

Understanding why Impact Assessment fails; a Case Study of Theory and Practice from Wafi-Golpu, Papua New Guinea

Save why Impact Assessment em fail; na Case Stadi blong Therory na Practis blong Wafi Golpu, Papua New Guinea

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This is a summarised and translated version of a longer research article entitled *Understanding why Impact Assessment fails; a Case Study of Theory and Practice from Wafi-Golpu, Papua New Guinea*. Article section numbering relates to the original article, which is an academic and referenced version. Copies and more information is available from Charles, via charles.roche@murdoch.edu.au or phone +6145901714 or Howard on +675 7141 0311 or are downloadable [here](#).

Dispela em summary blong longpela wok painim aut o research pepa atikol taitel: *Save why Impact Assessment em fail; na Case Stadi blong Therory na Practis blong Wafi Golpu, Papua New Guinea*. Artikol section namba em kam yet long original artikol, na em academic o bikpela save levul antap na referens verson. Kopi na moa information istap long Charles, email Charles.roche@murdoch.edu.au or phone +6145901714 o Howard long +675 71410311 or are downloadable [here](#).

1. Introduction

This research began with and responded to Communities in Papua New Guinea (PNG) who asked questions about the likely impacts from mining. The aim was to share and exchange knowledge with mining-affected Communities, a process involving theory and the sharing of international, provincial and local experience. After exploring extractive impacts more broadly, the research for this article explored impact assessment (IA) with Communities who felt excluded from the IA process and had strong concerns about its accuracy and validity.

1. Tok igo pas

Dispela wok painim aut stat na bekim ol kominitis insait long Papua Niu Gini (PNG) husait iaskim long wanem bagarap maining bai kamapim. As tingting em blong serim save wantaim kominiti istap insait long eria blong main, wantaim pasin blong soim save na ol experiens blong narapela kantari, provins na lokol experiens. Bihain long painim aut mining bilong kamautim na bagarapim graun na bus, wara, manmeri bungim hevi, dispela artikel ripot igo insait moa long skelim bagarap (Impek Asesmen IA) wantaim ol kominitis husati ipilim ol istap autsait long rot blong IA na ol igat strongpla bel hevi long tok ino kam gut na stret.

From a mining companies' perspective, IA is a process of identifying impacts, finding solutions and achieving project approval. In practice, however, IA is a complex, technocratic and time-consuming processes that can frustrate both mining companies and Communities. This review examines the Wafi-Golpu Project Environmental Impact Statement (hereafter WGEIS) using community perspectives that emphasise human flourishing to make visible what is missing from the IA with a specific focus on how PNG communities are seen, described, experienced

and excluded. The aim is to help Morobe Communities, inform other Wafi-Golpu stakeholders and to use the Community experience to inform other mining affected communities around the world and to positively change the way we think about and conduct mining operations.

Long luksave blong maining kampani, IA em rot blong luksave long impek o bagarap, na painim rot na kamap wantaim projek na wok igo het. Long kamap tru, IA em ino isi, hat teknikol na takim longpla taim tru na dispela save bring bel nogut long maining kampani na kominitis. Dispela lukluk igo insait long Wafi Golpu Projek Environmen Impek Statemen (WGEIS) wantaim tingting blong kominiti skelim moa long Gutpla Sindaun long putim ples klia wanem samting em ino istap long IA wantaim wanem luksave blong PNG kominitis ilukim, toktok, experiensim na ino istap. As tingting em blong helpim ol kominitis insait lon Morobe na tokaut lon arapela manmeri igat interest long Wafi Golpu na long usim kominiti experiens long toksave long arapela kominitis long ples graun na kamapim gutpela senis blong tingting long pasin how maining mekim wok blong ol.

2. Methodology and theoretical context

Part of a larger study, the fieldwork methodology for this paper is extensively discussed in a sister article entitled *Unseen existences: stories of life from Venembeli, Papua New Guinea*. In brief, we used a deliberately emancipatory (to give people freedom and social and political rights) and decolonial participant action research (PAR) approach using *tok stori* (to exchange stories) and *tok stori/tok ples* (to exchange stories from local language) which gives primacy too and amplifies local voices. The research responds and to as was guided by questions asked and stories told by the Communities. While these stories come from Venembeli, based on prior research we believe that other communities in the area, including Hekeng and Nambonga and others from the Babauf, Yanta and Hengembu Groups would have their own, similar stories.

2. Rot blong mekim wok painimaut/Method na save istap insait

Hap blong bikpla stadi, rot blong mekim wok blong dispela pepa ibin kamap wantaim moa stori igo ikam insait long arapla pepa atikel taitel: *Unseen existences: stories of life from Venembeli, Papua New Guinea*. Sotpla, long givim manmeri fridom sosel na politikol rights, na free long tinting, manmeri ol yet luksave na pilim fri insait long dispela Participant action research (PAR) we tok stori, manmeri long kominiti pilim fri na serim stori long ol yet tok ples igo ikam na serim long grup usim tokples, dispela givim moa strong na givim lokol voice igo aut. Dispela research bekim ol askim na ol stori kominiti serim. Na dispela ol stori ikam long Venembeli bihainim research wok kamap pinis, na mipela bilip arapela kominitis long eria em Hekeng na Nambonga na arapla blong Buabaf, Yanta na Hengembu Grup bai igat blong ol yet, wankain stori.

4. Social Impacts from Mining in Papua New Guinea

In this section, we present a short history supported by examples to provide context and identify challenges for mining in PNG to purposefully explore issues and social impacts that relate to and were raised by, the Wafi-Golpu Communities. We note that the link between mining trends – evident at multiple PNG mine sites – and the social and environmental impacts has been well

established with a lack of governance contributing to increased community resistance to mining's social and environmental impacts.

4. Hevi o impek manmeri (sosel) bungim long Maining insait long Papua New Guinea

Long displa seksen, mipla givim sotpla histri wantaim ol exampels long givim klia tingting na luksave long hevi blong maining insait long PNG kamapim klia ol hevi na sosel impeks igo pas na Wafi Golpu kominitis itok aut. Mipela luksave long pasin blong maining kamap long plenti insait long PNG- sosel na environmen bagarap kamap ples klia wantaim nogat gavman givim sapot long kominiti pait agensim maining long sosel na environmen impacts.

