems.

PART SIX: CONCLUSIONS

Based on the above findings, the following conclusions can be drawn:

1. The declared economic benefits of large scale mining are more apparent than real. Evidence to this is derived from mining experiences elsewhere in the Philippines and other developing countries. Firstly, the externality factor – the cost of social supply and demand – far outweighs the results of the linear relationship of capital inputs and financial and economic outputs. Secondly, the fiscal and non-fiscal incentives provided for in the Mining Act of 1995 as well as other incentives that may be provided to foreign investors (e.g. ECOZONE status) tend to reduce the beneficial share of government and affected communities.

2. In the case of Lafayette mining in Rapu Rapu, the total financial benefits to the local government and the local economy during the expected life of mine is estimated at PhP176.68 million or a theoretical per capita benefit of PhP2 per day. This value is not sufficient to compensate for the permanent loss of resources, collateral effects on local livelihoods and threats to human life and safety. Moreover, these benefits do not leave margins for reinvestments in other economic sectors that could have provided the chance for accretion of productivity and values in other parts of the municipality.

3. The Rapu Rapu Polymetallic Project is an externally imposed project on a fragile island ecosystem jointly carried out by the national government and foreign investors. Local support for the project is derived mainly from the national government and the direct impact barangays (of Pagcolbon, Malobago and Binosawan) which would directly benefit (economically) from the project. Prior to granting of the ECC, no appropriate effort has been made to engage a wider range of stakeholders from within the municipality and outlying areas facing the Albay Gulf such as the Municipalities of Prieto Diaz, Bacon and Gubat (Sorsogon). In fact, only one (1) major public hearing was conducted and this hearing excluded Sorsogon stakeholders as well as certain groups known to be critical against mining and against Lafayette.

4. The policy architecture on mining is weak. Applied in the context of the present political and fiscal crisis, contestation as to the constitutionality of the Mining Act and defects in the relationship between the national government and national line agencies with local government units and local government agencies, this policy architecture is vulnerable to vested interest lobby. This architecture also tends to undermine the blooming of democratic participation in local governance.

5. Various studies on the effects of the October 11 and October 31, 2005 mine spills appear inconclusive and some are tainted with political biases. However, the spills themselves are indicative of serious risks and threats to people's lives, livelihoods and the environment and they mirror disastrous experiences elsewhere within and outside the Philippines. The disasters are indicative of the current and future difficulties of securing safety in mining designs and operations in hilly terrains and fragile ecosystems like Rapu Rapu Island. Likewise, they are indicative of a larger impact beyond the six (6) barangays identified in the EIA/EIS.

6. The Rapu Rapu physical environment has already been damaged by previous mining activities and by unsustainable economic practices. Existing literature indicates continuing damage in the old mining areas. For a fragile island with hilly terrain and limited space for agriculture and habitation, there is an urgent need to deal with the previous environmental damage before undertaking environmentally-risky economic endeavors such as mining.

7. The Rapu Rapu local economy is weak as evidenced by declining productivity in agriculture and fisheries combined with natural resource degradation. Mining revenues are not expected to provide spillover benefits to these sectors. There is a need for government to provide for investments in agriculture, fisheries and environment protection and conservation. The financial benefits from mining will not be enough for the investment needs of these sectors.

8. The October 11 and October 31, 2005 mine spills give a preview of the negative effects and potential impacts of mining on the natural environment, local economy, local governance and social relations. They also mirror similar negative effects elsewhere in the Philippines and in other mineral-dependent developing countries. With the likelihood that government will allow Lafayette to continue its mining operations, there is a need for concerted effort between government, civil society forces and the private sector to conserve and protect the remaining natural resources and to pump prime the other economic sectors of the municipality and outlying areas.

9. The series of scientific studies in the aftermath of the mine spills have shown evidence of toxic chemical waste and heavy metals. Despite the inconclusive results of major tests, they have caused negative economic effects and psycho-social stresses. This problem emphasizes the need for science to inform policy development processes.

