Australian National University

SESSION 5

HOW WE DO SOCIAL IMPACT ASSESSMENT

Colin Filer

PARADIGM	BIG THING	IMPACTED
ENVIRONMENTAL PLANNING	Planned disturbance	Social environment
POVERTY ALLEVIATION	Aid/welfare projects	Human well-being
CORPORATE RESPONSIBILITY	Social pressures	Business practices
PUBLIC HEALTH	[Anything]	Public health
GENDER RELATIONS	[Anything]	Gender relations
INDIGENOUS PEOPLES	[Anything]	Indigenous peoples
HUMAN RIGHTS	[Anything]	Human rights
NEW TECHNOLOGY	New technology	[Society/people]
PUBLIC POLICY	Public policy	[Society/people]
CLIMATE CHANGE	Climate change	[Society/people]
NASTY ACCIDENT	Nasty accidents	[Society/people]
INVOLUNTARY RESETTLEMENT	Involuntary resettlement	[Society/people]
PROTECTED AREAS	Protected areas	[Society/people]

TYPICAL IMPACT ASSESSMENT PROCESS

Identify the BIG THING and the people affected
Describe relevant features of the BIG THING
Undertake provisional stakeholder analysis

Scope range of likely impacts (good and bad)
Gather more evidence about social environment
Construct baseline or 'business-as-usual' scenario
Assess significance of each specific impact

Measures to mitigate negative impacts (costs)
Measures to maximise positive impacts (benefits)
Measures to monitor both types of impact

TYPICAL SOCIAL IMPACT STATEMENT TABLE OF CONTENTS

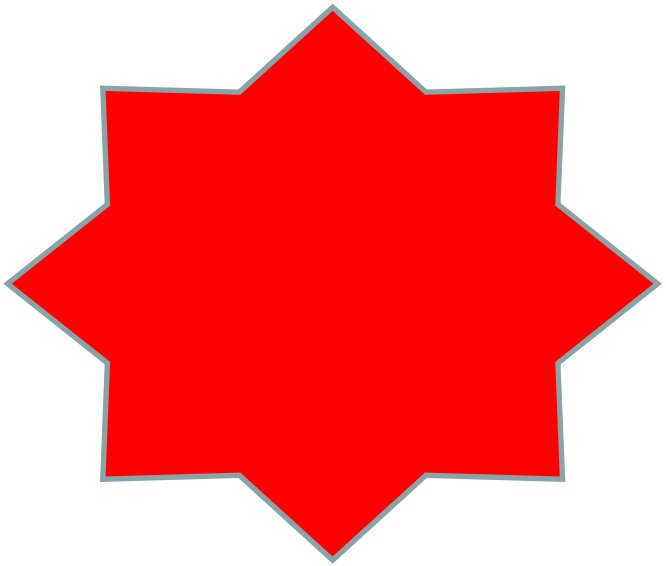
1. INTRODUCTION
2. DIMENSIONS OF DEVELOPMENT PROPOSAL
3. COMMUNITIES AND AREAS OF SOCIAL IMPACT
4. PRESENT SOCIO-ECONOMIC ENVIRONMENT
5. BASELINE AND DEVELOPMENT FORECASTS
6. MONITORING AND MITIGATION STRATEGIES