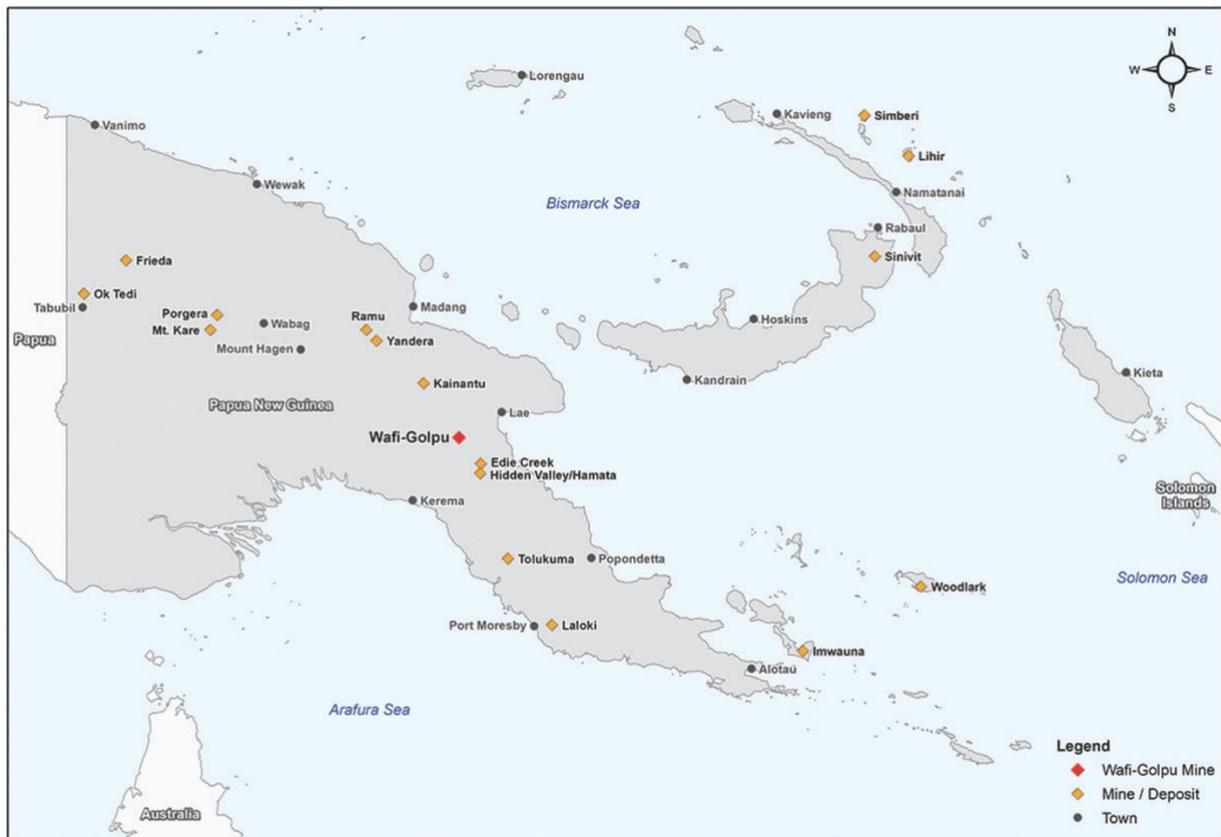


Figure 1. Mines in Papua New Guinea/Maining insait long Papua Niu Guinea

Over thirty years ago, Dove, Miriung and Togolo outlined how land is everything in PNG, meaning that the land cannot be separated from the people and identifying long-term issues with full disclosure and transparency describing how “[T]he people were told only of the ‘benefits’ and all negative effects of the mine were concealed from them”. By the 1980s further evidence of the clash between transnational mining enterprises and communities was captured in a letter from Father John Momis to the Chairman of Bougainville Copper Limited (BCL). Momis states that BCL is a “faceless corporation” whose “executives inhabit a fantasy world” unable to see, respect or engage in Melanesian Ways. In the same year Hyndman described “[A] long series of ecocide disasters ...” at Ok Tedi mine and the interruption of subsistence and cash crop production due to the enormous environmental damage at Panguna.

Moa long tripla ten yia igo pinis, Dove, Miriung na Togolo putim ples klia how graun em olgeta samting long PNG, em min olsem, graun ino istap blong em yet long manmeri na luksave long hevi bai istap longpela taim banisim manmeri na ino mekim ples klia how “Ol pipol kisim toktok blong benefit na nogut sait blong main em kampani haitim long ol.” Long 1980s ibin igat evidens blong hevi namel long maining kampani blong narapela kantri blong autsait na kominiti Fr John Momis bin raitim long pas igo long Siaman blong Bougainville Copper Ltd (BCL). Momis tokaut olsem BCL em ino trupla kampani na nogat pes, opis managmen istap long driman ples, ino inajp lukim, soim respect na bungim long pasin blong yumi-Melanesian Ways. Long wankain yia Hyndman tokaut “(A) longpela hevi blong bagarap long bus wara graun...” long Ok Tedi main na bagarapim tru sindaun blong manmeri na kes krop bikos long bikpela bagarap long environmen long Panguna.

While some saw Panguna as a unique trouble, Clairmonte’s 1992 review questioned the ability of the industry to contribute to PNG’s development. He describes the situation as “[Y]et another macabre reminder of the extent to which PNG’s economy has been structured in the interests of expatriate big capital in blatant complicity with political interests at home and abroad”. Barriers to an effective contribution from the mining industry to human development in PNG remain, with more recent studies identifying a lack of contribution to well-being; a disconnect between what is promised by companies and what is received by communities with examples from Lihir and Simberi, Hidden Valley, Lihir and Misima mines.

“Taim sampela lukim Panguna olsem wanpela kain trabel, Clairmonte long 1992 lukluk gen long askim strong blong maining insdustri long divilopmen blong PNG. Em diskraibim situation olsem, “ Na narapela luksave blong ikonomi blong PNG inapim interest blong save manmeri blong autsait wantaim full sapot blong politicians long hia and autsait long kantari.” Maining indastri insait long PNG igat hevi blong kamapim senis blong manmeri we nupela stadi wok painim aut tok klia long nogat kontribusen blong gutpla sindaun blong manmeri; promis namel long kampani na wanem samting kominiti kisim long Lihir na Simberi, Hidden Valley, Lihir na Misima mines.

Following the Panguna crisis a PNG baseline study identified numerous issues and knowledge gaps, the most relevant to our work, being (1) the lack of studies and understanding of mining’s

effect on social and economic change from both immanent and intentional development; (2) poor communication; (3) impact of mine waste; and (4) the lack of effective social assessment and monitoring. Further, Banks describes the application of social assessment and monitoring as irregular, pointing to a lack of interest from corporates and poor government enforcement. These problems remain today, at Lihir a lack of transparency, companies having much more power than communities and a reduced government activity all contribute to social conflict including fears of violence against women around the Lihir mine and avoidable conflicts caused by displacement (resettlement). And the company focused on their reputation rather than the communities experience of social impacts.

PNG baseline stadi luksave long plenty hevi na save ino istap klia, bihain long Panguna crisis na em fit insait long wok blong mipla (1) nogat stadi na save blong hevi long sosel na ikonomic senis bai kamap klostu taim na bikpela tingting blong divilopmen; (2) communication ino gutpla; (3) hevi blong pipia blong main na (4) inogat sosel assessment na monitoring. Moa yet ol Banks itok application blong sosel assessmen na monitoring em ino stret, nogat interest ikam long kampani na tu nogat sapot blong gavman long bihain loa. Dispela hevi istap tete long Lihir nogat transparensi, kampani igat moa pawa long kominiti na nogat wok blong gavman long helpim hevi blong manmeri long sait blong violens against women long Lihir na hevi ino sapos long kamap bin kamap bikos long resettlement. Kampani igat astingting bilong protectim nem blong em yet na ino blong helpim kominiti bungim hevi o sosel impacts.

Gendered impacts from mining in PNG are inescapable. Byford describes a lack of women's participation in decision-making on Misima, despite women there suffering the gendered impacts of mining common at other mine sites in PNG including increased workload due to male absenteeism; family fragmentation; prostitution; rape; single motherhood and domestic violence. Women's exclusion from extractive decision-making has always been a challenge in PNG, with gendered traditions, conservative Christianity and a masculine mining industry combining to deny women a voice as well as disproportionately distributing benefits to men.