10. The EIA conducted by Woodward-Clyde Philippines and an earlier study conducted by Regis et al. (2001) of the Ateneo de Naga Institute for Environmental Conservation and Research (INECAR) recognize the same potential negative effects on the Rapu Rapu physical environment and the surrounding marine waters. The difference is that while INECAR emphasizes the need to rehabilitate and protect Rapu Rapu and its environs, Woodward-Clyde gives primacy to Lafayette's capacity to mitigate, if not, prevent disasters. The INECAR study is supported by hard evidence and by similar studies elsewhere. Woodward-Clyde's prescriptions are supported mainly by Lafayette commitments, many of which have already failed during the first year of operations.

11. Societal forces have consistently argued against mining and the Mining Act of 1995 even before Lafayette established its presence in the Philippines. Major national, regional and local organizations have formed alliances that, in turn, have induced local business and government personalities to participate. The Rapu Rapu mine spills have provided an opportunity for convergence to argue not only against Lafayette mining in Rapu Rapu but also against the policy architecture established by the Mining Act of 1995 and the national Mineral Action Plan. There is a need, however, for civil society organizations to give direct attention to the other development needs of local communities in Rapu Rapu.

12. There are indications that human rights violations may have been committed. The extent of violations and veracity of the allegations, however, have yet to be determined. Certainly, there needs to be an accounting of the flaws pertaining to the public's right to know prior to commencement of operations and an accounting of who was responsible for the mine spills on October 11 and 31, 2005. Finally, there needs to be a review of the mode by which Lafayette acquired land rights in the direct impact barangays especially that these areas are covered by the Comprehensive Agrarian Reform Program.

REFERENCES

Books and Journals

Extracting Growth from Mining. (2005, November). *Policy Insights, Senate Economic Planning Office.*

Global Forest Resource Assessment 2005. Food and Agriculture Organization

Kydd, Andrew (2002). Formal Theory for Political Science. Lecture Notes. Harvard University.

Philippine Mining Industry. (2005, July) *Facts and Figures, Congressional Planning and Budget Department, House of Representatives*, No. 2.

Power, M. (2002). *Digging to Development?: A Historical Look at Mining and Economic Development.* Oxfam America.

Regis et al. (2001). Some Impacts of Mining on the Island Ecosystem of Rapu Rapu, Province of Albay. *Gibon: Ateneo de Naga University Journal*, *1* (1), 43-77.

Uphoff, Norman (1995), "Why NGOs are not a Third Sector: a Sectoral Analysis with some thoughts on Accountability, Sustainability and Evaluation," in Edwards, Michael & Hulme, David (1995), eds.. *Non-Governmental Organizations – Performance and Accountability: Beyond the Magic Bullet.* London: Earthscan Publications Ltd, pp. 17-30.

World Bank and International Finance Corporation. (2002). *Treasure or Trouble: Mining in Developing Countries.*

Newspaper Articles

Australia Miner in Philippine Cyanide Leak Probe. (2005, November 11). *Reuters News Service.*

Bordadora, N. (2006, February 10). Baptism of Fire: Reyes makes pitch for RP mining. *Philippine Daily Inquirer*.

Bromby, R. (2005, November 11). Lafayette cyanide spill probed. *The Australian.*

Cabacungan, G. (2006, May 21). Palace: No to mining ban. *Philippine Daily Inquirer*

Cabacungan, G. (2006, May 21). Palace: No to mining ban: Foreign owners to stay; industry still government's priority. *Philippine Daily Inquirer*.

Cabrera, Vincent. (2006, May 9). Mining museum to rise for Baguio centennial. *Philippine Daily Inquirer*.

Contreras, V., Cabacungan, G. & Rivera, B. (2006, May 23). Australian gov't defends Lafayette. *Philippine Daily Inquirer*.

Contreras, V., Cabacungan, G. Jr. & Rivera, B. (2006, May 23) Australian gov't defens Lafayette. *Philippine Daily Inquirer.*

Esguerra, C. & Gaylican, C. (2006, May 20). Mining probe body urges Lafayette license revoked. *Philippine Daily Inquirer*.