SHAPE AND SIZE OF THE BIG THING

Land area occupied

Amount of physical disturbance

Volume of output



Infrastructure constructed

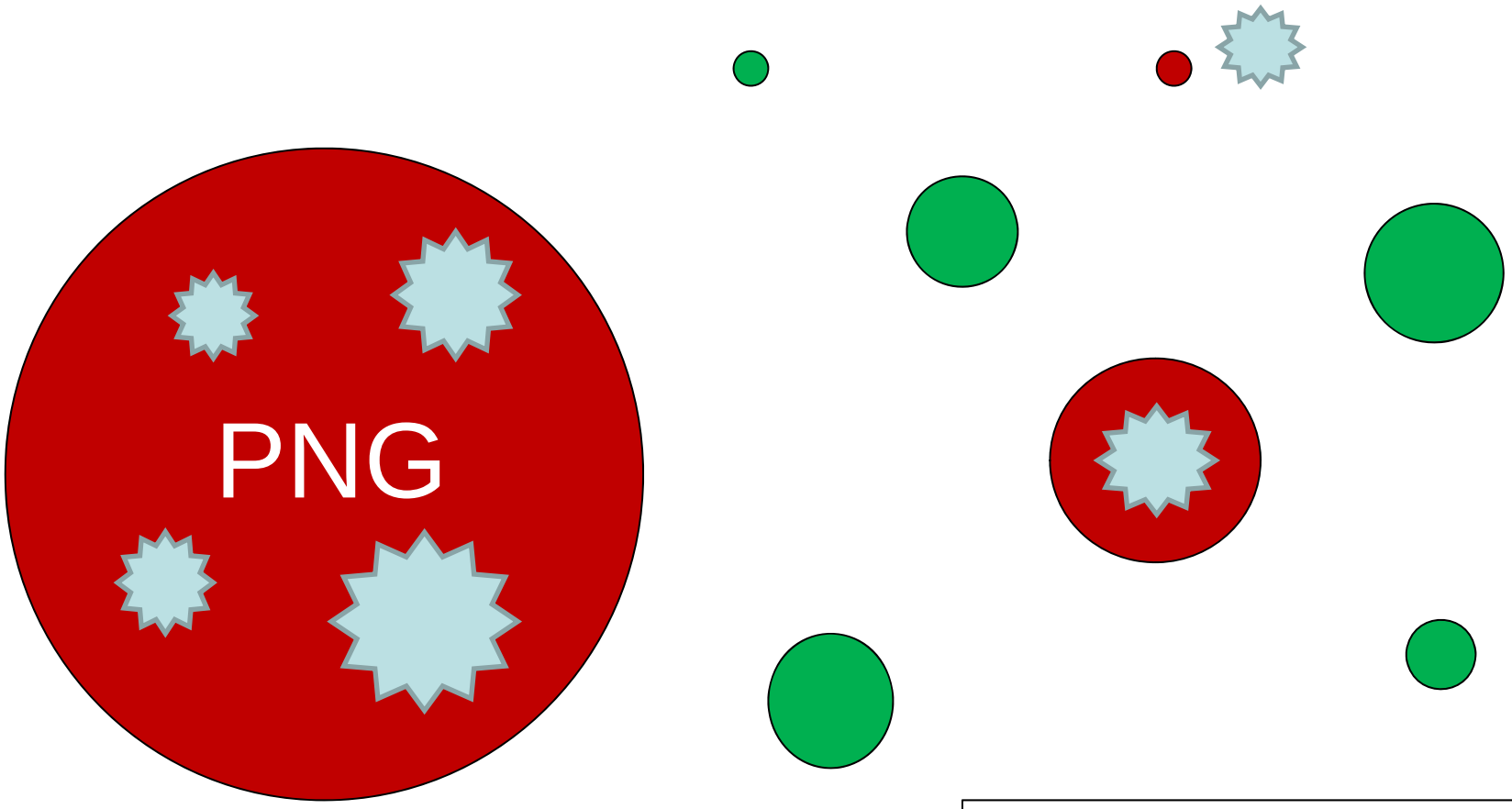
Size of benefit streams

Period of operation

Number of jobs created

OTHER?

SHAPE & SIZE OF NATIONAL ECONOMIES



Some have mines and some do not

DISCUSSION TOPIC 1

How might variations in the scale of a major resource project, relative to the size of a national economy, affect its social and economic impact?