Givim luksave/respect long meri long maining insait long PNG em bikpla hevi hat long escape. Byford tokaut olsem ol meri ino participate insait long mekim disisen long Misima. Ol meri long Misima pilim pein blong pasin blong nogat luksave long meri em kamap wankain long arapela mine site long PNG na wok blong meri mekim moa wok taim man ino istap; family bruk, pasin pamuk, rape, single mama na kros pait insait long marit. Pasin blong olgeta man ino involvim meri long risos divilopmen long mekim disisen olgeta taim istap challenge long PNG, we kastom blong ples, Kristen sios holim pas bilip we meri em istap long sapotim tasol wok blong man, na maining tu strongim wok blong man denyim meri long sanap toktok na olgeta benefit em blong man tasol.

Long recognised but poorly understood in development and mining sectors, unplanned development represents a significant part of the change, positive and negative, that large-scale mining brings. While intentional development, such a school or bridge is easy to see, immanent development, which is unplanned, spontaneous, chaotic and potentially conflictual is much

harder to see. Negative impacts can include the breakdown of social fabric, as described above on Misima and for the Reite Community who live on the edge of the Ramu mine, whose semi-subsistence lifestyles responsible for most of their food, water and housing, was disrupted by their desire to enter the market and sell food to the mining company. While access to market was meant to be a positive outcome, the result was a fragmentation of culture and the peoples' long-term relationship with their land.

Awareness kamap tasol nogat klia save blong divilopmen na maining sector, divilopment we ino istap long plen bringim bikpela senis, gutpla na nogut bikpela wok blong maining bringim. Taim divilopmen istap long nid na tingting blong manmeri olsem skul o bris em isi long lukim, na taim sot term plen em ino istap long plan, em wok mas igo het, bagarapim na bring moa hevi na em hard long lukim.

5. Impact Assessment Perspectives

Impact assessment is based on Western concepts and has a strong scientific bias. This can mean that people living in PNG are not properly seen, heard or understood by the IA process. This often creates poor outcomes for local people, which means we should question the credibility and ethics of the way IA is carried out. Changes to the way IA is conducted in PNG are required if the well-being of communities is properly valued and prioritised by the mining industry and governments. A critical reform is the need for Communities to be more involved in decision-making about how mining operates and impacts on communities and the environment they depend on.

5. Lukluk igo insait long Impek Asesmen

Impact assessment em based long tingting blong Western/autsait lain na holim strong save blong science. Dispela em ino klia long pipol istap insait long PNG, na ol ino lukim gut, harim o klia gut Impact Assessment (IA) proses. Dispela em ino kamapim gutpla kaikai blong wok long lokol manmeri, dispela em imin olsem mipela imas askim long pasin trutru na rot tru blong IA ibin kamap. Senis blong how IA ikamap long PNG igat rot bilong bihainim sapos gutpela sindaun blong ol kominitis em imas valueim gut na givim moa time na luksave ikam long maining indastri na ol gavman. Kominiti imas sanap strong long mekim disisen long how main operate na bagarap kamap long kominitis na bus, graun na wara ol depend long en.

5.2 Evolving IA Practice (Impact Assessment)

The need to reform the Western bias of IA has been known for many years. Writing about Australian social impact assessment (SIA) in 1989, Howitt identified how SIAs had two different approaches, one that empowers the state and the proponent (the mining company), allowing proponent commissioned research to be '*...reasonably characterised as post facto justification of predetermined outcomes*'. The alternate approach is more community orientated, a deliberate focus on, and advocacy for, the community interest. An emancipatory approach that privileges self-determination. In another work Howitt and Suchet-Pearson describe how even people's ideas and thoughts about development have been influenced by the Western idea of development and impact assessment. Then in 2011 Howitt describes how

the processes of IA gives the power to mining companies and governments rather than the people.

5.2 Pasin blong Impek Asesmen wok long gro na kamap olsem praktis

Igat nid long senesim save blong autsait long IA (Impact Assessment) ibin kamap klia plenty yia. Ripot blong Australian sosel impact assessment (SIA) long 1989, Howitt painim aut how SIAs igat tupelo narapela rot blong mekim wok, wanpela blong givim luksave na pawa igo long gavman na maining kampani, givim tok orait long kampani mekim research imas "...reasonably characterised as post facto justification of predetermined outcomes", Narapela rot em givim moa pawa long kominiti, wokbung namel long kominiti. Putim kominiti painim fridom igo insait long self determination. Long narapela work ripot Howitt na Suckett-Pearson tokaut long how tingting na save blong pipol long divilopmen em save blong autsait ikam daunim tingting blong divilopmen na impact assesmen. Na long 2011, Howitt tokaut long rot blong Impact Assessment (IA) givim pawa long ol maining kampanis na gavman na ino pipol.

But there are different ways of living in the world and alternate philosophies, like the Melanesian Way, with values and aspirations that challenge a Western concept of development. For example, the Ashaninka People in the central Peruvian Amazon illustrate how other value systems are often tied to alternate conceptualities of wellbeing, particular the relationship that people have with their land and how important it is to daily well-being. The importance of the Melanesian Way of living and the role of external decision makers who may have different values and objectives should not be underestimated in understanding the impacts and complexities of extractive-led development.

Tasol igat ol arapela rot blong sindaun long ples graun na kainkain bikpela save, olsem Melanesian Way (Pasin blong Yumi), pasin na tingting challengim Western (autsait) lukluk blong divilopmen, example, Ashaninka Pipol long central Peruvian Amazon kamapim klia how ol arapela value system ibung wantaim na kamapim save blong gutpla sindaun, we pipol igat strongpla relationship wantaim graun na em laip blong ol long wanwan de.

5.3 CBIA and Indigenous Knowledge (Community Based Impact Assessment)

But there is a growing recognition of the importance of Community engagement and participation in decision-making in achieving just outcomes that are capable of supporting the flourishing of local communities. Howitt describes an early example of more respectful Indigenous engagement for the then proposed Argyle mine in Australia with a dual process of expert and Aboriginal advisory panels in an IA project that "...sought to advocate the interests of local Aboriginal communities, while maintaining wider credibility". Community controlled IA can help to properly identify impacts on communities; influence decision-making; address imbalances of power; and recognise Indigenous knowledge and authority.

5.3 Kominiti Based Impact Assessment na Save blong Asples manmeri

Tasol igat bikpela luksave long gutpela blong kominiti yet imekim wok na kamapim disisen long inapim sindaun blong kominiti. Howitt tokaut long example igat bikpela respect o luksave

blong asples lain igo pas long Argyle main long Australia wantaim namel rot we expert (save lain) na asples Aboriginal advisory panel long IA projek “painim na sapotim tingting blong lokol Aboriginal kominitis na holim sapot ikam long autsait wantaim luksave.” Taim kominiti kontrolim IA, dispel bai helpim tru long luksave long bagarap insait long kominiti; influencim ol long mekim disisen; tokaut long wanem samting em ino stret (imbalance power); na luksave long lokol save na autoriti.

A recent CBIA was undertaken by the Sami Community of *Semisjuar Njarg* in Sweden who together with Lawrence and Larsen assessed impacts in parallel and in response to the proposal to construct an open-pit copper mine that would interrupt traditional Sami lifestyles. Their CBIA process, which was a community response to an EIA that failed to recognise their concerns, had three distinct ingredients: (1) independent researchers as resources; (2) a shared governance process with Community; and (3) fed into an ongoing permitting process. The *Semisjuar Njarg* Community, which “...held fundamentally different views [to the company] on what constituted the legitimate scope of the EIA” (p. 1174), sought a genuine understanding of impact, while the company, like its industry peers, regarded the process as a means of achieving approval.