Felix, R. (2006, May 16). Lafayette Phils braces for foreclosure. *The Philippine STAR.*

Fernandez, E. (2006, May 8). MILF tells mining companies to leave its territories. *Philippine Daily Inquirer*.

Gore, Al. (2006, May 8). Jim Hansen: The Wisdom of a Climate Crusader. *Time*.

Jaimet, K. (2003, January 9). Placer Dome blamed in world-calibre disaster: Canadian mining giant says Phil government blocking clean up. *The Ottawa Citizen.*

Labalan, B. (2005, November 27). LPI water tests tagged misleading. *Philippine Daily Inquirer News Service*.

Labalan, B. (2006, April 29). Govt tags testimony on mercury as unethical. *Philippine Daily Inquirer*.

Labalan, B. (2006, April 30). UP Prof denies statement on heavy metals. *Philippine Daily Inquirer*

Lafayette Philippine assets may be seized by creditor due to delay of mine project. (2006, May 16). *Manila Bulletin.*

Makilan, A. (2005, November 20-26). Destroying Rapu Rapu through mining. *Bulatlat 5*(4).

Mine probers find heavy metals in villagers' bodies. (2006, April 27). *Philippine Daily Inquirer*.

Moro rebs not keen on letting in mining firms. (2006, May 9). *Philippine Daily Inquirer*.

Palangchao, H. (2003, May 8). MGB says tailings dams a hazard during downpour. *Sun Star*.

Pegg, J.R. (2003, June 30). EPA Says Toxic Releases, Wastes Declined in 2001. *Environmental News Service*.

Querubin, G. (2006, April 6). Missing, despising Marcopper. *Philippine Daily Inquirer.*

Rebs raid mining firm, burn gear. (2006, April 28). *Philippine Daily Inquirer*.

Requejo, R. (2006, February 14). SC upholds ruling vs Marcopper executives. *Manila Standard*.

Rivera, B. & Labalan, B. (2006, May 24). Rapu Rapu's local execs now want Lafayette to stay. *Philippine Daily Inquirer*

Rivera, B. & Labalan, B.Q. (2006, May 24). Rapu Rapu's local execs now want Lafayette to stay. *Philippine Daily Inquirer*.

Scientific studies on effect of Abra river pollution shown. (2005, August 25). *Philippine Sun Star*.

Tuazon, B. (2004, November 28 – December 4). Analysis – High Court is Courting Disaster. *Bulatlat*. *4*(43).

Ubac, M.L. (2006, February 9). More woes for Lafayette surfaces in House hearing. *Philippine Daily Inquirer*.

UP tests show no mercury in Sorsogon fish. (2006, March 12). *Philippine Daily Inquirer*.

Electronic Sources

Business World Online. December 20, 2004, http://www.bworld.com.ph

Fitzgerald, B. (2006, March 24). Lafayette Rearranges Rapu Rapu. *The Sunday Morning Herald.* http://www.smh.com.au

http://technology.infomine.com/TailingsMine/

World Resources Institute, Country Profile Philippines. http://earthtrends.wri.org/text/forests-grasslands-drylands/country profile-145.html

www.nbmg.unr.edu/comstockscience/minewastes4.shtml

Multi-media Presentations

Community Action Relations and Education (CARE Group): A Presentation of Cecille Calleja for visiting officers from the Philippine National Police (PNP) and Armed Forces of the Philippines (AFP) on May 1, 2005.

Defensor, M. (2005, March 9-10). *Investment Opportunities in the Mining Sector: A presentation of DENR Secretary Michael Defensor to the Philippine Investment Conference.* Shangrila Mactan Island Resort, Cebu City.

Processing and Metallurgy Department: A Presentation of Cheryl Faith Martin and Melvin Alonzo for visiting officers from the Philippine National Police (PNP) and Armed Forces of the Philippines (AFP) on May 1, 2005.