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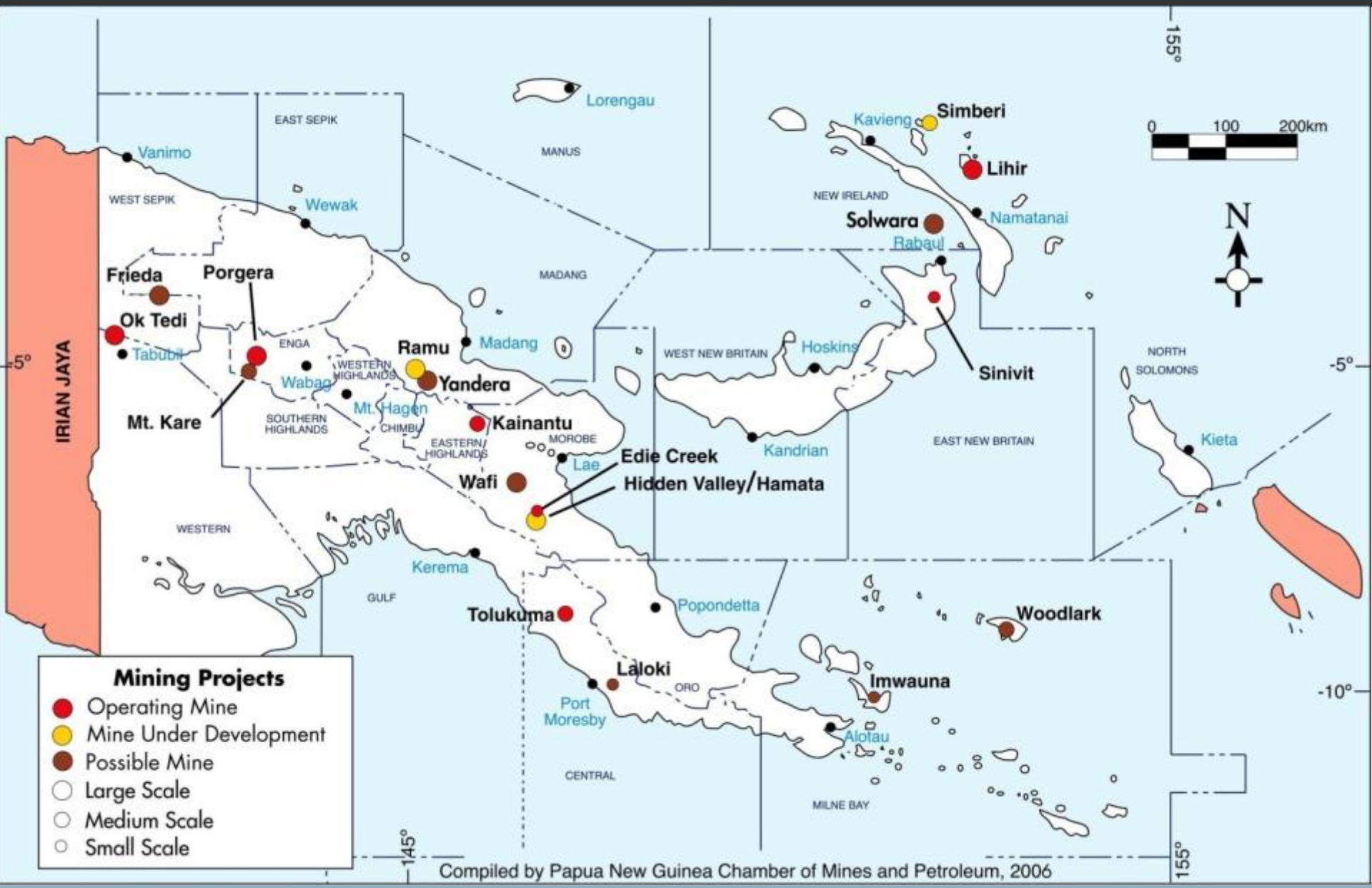