Nupela CBIA kamap pinis long Sami kominiti blong Semisjuar Njarg long Sweden wokbung wantaim Lawrence na Larsen mekim wok blong skelim tupela impacts na bekim blong proposal blong kamapim open pit copper mine we em bai bagarapim kastomari sindaun blong Sami kominiti. CBIA process blong ol kominiti bekim EIA we failim tru luksave na wari blong kiminiti. Igat tripela narakain mix tingting: (1) independen researchers olsem risos; (2) Lukautim wantaim kominiti; na (3) kaikai/benefit igo insait long longpla permit proses. Dispela Semisjuar Njarg kominiti holim pas strongpla kain lukluk long kampani long wanem loa iken givim strong long wok blong EIA” (p. 1174), kamap wantaim gutpla save blong impact na kampani wankain olsem arapela indastri poroman ilukim proses olsem blong kisim approval o wanbel.

Both of these examples respected and incorporated Indigenous Knowledge and show how IA can be done where the focus is on the community, with impact assessment a learning process, rather than a proponent-based assessment to achieve mining approval. Such a process challenges the way IA is conducted as it allows communities to have plans of their own and undertake IA to guide their own development future, responding to new development proposals from a position of strength and shared understanding. A critical part of this transition is overcoming the entrenched and disputed power relations that are based in colonial relations, dominate community-company interactions and produce poor extractive outcomes.

Tupela exampels rispektim na wanbelim lokol save na soim how IA (Impact Assessment) iken kamap taim focus istap long kominiti, wantaim impact assesses olsem save blong lainim, na ino blong sapotim kampani assessmen long kisim mining approval (main long go het). Dispela kain rot agensim rot blong IA na dispela givim wanbela long kominiti imas igat plen blong ol yet na mekim IA long guidim divilopment blong bihain, givim bekim long nupela divilopmen

proposal long position na strong ol serim tingting wantaim. Wapela critical hap blong dispela senis em kirapim na bungim pawa play ibin istap wantaim kolonia master/kantri, na dispela daunim kominiti-kampani wokbung na kamapim nogut kamap ples klia.

5.4 Challenges for Impact Assessment

Below we list specific challenges to IA that can be usefully identified to guide understanding and practice. Rather than starting with a proposal, our starting point is the goal the human flourishing of Communities, with just and appropriate development. Relying on O’Faircheallaigh, the authors’ experience and extensive reading of IA literature, the list of IA challenges include: (1) dominance and control of IA by project proponents; (2) the exclusion of communities from processes (un/intentional); (3) the prioritisation of economic benefits over impacts; (4) an excessive value placed on management perspectives; (5) focus on approval rather than accurate assessment; (6) narrow scope of IA and ignoring indirect and unplanned impacts; (7) unrealistic budgets and timeframes that reduce effective participation; (8) asymmetry of power, knowledge and resources between community and company; (9) relative weighting of identified impacts; (10) IA for approval rather than ongoing management; (11) collusive corruption of agencies and leaders/elites; (12) political licence to operate overriding proper assessment processes; (13) unclear risk assessment methodologies; (14) focus on technically solvable management problems and solutions rather than lived impacts (i.e. resettlement rather than displacement); (14) overestimating benefits, underestimating impacts; (15) a lack of clearly implemented IA ethics and standards; (16) a lack of clarity with unreferenced and unsupported statements with limited or no peer review; and finally (17) assumes that everyone values the same things. While unable to further expand on these challenges here, we argue that they represent generalisable challenges that continue to undermine the function and legitimacy of IA with many evident in the WGEIS.

5.4 Challenges blong Impek Asesmen

Mipela putim long list tambolo long IA long usim gut long guidim save na putim long practice. Mipla ino stat wantaim proposal o pusim tingting, mipla stat wantaim astingting em gutpla sindaun blong ol kominiti wantaim gutpla divilopmen. Saveman-O’Faircheallaigh, ol raiter experiensim na ridim ol IA (save buk) literature na list blong IA challenge em: (1) lukdaun na control blong IA ikam long ol lain saptim projek; (2) kominiti ino istap insait long proses (un/intentional); (3) givim priority long ikonomic benefit antap long bagarap; (4) givim moa luksave long managemen; (5) lukluk long approval o wanbel na ino trupela asesmen; (6) liklik size lukluk blong IA na nogat luksave long hevi bai kamap indirect na impact ino istap long plen; (7) ino strepela budget na timeframe mekim na nogat gutpela participation; (8) level blong power ino wankain, save na risos namel long kominiti na kampani; (9) skelim ol impacts o hevi em ol relate o wankain; (10) Long aprovil IA na ino continue Managemen; (11) mekim pasin hait o corruption namel long ol agent, lidas/na wanwan save manmeri; (12) political licens long operate abrusim strepela assessmen proses; (13) Risk Assessment method ino klia; (14) lukluk long technical managemen hevi isi long stretim na laip impacts (i.e. settlement na sapos long ol bai lusim wanem samting ol bai ino inap lukim o lus olgeta; (14) abrusim mak blong benefit igo antap, underestimativ impact o hevi; (15) inogat klia plen blong nogut and

gutpela blong IA na standards; (16) inogat stretpela information wantaim sapot referens nogat sapot blong ol toktok o statemen em limited o sot, nogat peer review o nogat saveman mekim wok skelim gen, na finally o las; (17) ting olsem olgeta lain valueim o lukim wankain samting. na ino inap long igo moa long explain long ol hevi o chalenses hia mipla argue olsem ol i makim general tumas ol hevi o challenges wok long lukdaun wok na gutpla blong IA wantaim plenti hevi istap insait long WGEIS.

6. Wafi-Golpu EIS Competing Realities; the Wafi-Golpu EIS

Costing 30 million Kina (\$12 million AUD), the WGEIS is a formal, technical document of over 6800 pages, with a fifty-two-page executive summary that is also available in *TokPisin*. Our focus is on areas identified by our *tok stori* with the Venembeli Community and from previous engagements with the Yanta, Hengambu and Babuaf Peoples. These provide examples of the gap between community and company values and the different imaginaries and languages used to conceptualise and describe them. We have not undertaken an analysis of formal EIS engagement processes as the data supplied by the proponent does not relate to the local experience. For example, no paper copies of the EIS were provided to the Communities, who complained to the authors about externally controlled and secretive research that created resentment and magnified exclusion. Alongside different goals for development, this practical exclusion, multiplied by the stronger power, knowledge, influences and resources of the company (compared to the Community) reduced the opportunity and ability of for PNG Communities to increase their own power or to challenge the Western concept of development and the IA processes that validate it.