Legal Documents

DENR Administrative Order No. 96-40, Series of 1996 (Implementing Rules and Regulations of the Mining Act of 1995).

Environmental Compliance Certificate No. 0011-644-301C granted to Lafayette on July 12, 2001.

Republic Act No. 7942, An Act Instituting a New System of Mineral Resources Exploration, Development, Utilization and Conservation (otherwise known as the Mining Act of 1995).

Republic Act No. 7729, An Act Reducing the Excise Tax Rates on Metallic and Non-Metallic Minerals and Quarry Resources, Amending for the Purpose Section 151 (a) of the National Internal Revenue Code, as Amended.

Republic Act No. 7160, The Local Government Code of the Philippines.

Republic Act No. 7916 otherwise known as the Special Economic Zone Act of 1995.

Republic Act No. 8748 otherwise known as the Philippine Economic Zone Act of 1998 amending RA No. 7916 (Special Economic Zone Act of 1995).

Rapu Rapu LGU Documents

Accomplishment Report 2006, Municipality of Rapu Rapu, Province of Albay.

Socio-Economic and Physical Profile of Rapu Rapu (2nd ed.). (2002).

SB Resolution 068-2005. *Declaring Null and Void Resolution No. 150-2003.* January 5, 2005, 19th Regular Session.

SB Resolution 103-2005. *Requesting the Secretary of Justice to Investigate the Approval of the Rapu Rapu ECOZONE.* May 4, 2005, 33rd Regular Session.

SB Resolution 104-2005. *Creating a Mining and Rapu Rapu Ecozone Special Committee.* May 4, 2005, 33rd Regular Session.

SB Resolution 136-2005. *Requesting the Municipal Mayor to designate knowledgeable personnel to monitor and determine the actual production of the mining companies in Batan Island and Rapu Rapu Minerals Inc. at Brgy. Pagcolbon.* August 23, 2003, 48th Regular Session.

SB Resolution 150-2003. *Approving the Rapu Rapu Polymetallic Project and Endorsing the RRMI application for ECOZONE status of Brgys. Malobago, Binosawan and Pagcolbon.* October 31, 2003, 90th Regular Session.

SB Resolution 150-2005. *Requesting RRMI to assist the LGU in constructing an access road to the Municipal Garbage Dump Site at Sitio Lagsingan.* October 4, 2005, 52nd Regular Session.

SB Resolution 165-2005. *Praying for the revocation of Proclamation 625 and cancellation of the Lafayette ECC.* October 18, 2005, 54th Regular Session.

SB Resolution 182-2005. *Appealing to all residents of Rapu Rapu to support the SB's campaign for revocation of Proclamation 625 and cancellation of the Lafayette ECC.* November 22, 2005.

SB Resolution 183-2005. *Appealing to all Municipal and City Councils of Bicol to support the Rapu Rapu SB's campaign for the revocation of Proclamation 625.* November 22, 2005, 57th Regular Session.

SB Resolution 192-2005. *Requesting the Department of Energy to inform the Rapu Rapu SB on its share from coal mining taxes.* December 6, 2005, 59th Regular Session.

Sorsogon LGU Documents

Resolution No. 07-2005. *Urgently Requesting DENR Secretary Michael Defensor to Cause the Cancellation of the Mining Permit/Authority of Lafayette Philippines Inc. and Immediately Stop its Operation due to the Catastrophic Environmental Disaster it might Cause the People of Sorsogon.* League of Municipalities of the Philippines, Province of Sorsogon.

Resolution No. 12-2005. *Urgently Requesting Her Excellency President Gloria Macapagal-Arroyo, through Secretary Michael Defensor, Department of Environment and Natural Resources (DENR) to Immediately Order the Permanent Closure of the Mining Operations of Lafayette Polymetallics Mining Co. in Rapu Rapu, Albay.*

Resolution No. 120-05. *Strongly Opposing the Mining Activities Being Conducted by the Lafayette Mining Corp. in the Island Municipality of Rapu Rapu, Province of Albay*, Sangguniang Bayan of Prieto Diaz, November 21, 2005.