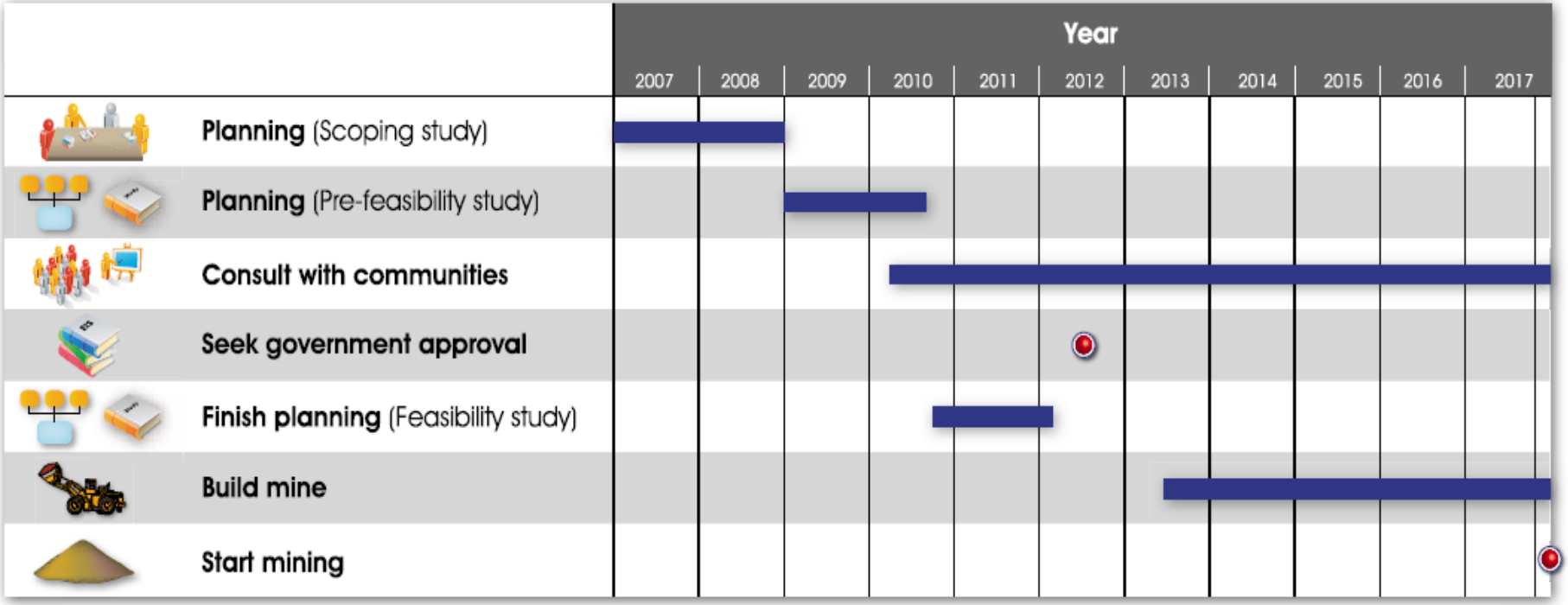
PNG MINING PROJECTS IN 2006