6. Wafi Golpu EIS em resis true m yet

Wafi Golpu EIS em cost K30 Million (\$12 Million AUD), WGEIS bikpela save pepa, technical document moa long 6800 pages wantaim fifty tu page executive summary istap long tokpisin tu. Mipela lukluk long eria insait long tok stori wantaim Venembeli Kominiti na arapla wokabaut kamap pinis wantaim Yanta, Hengambu na Buabaf pipol. Displa givim exampel blong gap namel long kominiti na kampani values na kainkain rot blong kirapim save na tokples long kamap wantaim klia tingting na stori moa. Mipela ino bin mekim wok skelim blong dispela EIS wok process bikos dispela ol infomesen blong kampani ino relate gut wantaim lokol experience. Na example, nogat pepa kopi blong EIS kampani o gavman givim long ol kominiti, husait ikomplen long authors husait iraitim dispela buk long kontrol ikam long outsait na mekim research wok hait na dispela kirapim bel hevi na kamapim ples klia ol ino istap insait. Namel long narapela driman tingting blong divilopment, dispela praktikol pasin blong nogat luksave long manmeri, kamap moa strong, save na influence na risos blong kampani em pawaful moa long kominiti na dispela daunim sans/opportunity na strong blong kominitis insait long PNG long apim na inapim pawa o strong long challengim tingting na divilopmen blg outsait na IA proses inapim dispela.

6.1 Proponents Justification for Wafi-Golpu

To support its case for approval the WGEIS references PNGs constitutional goals, the Development Strategic Plan 2010-30 and the PNG Vision 2050. This is not an unusual practice and in a positive way recognises that the mine needs to contribute to PNG's development consistent with that established by the representative government of the people. Yet, it also provides early evidence of the reliance on statements to signal intent, rather than a critical review or evidence-based practice as would be required in more rigorous, referenced and/or independently peer-reviewed process.

6.1 Husait wanbel na sapotim wok blong Wafi Golpu

Long sapotim case long kisim wanbel WGEIS usim PNG constitutional goals (loa blong PNG), Development Strategic Plan 2010-30 na PNG Vision 2050. Dispela kain pasin em normal long ol na long positive way em luksave olsem mine nid long kontribut long PNG divilopmen long wankain level ol ikapim wantaim gavman blong ol pipol. Na dispela tu givim pinis evidence blong sanap long toktok wantain hait tingting istap bihsait na ino critical o ino skelim tingting gut o evidence based practise, reference o independtent tim sindaun na glasim gut.

For example, the PNGSDP, which reflect democratic and equal ambitions for a PNG model of development, are presented simply. Missing is an engagement with the complexities of achieving them, their contested origins or the failure of successive governments since independence to implement or live up to them. This means the promises of the mine's development contribution are disconnected from reality and based on heroic assumptions that long term PNG development challenges can be easily overcome. For example, the WGEIS authors suggest an ability to deliver on the elusive goals of integral development and equality and participation, albeit with no reference to how an industrial mine would achieve or conflict with goals such as 'Papua New Guinea Ways', which explicitly calls for: PNG forms of participation; small scale development; respect for culture and traditional ways of life; and the value of traditional villages and communities. Asserting a capacity to deliver on these ambitious goals despite the well-established lack of connection between industrial mining and sustainable human development in PNG suggests a willingness to only examine what aids approval rather than informs assessment processes. The WGEIS uses the same uncritical approach in relating the proposed mine with PNG's Strategic Plan and Vision, despite the fact that Plan conflicts with and fails to reflect or embody embody the ambitions articulated in the preamble to the PNG Constitution.

Long example, PNGSDP glasim democratic na equal raits blong PNG model blong divilopment ol mekim isi. Wanem samting ino istap em long engagim na hat long kamapim ol, long wanem hap kamap o gavman fail since indepence long mekim kamap ples kliia. Dispela min olsem promis bilong main diviloment contribution ino istap long trupla mak. Na example, WGEIS raiters tokaut long bringim kamap intergral development na equality na participation na how bai bikpela industrial mining kamapani bai kamapim o conflict wantaim PNG goals olsem " Papua New Guinea Ways" dispela storngim participation, small scale development, rispektim culture na pasin blong ples, value blong ples na kominitis. WGEIS

usim wankain unethical ino gutpla approach long displa proposed mine wantain PNG's Strategic Plan na Vision. Plen em (conflict) bump na fail long mekim wanem samting em istap long Preambles blong PNG Constitution.

6.2 The Wafi River

The Wafi River, which swirls around the village of Venembeli on the hill above, is regarded by the Community as a big river. While far smaller than the Watut River it feeds into, the Wafi is large enough to run freely and provide an escape from the heat of the day. Explored at length in a sister article the significance of the River to Community was brought to life through stories and art. We present the stories in brief here. The first story explores the River as a site of play and formation for children, which for many hours of the day provides a site for unsupervised time to play, to learn skills from, and with friends and to develop friendships that form the basis for future village relations. The second story describes the River as a special place, where the usually sharp gendered relations are transformed and young people are freer to mix, play and flirt. As well as providing a place of youthful joy, the River is again the site of formation, where relationships are fostered, marriages arranged, and relationships consummated. The third story tells of the importance of the River to women, with one describing it as *"I feel very strong and am filled with happiness when I stay in the River, and I also see this River is like a mother to me"*. Critically, in addition to a place of happiness, the River also provides a vital source of fish protein, a place to wash, mine gold and perhaps most importantly, a woman's space where friends meet and laugh on a daily basis. The ability to mine gold is also apparent with women using their earnings to buy food, clothes, medicine, education and housing. This was found to be particularly important for vulnerable women such as single mothers, widows and women whose husbands did not support them adequately.

6.2 Wafi Wara

Wafi Wara em ron raunim ples Venembeli istap antap long maunten, ol kominiti lukim olsem bikpela wara. Dispela em liklik long Watut Wara em go bung, na Wafi em bikpla inap long ron fri na mekim kol long hot blong dei. Raitim longpela stori istap insait long narapla artile tokaut moa yet long gutpela blong Wara long Kominiti ibin kamap ples klia long ol stori na art (piksa). Mipela presentim ol sotpla stori long hia. Nambawan stori tok klia long Wara olsem ples blong pilai nap les blong ol pikinini long lainim, na displa plenti hour blong dei providim ples long pilai, long lainim nupela skills/save wantaim poro na kirapim friendship insait long ples. Second stori tokaut long Wara olsem spesol ples we strongpla luksave namel long man na meri save kamap na yangpela manmeri pilim free long mix, pilai na mangal. Na dispela givim space long ol yuts painim amamas, Wara em ples blong formim na bungim friendship, bungim ol long marit na istap strong. Third stori toktok long importance blong Wara long ol meri, wantaim wanpela tok oslem *"Mi pilim strong stret na mi pilim amamas taim mi istap insait long Wara, na mi lukim dispela Wara olsem mama blong mi"*. Na lukluk deep igo insait long ples blong hamamas, Wara tu kamap olsem rot blong givim pis-abus, ples blong waswas, digim na painim gold, na bikpla samting tru em space blong ol meri bung ol yet na lap long wanwan dei. Ol meri tu painim gold na baim kaikai, kolos, marasin, skul fi, na haus. Dispela

em key/important tru long single meri, widow na meri husait man blong ol ino save sapatim ol gut.

To identify whether the importance of the Wafi River might be recognised in the WGEIS we target-read relevant chapters/volumes featuring discussions on rivers and social impact, and performed electronic searches of the term ‘wafi-river’. All identified references are presented in the Table 1. There were no additional mentions of consequence in either of the Mine Closure, Cultural, Environmental or Social Management Plans.

Long luksave long importance blong Wafi Wara insait long WGEIS mipla lukluk rit igo insait long ol chapters/voumes karamapim ol discussions long wara na sosel impact, na mekim electronic search long painim ‘wafi wara’. Olgeta ibin kamap istap long Table 1. Nogat additional toktok blong bagarap istap insait long Mine Closure, Environmental or Socail Management Plan.