Other Documents

Rapu Rapu Fact-Finding Commission (2006). *Report on the Mining Operations in Rapu Rapu Island: Executive Summary.*

Institute for Environmental Conservation and Research (INECAR). (2006). *Position Paper Regarding Mining in Rapu Rapu: Closure of Lafayette Mine (rev. ed.).* Ateneo de Naga University, Naga City

Investment Liberalization, Republic Act (RA) 7942 (Mining Act of 1995) and its Impacts on Indigenous Peoples (IPs), Upland Communities and Rural Poor and on the Environment: The Case of Didipio, Kasibu, Nueva Vizcaya and Manicani Island in Eastern Samar. Citizens Assessment of Structural Adjustment (CASA) Philippine Thematic Workshop." (Undated Report)

The Social Development Programme of Lafayette Philippines Inc. (undated)

Pena, Rolando (undated). *Value-Adding in the Mineral Industry*. Department of Environment and Natural Resources.

Woodward-Clyde Philippines. (2000). *Environmental Impact Assessment/Environmental Impact Statement (EIA/EIS)*. Lafayette Philippines Inc.

End Notes

[1] Al Gore, "Jim Hansen: The Wisdom of a Climate Crusader," Time, May 8, 2006.
[2] In *Gibon*, Ateneo de Naga University Journal, Vol. 1, No. 1, 2001.
[3] Bordadora, N. "Baptism of fire: Reyes makes pitch for RP mining," Philippine Daily Inquirer, February 10, 2006.
[4] This is based on Forest Relief's homepage citing US Library of Congress Forestry article on the Philippines which states: "In addition to the officially sanctioned logging industry, there has been considerable illegal logging. The full extent of this activity was difficult to determine, but the discrepancy between Philippine and Japanese statistics on log exports from the Philippines to Japan provided one source of information. From 1955 through 1986, log imports from the Philippines, according to Japanese statistics, averaged about 50 percent more than log exports to Japan according to Philippine statistics."
[5] FAO, Global Forest Resource Assessment 2005.
[6] World Resources Institute, Country Profile Philippines, http://earthtrends.wri.org/text/forests-grasslands-drylands/country-profile-145.html
[7] Business World Online, December 30, 2004.
[8] Philippine Ambassador to Germany, Delia Albert, quoted by Vincent Cabrera in "Mining museum to rise for Baguio centennial," Philippine Daily Inquirer, May 9, 2006.
[9] "Core" site refers to the 42-hectare central area of the mining site where the offices and plant facilities are located.
[10] "Treasure or Trouble: Mining in Developing Countries," World Bank and International Finance Corporation, Washington D.C., 2002; cited in SEPO November 2005.
[11] Its IRR is contained in DENR Administrative Order 96-40, Series of 1996.
[12] Citizens Assessment of Structural Adjustment (CASA), Philippines Thematic Group Workshop (undated).
[13] There are two cellular towers (Globe and Smart) in the Poblacion and one in the mining site.
[14] Interview with a Binosawan villager, May 2, 2006.
[15] Rapu Rapu Socio Economic and Physical Profile, 2002, 2nd edition.
[16] Municipal Socio-Economic and Physical Profile, 2002.
[17] The Provincial Environment Code of the Province of Albay, Provincial Ordinance No. 2003-12, enacted on July 22,2003.
[18] Rapu Rapu Socio Economic and Physical Profile, 2002, 2nd edition.