PAPUA NEW GUINEA CASE STUDY:
FRIEDA RIVER COPPER MINE AND HYDRO-DAM

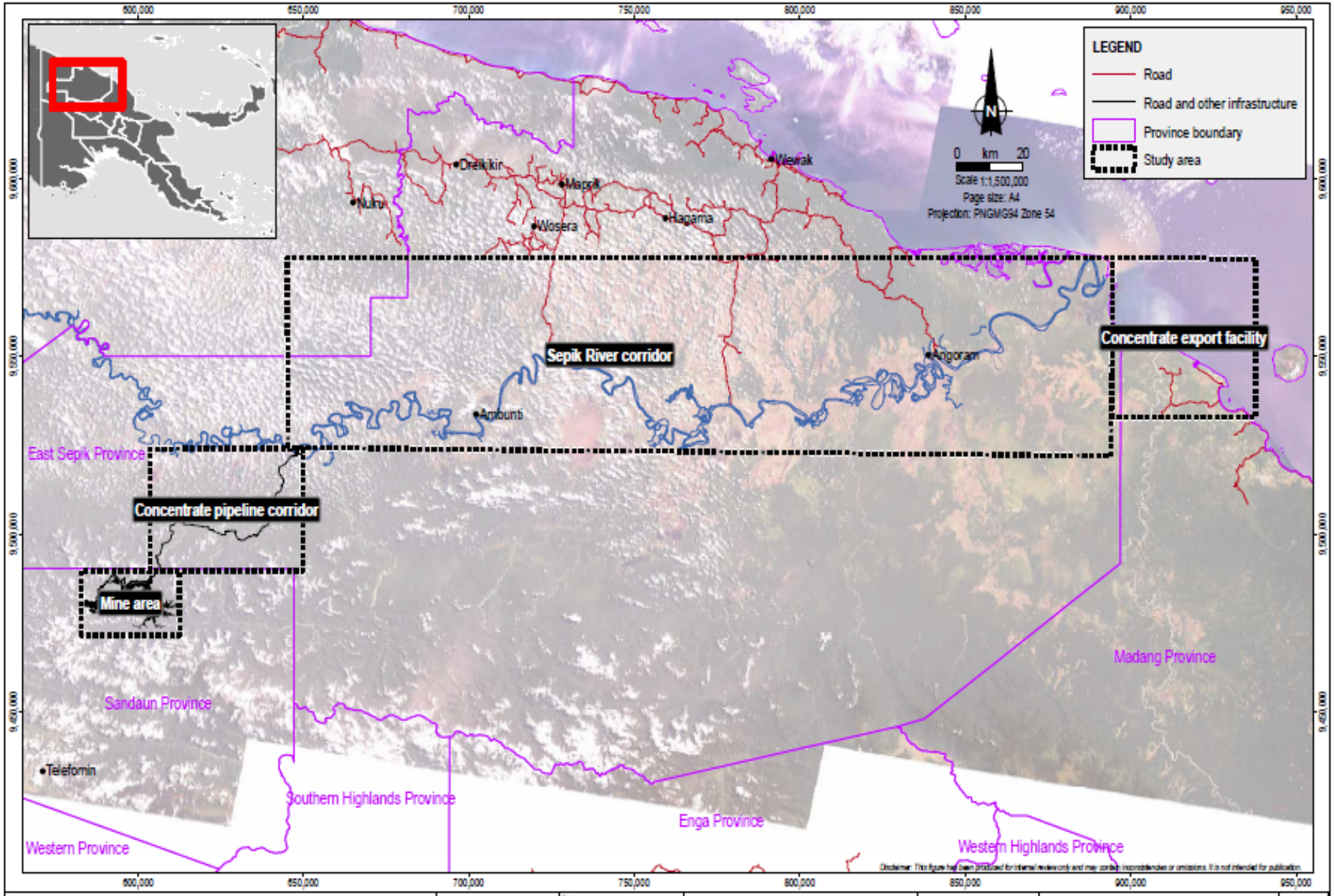


ENVIRONMENTAL INCEPTION REPORT SUBMITTED SEPT 2009;
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
UNDERTAKEN BY COFFEY ENVIRONMENTS IN 2010-11

	coffey environments	Job No: 128 File Name: 128_18_F037_HB	Xstrata Frieda River Limited Frieda River Project	FRIEDA RIVER	Critical milestones in the development of the Frieda River Project	Figure No: 37

HOW BIG WOULD THIS PROJECT BE?

- 3.8 million tonnes of copper and 5.8 million ounces of gold produced in 18-year [or more] mine life
- Some benefit streams (e.g. royalties) can be calculated from projected price of minerals
- Open pit, processing plant, mine waste facility, hydro-dam plus reservoir to occupy c.8000 hectares
- Three or four existing villages (maybe 500 people) to be relocated
- Construction workforce about 9000; operations workforce maybe 3000



Source:
Infrastructure, district centres, roads, rivers and province boundaries from Xstrata.
Satellite imagery (LandSat) from Xstrata.