It is hard to compare the two accounts. The Community stories demonstrate the lived importance of the Wafi River, which perform many functions essential to the human flourishing of the Venembeli Community. The synopsis above, along with those statements and stories in previous articles also identifies a relationship with the land that is more than practical use also but provides evidence of values based on other worldviews. In contrast, the WGEIS recognises the importance of River as a site of alluvial gold mining but with none of the stories about its value to mothers and vulnerable women or its role in the formation of relationships and the social reproduction of the Village. The conflict between these two descriptions is real, with unseeing WGEIS descriptions incapable of identifying or understanding impact from a Community perspective.

Em hard long skelim tupela accounts. Stori blong Kominiti soim klia importance blong laip blong Wafi Wara, we em save givim plenty samting long inapim gutpla sindaun long Venembeli Kominiti. Stori long antap kamapim ples klia relationship wantaim graun em igat moa lukluk long praktikol wok na givim evidens blong value o namba long arapela save blong autsait. Na long skelim WGEIS luksave long importance blong Wara olsem ples blong alluvial gold maining tasol nogat stori long value blg wara igo long ol mama na trangu ol meri o wok blong em long bungim ol relationship na kamapim moa manmeri long ples. Hevi namel long displa tupela discribim em tru, na ino lukim WGEIS stori luksave long hevi blong manmeri o lukluk blong kominiti.

Table 1. References to social values of, or impacts on Wafi River in the WGEIS

Chapter	WGEIS page reference	Description of reference to Wafi River (WR) in text (not in maps/tables)
8. Physical and Biophysical Environment Characterisation	8-6, 8-23, 8-30	Geophysical and study area descriptions

12. Socioeconomic characterisation	12-21	Alluvial gold mining among Tier 1 (closest to mine) villages, more common on WR
	12-25	Existing gardens causing sedimentation of WR, mention of WR as site for washing
13. Cultural Heritage	No mention	
18. Socioeconomic IA	18-23	Expected sedimentation of the Wafi River deemed to be minimal and expected to progressively decline within 18-24 months
	18-24	Residual (no time span given) effect of sedimentation on freshwater assessed as low for the WR
	18-24	Residents of Nambonga, Hekeng, Venembele and Pekumbe may need to find new sites for alluvial gold mining
19. Health Risk A	19-25	Likely timeframe for contaminated water to reach the Nambonga Creek and WR has not been estimated, but reasonable expected to persist for 50 years following mine closure
	19-30	Treatment of contaminated water from seepage and/or crater lake overtopping discharges to the WR System to meet water quality criteria prior to discharge to the environment and until such time that closure objectives are met.
20. Cultural Heritage IA	No mention	
App. T Socioeconomic baseline	p.76, p.78	Alluvial mining methods and frequency in the WR. No outsiders engaged in alluvial mining in the WR, methods of mining.
	p.111	WR catchment details
App. U Cultural Heritage	p. 63	Wire bridge as a historical site
App. W Human Risk	p.14, 16, 19	Environmental, catchment and village descriptions
	p.29, 30, 83, 60, 61, 86, Table D	Study scope, details of assessment points similar data to 19-25, contaminant concentration levels, source data table
	p.41	Details importance of rivers generally for fishing, washing and alluvial mining
	p.118	Poor quality of groundwater feeding ER post mine closure – potential direct and indirect health affects likely to be significant

6.3 Settlement History

The WGEIS ambitiously sets out to record the settlement histories of the potentially affected Communities. Here we address only the settlement history of Venembeli, also spelt Venembele. The WGEIS describes how “[T]he people from Venembele originally came from Parakris in Zenag (Mumeng) and initially settled in the two villages upstream: Pokwana and Zilani. They settled in Venembele within the last 40 years” (12-17). This account of settlement

history, which is incompatible with accounts from the Venembeli Community, is unsupported apart from reference to unpublished and inaccessible social baseline studies.

6.3 Histori bilong Sindaun/Settlemen

WGEIS laik mekim wok blong em luk gut na putim long record stori blong settlement blong Venembeli, na spelim Venembele. Wafi Golpu Environment Impact Study (WGEIS) describim how “ol pipol blong Venembeli ikam olsem long Parakris long Zenag (Mumeng) na sindaun tupela ples istap long het wara: Pokwana na Zilani. Ol settle long Venembeli insait long las forpela ten krismas” (12-17). Dispela histori blong settlement ino stret wantaim Venembeli kominiti, em nogat sapot long referens long baseline stadi we em ino published na people ino gat kopi.

The Community’s account of settlement is complex and recounted by several individuals over multiple visits with similar details providing validation. The settlement path to Venembeli, which was originally a seasonal hunting area from the early 1900s, can be traced from movements from the settlements of Touvil and then to Arkay during WW2, a significant event that enabled more precise dating of settlement patterns. Prior to WW2 and before permanent settlement, the Venembeli site was used for two to three months a year to access fresh hunting grounds. Due to problems with water access in dry seasons and steep hillsides the Community moved from Arkay to Venembeli, which had the bigger Wafi River and more reliable sources of drinking water. By the early 1950s there was a permanent settlement at Venembeli with additional Community and family members moving there in subsequent years. In the 1960s artisanal gold mining was firmly established at Venembeli and since then has been the major source of cash for the Community. While some details may vary, we believe the settlement *stori* indicates historic connections to Venembeli with a permanent occupation 20 to 30 years longer than stated in the WGEIS.

Stori bilong kominiti settlement em plenti mekim wankain stori em stret. Na settlement blong Venembeli bin stat olsem ples blong painim abus long early 1900s, na ol ken tracim ol wakabout blong ol long Touvil na bai Arkay long taim blong WW2, we em klia taim blong settlement pattern. Bipo long WW2 na bipo long kamapim permanent settlement, Venembeli em ol usim long tupela o tripla mun insait long wanpla yia long painim abus long nupela eria. Wantaim hevi blong wara long taim blong dry season na ples maunten ol Kominiti muv long Arkay igo long Venembeli, we bikpla Wafi Wara istap long dring wara. Long early 1950s ples kamap pinis long Venembeli wantaim Kominiti na family membas bung wantaim. Insait long 1960s wok blong painim gold kamap strong na komoniti mekim Venembeli kamap Ples na em kamap ples blong kisim moni blong Kominiti. Sampela stori bai ino klia, mipla bilip settlemen stori soim strongpla connection blong Venembeli wantaim longpla taim ol sindaun pastaim long 20 o 30 yia moa long WGEIS.

This inconsistency between settlement accounts was revealed during fieldwork as we sat and *tok stori* with the Community, which included looking at our digital copy of the EIS. The senior male leaders were angry at the account in the WGEIS and asked us how WGJV could be

allowed to write ‘such rubbish’. This is not a simple or meaningless error, as by describing the settlement time as after mining exploration, the mining company is making a claim (as has happened verbally) that the Venembeli Village is only there because of the proposed mine. While unable to determine all the reasons for the different settlement accounts, many of the IA challenges outlined above, along with inappropriate Community engagement methodologies could all contribute to the dramatic inconsistency between local knowledge and what is presented in the WGEIS.