[19] Ibid.,
[20] Rapu Rapu Annual Accomplishment Report, 2005.
[21] Ibid.,
[22] Interview with Atty. Rodel Botocabe, MISIBS Land Consultant, April 30, 2006, in Quezon City.
[23] This is estimated at around 40 hectares according to Atty. Rodel Botocabe, President of the Cagraray Environment and Development Foundation (during an interview conducted on April 30, 2006 in Quezon City).
[24] Other news accounts mention PhP10.7 million.
[25] Executive Summary, Rapu Rapu Polymetallic Project – Environmental Impact Statement.
[26] Querubin, G., "Missing, despising Marcopper," Philippine Daily Inquirer, April 6, 2006.
[27] Ibid.,
[28] Ubac, M. L. , "More woes for Lafayette surface in House hearing," Philippine Daily Inquirer, February 9, 2006.
[29] Ibid.,
[30] Ibid.,
[31] Ibid.,
[32] LPI BOD: Ian Culbert, Roderick Watt, Patrick Flint, Roderick Salazar III and Philip Fortun; RRMI BOD: Ian Culbert, Roderick Watt, Jose de Guzman, Roderick Salazar III, Philip Forun; RRPI BOD: Ian Culbert, Roderick Watt, Jose de Guzman, Philip Fortun and Roderick Salazar III.
[33] Interview with Richard Ecleo, Finance Officer of SAGIP Isla and Maintenance Officer of the Binosawan micro hydro power project, April 26, 2006; Juan Malavega, Rapu Rapu Municipal Fisheries Coordinator, April 30, 2006.
[34] As prescribed in the Lafayette Environmental Protection and Enhancement Program (EPEP) approved by the DENR in April 2002.
[35] News article written by Blanche Rivera, Philippine Daily Inquirer, November 6, 2005.
[36] Labalan, B., "LPI water tests tagged misleading", PDI News Service, November 27, 2005.
[37] "UP tests show no mercury in Sorsogon fish," Philippine Daily Inquirer, March 12, 2006.
[38] "Mine probers find heavy metals in villager's bodies," Philippine Daily Inquirer, April 27, 2006.
[39] Labalan, B., "Gov tags testimony on mercury as unethical," Philippine Daily Inquirer, April 29, 2006.
[40] Labalan, B., "UP prof denies statement on heavy metals," Philippine Daily Inquirer, April 30, 2006.
[41] Telephone interview with Vice Governor James Calisin, May 4, 2006.
[42] This classification is pursuant to Republic Act No. 7916 as amended by Republic Act No. 8748.
[43] Makilan, A.,"Destroying Rapu Rapu through mining," Bulatlat, Vol. V, No. 4, November 20-26, 2005.
[44] As indicated in the RRFFC Final Report (Executive Summary), SB Secretary Allan Asuncion filed an official complaint with the PEZA claiming that his signature was forged.
[45] Fitzgeral, B., "Lafayette Rearranges Rapu Rapu," The Sunday Morning Herald, March 24, 2006 (www.smh,com.au)
[46] Felix, R., "Lafayette Phils braces for foreclosure," The Philippine STAR, May 16, 2006.
[47] "Lafayette Philippine assets may be seized by creditors due to delay of mine project," Manila Bulletin, May 16, 2006.
[48] Ibid.,
[49] Felix, R., op. cit.
[50] Position paper regarding mining in Rapu Rapu: Closure of Lafayette Mine, Revised February 27, 2006, INECAR, Ateneo de Naga University, Naga City.
[51] Woodward-Clyde. "Rapu RapuPolymetallic Project – Environmental Impact Statement (EIS), Vol III, p. 3-29.
[52] Figures cited by Makilan, A. "Destroying Rapu Rapu through mining,"Bulatlat, Volume V, .No. 41, 20-26 November 2005. LPI estimates a construction cost of US $37 million and exploration and development cost of US $9 million.
[53] Palangchao, H. "MGB says tailings dams a hazard during downpour," Sun Star, May 8, 2003.
[54] "Scientific studies on effect of Abra river pollution shown, " Philippine Sun Star, August 25, 2005