coffey environments

Date: 01.07.2011
MXD: 129_18_GI0001_v0_1
File Name: 129_18_F001_GI0

Xstrata Frieda River Limited

Frieda River Project

FRIEDA RIVER

Overall project and study areas

Figure No: 1
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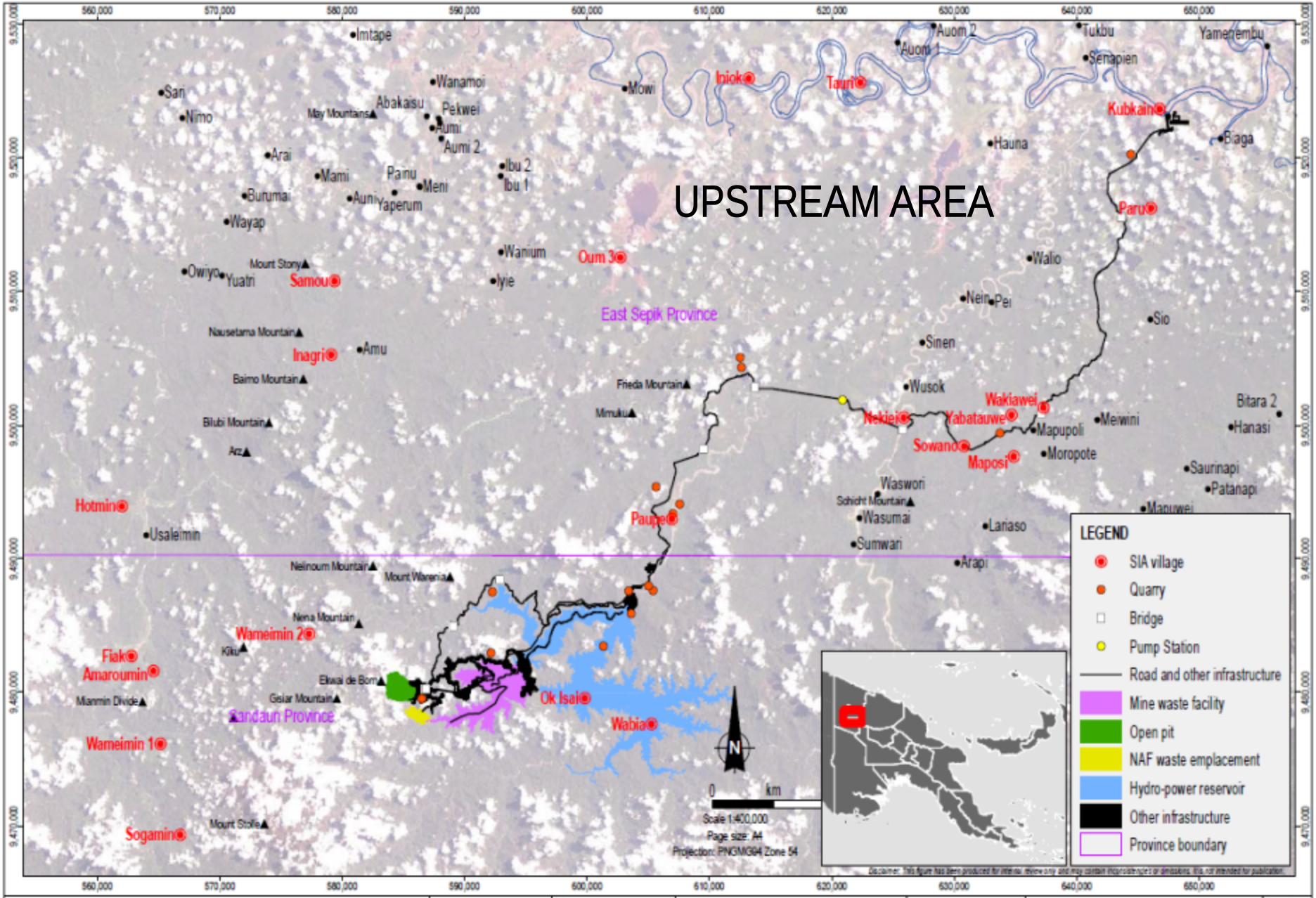
TYPES OF IMPACTED COMMUNITY

- Three villages (upstream) in which some or all people would have to be resettled in order to make way for project facilities, as well as losing access to some of their territory.
- Several villages (upstream) in which some or all people would lose access to some of their territory without having to be resettled.
- Lots of villages (upstream and downstream) in which some or all people would experience significant loss of amenity without losing access to any of their territory.