Dispela nogat stretpela stori blong settlement kamap klia long fieldwok na mipela sindaun na mekim *tok stori* wantaim kominiti, na mipla lukim digigal kopi blong EIS. Na bikpela lidaman ples ples ol belhat long ripot insait long WGEIS na askim mipela how WGJV bin kisim tok orait long husait na raitim “kain rabis”. Dispela em ino liklik o samting nating long tok settlement ikam insait bihain long main exploration, maining kampani mekim tok oslem (toktok long maus) Venembeli Ples em istap bikos long main bai kamap. Taim mipla ino bin luksave long olgeta reason (ass) blong wanem settlement kamap, plenti hevi blong AI kamap antap wantaim nogat pasin blong gutpla Kominiti wokbung na dispela kamapim no stretpla tingting namel long save blong ples.

6.4 Determining risk assessment

There were a number of impacts recognised in areas very important to individual and collective identity, the role of women and human flourishing: impacts that are also important to cultural identity and social cohesion which are an integral part of village-based life. Four of these impacts, with the proposed *management response* (in italics) and residual risk assessment are paraphrased and presented below (WGEIS table ref and volume-page in brackets).

6.4 Skelim Nogut/Risk

Igat ol namba blong impact kamap klia na em moa important long wanwan na olgeta long luksave long wok blong ol meri na gutpls sindaun, dispela ol impact tu em important long kastom na manmeri instap insait long ples. Foapela blong dispela impacts wantaim tingting bling kam behain, management bekim (italics) na assessment blong nogut/risk em istap aninit (WGEIS table ref and volume-page istap long bracket).

1. High initial significance for life of mine was attributed to disruption to existing cultural ties (s72, 18-68) for life of mine (LofM). *The proposed management measure was to respect existing local ties, traditions and sense of place and to be fair and transparent in land access.* The impact deemed to be of unlikely/moderate/moderate residual significance.

Bikpela as tingting em long laip blong mine na dispela bai bagarapim kastam sindaun blong manmeri (s72, 18-68) long laip taim blong mine (LofM). *Na plen management measure em blong respectim lokol ties, kastom nap les na fair na transparent long kisim graun.* Na dispela impact luk olsem ino liklik.

2. High initial significance for LofM was attributed to disruption to sense of place (s28, 18-61) due to disturbance or restricted access. *The proposed management measure was to respect existing local ties, traditions and sense of place and to be fair and transparent in land access.* Impact deemed to be of possible/minor/moderate residual significance.

Bikpela bagarap blong Laip blong mine em long rausim manmeri long ples blong ol (s28, 18-61) long disturbance or Nogat Entry. Na management plen em long respectim ol lokol, kastom na ples ol istap na long mekim fair na transparent long usim graun.

3. High initial significance for life of mine was attributed to a reduction in social cohesion (s73, 18-65) for LofM. *The proposed management measure was to manage compensation obligations and to variously establish, engage and facilitate capacity development, build social capital and support local enterprise measures in the Community.* Impact deemed to be of possible/minor/moderate residual significance.

Bikpla astingting em long laip blong mine sut long daunim strong namel long manmeri (s73, 18-65) long laip blong Mine. Na Management plen long compensation na engage na facilitate capacity divilopmen, long buildim manmeri na saptim lokol bisnis insait long kominiti.

4. Very high significance was attributed to an increase in domestic responsibilities for women (s31, 18-62), but inexplicably, this was deemed to be only during construction despite the mine offering on-going direct and indirect employment and other economic and social disruption. *The proposed management measure was consultation and individual and community capacity development (see 18-51).* Impact deemed to be of likely/moderate/high residual significance.

Bikpla as tingting em long increasim wok blong domestic igo long meri (s31, 18-62), tasol displa bai kamap long taim blong construction, maski mine offerim wok igo direct na arapela ikonomic na sosel disturbance. Na Management plen em toksave na wanwan na kominiti training divilopmen (see 18-51). Impact em klostu namel/antap.

Despite the potential significance of (1) disruption to cultural ties, (2) loss of sense of place and (3) a reduction in social cohesion, none of the three risks were deemed to have more than moderate residual significance in the WGEIS risk assessment. The assessed significance of all three risks was decreased from the initial impact due to assumed outcomes from the proposed management responses (shown in italics above) such as respect, transparency, engagement and management of compensation. While linked to management plans, little detail was provided on the reason for the risk assessment and on how different responses would be designed, implemented and assessed throughout the LofM. Without detail or supporting documentation we are unable to elaborate on or further analyse the risk assessment processes or whether the responses would work.

Na bai igat moa (1) bagarap kamap long rot blong kastom, (2) luksave blong lusim ples (3) daunim strong blong manmeri wokbung, nogat wanpela blong tripela hevi luk moa namel o balance kamap klia insait long WGEIS risk assessment. Stong blong skelim olgeta tripela risks em bin igo daun long stat blong impact bikos long tingting blong outcome o kaikai blong wok blong plen management (soim long italics antap) olsem respect, transparency, involvim na managmen blong kompensen. Na dispela sut long management plen, liklik ripot kamap antap long astingting long skelim risk na long how narapla ol bekim bai designim, mekim kamap na wok skelim bai wok.

Of the four risks above, the only risk deemed to be high was (4) increased work for women to be addressed by WGJV "...implement[ing] proactive measures to promote gender equity" (18-51). It remains unclear how an outside agency (WGJV) can implement measures adequate to the challenge of gender equity in PNG. Also, the risk was assessed for the mine construction only, which seems unrealistic in light of other factors, such as the other three above, liable to trigger extensive social fragmentation due to impacts and outcomes from both intentional and immanent development. Without adequate explanation and evidence-based justification, these risk assessments seem uninformed responses from anonymous or unaccountable authors who, unlike the Community, bear none of the risk of the mine's failure.

Long foapela risk o bagrap antap, na wanpela risk istap antap moa yet em (4) apim moa wok blong ol meri imas kamap long WGJV "...kamapim ken arapela rot blong (gender equity) meri tu igat wankain luksave long PNG. Na risk o hevi ol skelim em blong construction blong mine tasol, dispela ino inap long kamap tru long sampla reason, olsem tripela antap, dispela givim bikpela pasin bruk namel long manmeri bikos long impats na outcome (kaikai) blong wanem samting ol min long mekim na divilopmen blong nau. Nogat gutpela explanation na evidens long sapatim, ol skelim hevi em ino wankain o equal, ikam long husait raitim ripot, na ino Kominiti.

7. Concluding Discussion - combining the elements: local, national and international

Above we described social impacts from mining in PNG and then explored international IA theory and practice to inform an in-depth look at components of the WGEIS, providing observations and experiences from different scales to better understand how IA is, and might be practised. While each section offers its own insights, here we combine some elements to allow a critique of the WGEIS and make a contribution from the authors and Communities to how IA is understood and practiced.

7. Pinisim Tok-bungim save: local, national na internation

Antap mipla discribim sosel impact long main insait long PNG na painim international IA save/theory na practis long tokaut moa igo insait long WGEIS, providim luksave na experiens ikam long arapela level long save gut long IA, na how em bai wok. Taim wanwan section givim lukluk long hia mipla bungim sampela key points long kirapim tingting blong WGEIS

na mekim contribution ikam long husait iraitim (authors/Communities) long kliaim tingting na how IA wok olsem wanem.