[55] Ibid.,
[56] Ibid.,
[57] Interview with Jaime Cardel, Rapu Rapu Municipal Development Officer and member of the monitoring team which visited the project site on April 26, 28, 2006.
[58] Ibid.,
[59] Requejo, R., "SC upholds ruling vs Marcopper executives," Manila Standard, February 14, 2006.
[60] Woodward-Clyde, op.cit. p. 2-15.
[61] Heavy rainfall in Rapu Rapuoccurs during the months of November to January.
[62] Interview with Richard Ecleo, Micro Hydro Electric Plant Maintenance Officer (and SAGIP-ISLA Finance Officer), Binosawan, April 29, 2006.
[63] Interview with Jaime Cardel, Rapu RapuMPDO, May 4, 2006.
[64] Woodward-Clyde, op. cit. p. 3-4.
[65] Ibid., p. 3-5.
[66] The study shows pollen grain abortion at 60.997 in the Hixbar mining site (Sta. Barbara) and 33,178 at the Lafayette exploration site (Pagcolbon) compared to the 4.516 observed in the control site (Poblacion).
[67] Pegg, J.R., "EPA Says Toxic Releases, Wastes Declined in 2001," Environmental News Service, june 30, 2003.
[68] Ibid.,
[69] Contreras, V., Cabacungan, G. Jr. & Rivera, B., " Australian gov't defends Lafayette," Philippine Daily Inquirer, May 23, 2006.
[70] Cabacungan, G. Jr., "Palace: No to mining ban: Foreign owners to stay; industry still government's priority," Philippine Daily Inquirer, May 21, 2006.
[71] "Australia Miner in Philippine Cyanide Leak Probe," Reuters News Service, October 311,2005.
[72] The Social Development Programme of Lafayette Philippines Inc. (undated)
[73] Ibid.,
[74] Section 24, Special Economic Zone Act of 1995 (RA 7916) as amended by RA 9748 in 1998.
[75] Powerpoint presentation of the Lafayette Community Action, Relations and Education (CARE) Group.
[76] Interview with "Tsa", a contractual mine workers employed by RRMI.
[77] Interview with "Keatz", a mechanical engineer deployed at the Engineering Department of RRMI.
[78] Ibid.,
[79] Powerpoint presentation of CARE Group.
[80] Summary of CDP Projects, The Social Development Programme of Lafayette Inc. (undated)
[81] Ibid.,
[82] Ibid.,
[83] Rapu Rapu Socio Economic and Physical Profile, 2002, 2nd edition.
[84] Rivera, B. & Labalan, B. "Rapu Rapu local execs now want Lafayette to stay," Philippine Daily Inquirer, May 24, 2006.
[85] Ibid.,
[86]Interview with Rapu RapuVice Mayor Jose Chan, May 2, 2006.
[87] Interview with Richard Ecleo, SAGIP ISLA Finance Officer, April 29, 2006.
[88] Ibid.,
[89] Ibid.,
[90] Interview with Fr. Felino Bugawisan, Assistant Parish Priest of the Sta. Filomena Parish in the Poblacion, April 30, 2006. This phenomenon is attested to by residents of the Poblacion and the direct impact barangays. The Municipal LGU is also aware of the local Catholic Church's position.
[91] Deen, Thalif. "The Scariest Predators in the Corporate Jungle," in Perspective, The Business Mirror, Vol. 1, No. 169, May 25, 2006 (www.businessmirror.com.ph/0525/index.php)
[92] Interview with Albay Vice Governor Jesus Calisin (by phone), May 4, 2006.
[93] Estimated at: 100 kgs/catch x PhP90/kg x 20 days x 1,000 fishers.
[94] Estimated at: 10 kgs/catch x PhP50/kg x 30 days x 1,100 fishers.
[95] Estimated at: 10-15 kg/catch x PhP80/kg x 20 days x 1,000 fishers.
[96] Estimated at: 10-20 kg/catch twice a day x PhP60/kg x 25 days x 1,100 fishers.
[97] Estimated at: 60 kgs/banyera x 100 banyeras x PhP60-70/kg x 20 days x 6 operations.
[98] Estimated at: 50 kgs/catch x PhP42.50/kg x 2 times per day x 20 days x 1,000 fishers.
[99] Anecdotal accounts during the FGD in Gubat, Sorsogon, May 2, 2006.