UPSTREAM AREA
East Sepik Province
Sandaun Province
Imtape
Wanamoi
Abakaisu
Pekwei
Aumi
Aumi 2
Ibu 2
Ibu 1
Meni
Painu
Yaperum
Auni
Mami
Arai
Buruma
Wayap
Nimo
Sari
May Mountains
Mowi
Inok
Taun
Auom 2
Auom 1
Tukbu
Senapien
Yamenembu
Kubkain
Hauna
Biaga
Paru
Walio
Nein
Pei
Sio
Sinen
Wusok
Wakiawei
Nekiei
Yabatauwe
Mapupoli
Mewini
Bitara 2
Hanasi
Sowando
Maposi
Moropote
Saurinapi
Patanapi
Manuwei
Waswori
Schicht Mountain
Wasumai
Lariaso
Sumwari
Arapi
Oum 3
Wanum
Iyie
Owiyo
Yuatri
Mount Stony
Samou
Nausetama Mountain
Inagri
Amu
Baimo Mountain
Bilubi Mountain
Arz
Frieda Mountain
Mimuku
Paupe
Hotmin
Usaleimin
Neinoum Mountain
Mount Wareniai
Nema Mountain
Kiku
Wameimin 2
Flak
Amaroumin
Mianmin Divide
Ekwai de Bom
Gsiar Mountain
Ok Isai
Wabia
Wameimin 1
Sogamin
Mount Stolle
N
0
km
Scale 1:400,000
Page size: A4
Projection: PNGMG94 Zone 54
LEGEND
SIA village
Quarry
Bridge
Pump Station
Road and other infrastructure
Mine waste facility
Open pit
NAF waste emplacement
Hydro-power reservoir
Other infrastructure
Province boundary
Source:
SIA villages from Coffey Environments.
Infrastructure, Census 2000 villages, topographic features, rivers and province boundaries from Xstrata.
Satellite imagery (LandSat) from Xstrata.
coffey environments
Date: 04.07.2011
MXD: 129_16_GIS002_v0_2
File Name: 129_16_F002_GIS
Xstrata Frieda River Limited
Frieda River Project
FRIEDA RIVER
Mine area and concentrate pipeline villages
Figure No: 2
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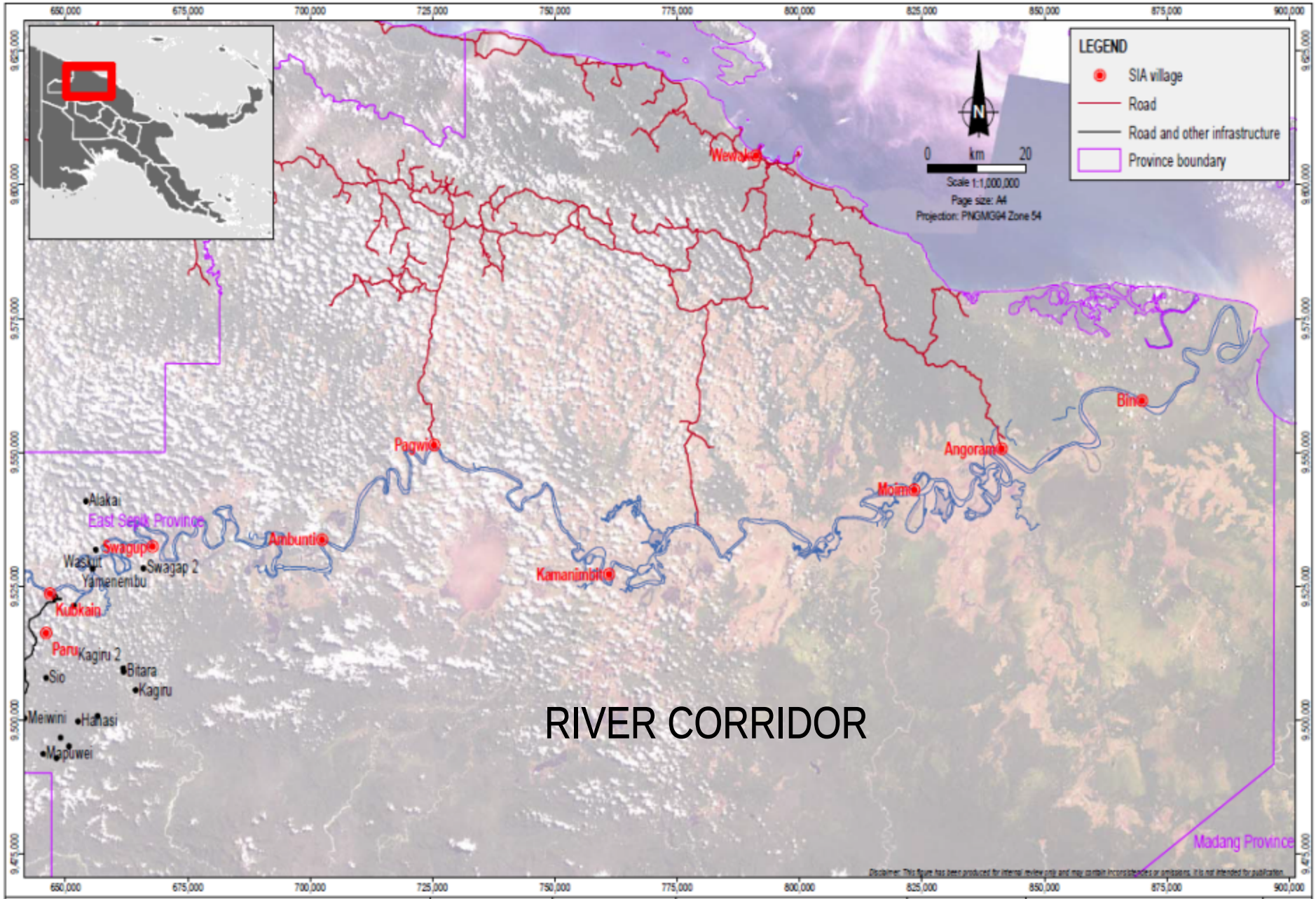

Source:
SIA villages from Coffey Environments.
Census 2000 villages, roads, rivers and province boundaries from Xstrata.
Satellite imagery (LandSat) from Xstrata.

coffey environments

Date: 30.06.2011
MXD: 129_18_GIS004_v0_1
File Name: 129_18_F004_GIS

Xstrata Frieda River Limited

Frieda River Project

FRIEDA RIVER

Sepik River villages

Figure No: 4
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WHAT'S IN THE SOCIAL ENVIRONMENT?

THE COFFEY TABLE		COLIN FILER'S TABLE
Community Layout and Amenity		Local Social Organization
Demography and Population		Human Settlement and Land Use
Land and Water Resource and Use [?]		Ownership of Resources
Economy		Leadership and Dispute Settlement
Health		Transport and Communications
Education		Communal Balance of Payments
Governance, Law and Order		Health, Education and Welfare
Infrastructure		Local Attitudes and Values
Domestic Water Use and Sanitation [?]		
Culture and Customs		

ANYTHING ELSE?

CLASSIFYING SOCIAL IMPACTS

We can classify social impacts by dividing the social environment into its component parts (e.g. different types of people or institution or relationship)

We can also make other distinctions (e.g. between short-term and long-term impacts, or direct and indirect impacts)

BUT CLASSIFICATION IS NOT THE SAME AS SPECIFICATION

To say that there are ‘impacts on leadership’ or ‘impacts on women’ is NOT to describe any ACTUAL SOCIAL IMPACT

SPECIFYING SOCIAL IMPACTS

- **We normally represent a specific social impact as a CHANGE IN THE VALUE OF A SOCIAL VARIABLE**
- **This could be a measurable change, e.g. the number of people committing suicide, or the number of incidents of domestic violence**
- **Or it could be something that is harder to quantify, e.g. loss of authority on the part of traditional community leaders**

STANDARD 'MATRIX OF SIGNIFICANCE'

	Sensitivity of receptor		
Magnitude of impact	High	Medium	Low
Negative/high	Extreme	Major	Moderate
Negative/medium	Major	Moderate	Minor
Negative/low	Moderate	Minor	Negligible
Positive	Positive	Positive	Positive

'The magnitude of an impact is defined as the amount and type of change, including the severity, geographic extent and duration of the impact.'

'Sensitivity is defined as the susceptibility of the society to change, including its capacity to adapt to, or accommodate, the kinds of changes that the project may bring about.'

EXAMPLE OF SPECIFIC SOCIAL IMPACT ON MINE AREA

SOCIAL IMPACT CATEGORY: POPULATION AND DEMOGRAPHY

SUB-CATEGORY: Direct impact on population from mine workforce

SPECIFIC IMPACT: Population will increase with influx of outsiders employed in construction and operation of project

MANAGEMENT MEASURES: Maximise employment of people from villages in affected area; other workers employed on fly-in-fly-out basis

GENERAL IMPACTS ON POPULATION & DEMOGRAPHY IN MINE AREA

Impact Description	Residual Impact after Implementation of Management Measures		Impact Rating
	Magnitude	Sensitivity	
Direct impact on population from mine workforce	Low	Low	Negligible
Indirect impact on population from in-migration and temporary visitors to the area	Medium	Medium	Moderate
Indirect impact on population (increased lifespan, lower infant mortality) from increased wealth	Positive		
Direct impact on community demographic from mine workforce	Low	Low	Negligible
Indirect impact on community demographic from in-migration	Medium	Medium	Moderate

DISCUSSION TOPIC 2

What are likely to be the three most significant social impacts of a medium-sized deep sea mining project?