7.1 PNG and Wafi-Golpu

PNG's mining experience has been mixed, with positive development contributions overshadowed by a failure to deliver improved wellbeing for the majority of PNG citizens (Banks, 2014). As outlined above, we can see how particular impacts, such as incompatible ideas about land ownership and the gendered exclusion from decision-making and benefit-sharing have challenged and marred the extractive industry in PNG from before independence. There are also questions of transparency and legitimacy, with the power of '*faceless corporations*' determining peoples' futures, the direct opposite of power sharing modes seen as the key to reforming industrial mining. From this we can characterise the WGEIS community engagement as consultation with limited influence over scoping, evidence generation or significance, with exclusion at each stage a considerable barrier to meaningful community involvement, reducing the effectiveness and credibility of the IA. This is not a positive finding for PNG's mining IA system.

7.1 PNG na Wafi Golpu

PNG igat mix mining experiens wantaim failure karamapim gutpla divilopmen kontribusen long givim gutpla sindaun blong majority blong PNG manmeri/citizens (Banks, 2014). Olsem istap long outline antap, mipela ken lukim how dispela impacts, olsem laipsave ino isi long separatim wantaim graun na manmeri na meri ino gat luksave na namba long mekim disisen na serim benefit challengim ol divilopmen blong kamautim risos long PNG bipo long independens. Igat tu askim blong transparency na gutpla astingting wantaim pawa blong ol kampani ino gat trupla face mekim disisen blong bihain taim/future, stret agensim pasin blong serim pawa olsem key blong reform o senisim mining indastri. Long dispela mipela lukim WGEIS kominiti engagemen olsem consultation em gat liklik influens antap long scoping, kamapim evidens o important, wantaim exclusion/rausim long namel rot na blokim kominiti long involve gut, daunim gutpla wokbung na credibility blong IA. Dispela wok painim aut em nogut blong PNG mining IA (Impact Assessment) system.

Also evident is a desire for development, though these goals are obstructed by unintentional impacts and the potential for negative unplanned development. This is not an isolated case, with mining central to Prime Minister Marape's 'take back PNG' discourse, which is reminiscent of conflicts between *Buen Vivir* and extractivism in Ecuador. Here differences in language and understandings are critical, with misunderstandings and multiple interpretations magnified by the forty years the Wafi Communities have been waiting for development. Roads, for example, are imagined as a means to achieve a western lifestyle whereas in practice they are problematic - with a lack of Community access to mine roads, roads as a source of uncontrolled immigration and the fact that the Village access roads are only proposed, not guaranteed in the WGEIS. This creates confusion about mining's development potential, aptly described by Bridge as the "...*alchemic transition of mere dirt into wealth beyond the dreams*

of avarice...” and further undermines and complicates conversations that see and respect different ways of living that are required to understand and mitigate extractive impacts.

Na kamap klia em diman blong divilopmen wantaim ol goals bump wantaim impacts ino istap long plen. Dispela case in istap blong em yet wantaim Mining istap stret namel long tingting blong Prime Minsita Marape “take back PNG (Kisim bek PNG),” na dispela em birua wantaim BuenVivir/gutpla sindaun na kamautim risos long Eduador. Hia em narapla long tokples na tingting em critical, wantaim nogat gutpla klia tingting na plenti skelim lukluk insait long forty yias Wafi Kominitis waitim dispela divilopmen. Rot long example ol imaginim olsem long kisim western lifestyle na long practise displa em problem-wantaim nogat rot igo long mine, rot mekim isi long (immigration) man blong autsait ikam na trupla em ples access rot em proposal tasol, ino gat guarantee istap insait long WGEIS. Dispela kirapim confusion long mining divilopmen potential, na Bridge discribim olsem “... *alchemic transition of mere dirt into wealth beyond the dreams of avarice...*” na igo moa yet em lukdaun na mekim hard liklik long toktok na lukim na respectim arapela rot blong sindaun long save gut na traim long daunim bagarap ikam long riosis divilopmen.

In justifying the mine based on its future contributions to the PNGSDP goals and the well-being of PNG, the WGEIS avoids many complexities and the proven inability of industry or state to deliver development outcomes for all. Also apparent is a difference between Community *stori* of the River and the WGEIS assessment, even though we could only present their *stori* in brief. If shared and understood more fully the relationships nurtured and wellbeing provided by the River and the surrounding ecosystem would reinforce the inadequacy of the risk assessment process that fails to properly see or value local ways of being, or to protect vulnerable groups.

Long justifyim mine sanap long contribution blong bihain long PNGSDP goals na well-being blong PNG, WGEIS abrusim plenti issues na soim em yet klia em nogat gutpla rekot long industry o state/gavman long bringim kaikai blong divilopmen long olgeta. Na kamap klia em Kominiti stori blong Wara na skelim blong WGEIS, na mipla ken prsentim sotpla stori blong ol. Sapos serim tingting na klia gut long relationship na gutpla sindaun istap wantaim Wara na wanem samting istap wantaim (ecosystem) bai kamap ples klia nogut blong risk assessment, displa em failim long givim tupla lukluk/save o value o luksave long pasin blong sindaun, o long sapotim na protectim grup husait bai isi long bungim hevi.

But our review was also limited, and by no means a comprehensive assessment of the entire WGEIS. Indeed, our focus was pre-determined by areas of concern raised by participant action research with the Community. So, in deliberately seeking out problem areas in the WGEIS it is possible these results are not indicative of the wider IA process, although there are additional issues raised by Communities that we were unable to address here. Meaning our review is an indicative rather than a representative sample, that nevertheless raises significant issues that question the quality and validity of the WGEIS. As an IA, the WGEIS fails to provide a credible assessment.

Tasol lukluk blong mipla istap long mak na bikpela wok skelim blong dispela WGEIS. Tru, mipela lukluk long eria blong wanem concern kirap long participant action research wantaim Kominiti. Na mipela min long lukluk igo aut long eria blong hevi insait long WGEIS, displa em isi long result ino istap ples klia long eraia blong IA process, bin igat sampela issues ol Kominiti raisim we mipela ino inap long fixim hia. Em min olsem views o tingting blong mipla em i soim/indicatim na ino makim sample, tasol kirapim issue o hevi questionim/askim long quality na validity blong WGEIS. Olsem IA (Impact Assessment) dispela WGEIS fail long givim credible o stretpela assessmen.

In sum, we can see common social impacts from mining in PNG that are affected by, and raise questions about, international IA theory and practice, which in turn influenced how the WGEIS was conceptualised, designed and performed. Meaning that many of the challenges are not specific to the proposed Wafi-Golpu mine but are instead relate to IA as a practice and are affected by structural forces and ontological biases. This in part explains, but does not resolve the significant issues of credibility, with untested or unsupported statements, a lack of transparency and an absence of the local people in the WGEIS. Indeed, rather than multi dimensional beings in relationship with each other, the environment and time, the communities described in the WGEIS appear barely two dimensional – merely management problems to be solved with consultation plans and capacity building.

Long sotim tok: mipela ken lukim klia sosel impacts blong main long PNG kirapim askim long international IA theory (save na praktis) na practice) na dispela tanim bek influensim how WGEIS bin kamap, olsem save pepa, disignim na mekim em kamap. Em olsem plenty blong ol challenges em ino sut stret long proposed Wafi Golpu Mine tasol ol relate o connect long IA olsem practice na dispela em affected by structural forces na ikam long antap level blong tingting. Dispela explain long part, tasol em ino stretim bikpela hevi o issues blong credibility (luksave) wantaim ol untested or statements nogat support, nogat transparency na ol lokol pipol ino isatp insait long WGEIS. Tru tumas, olsem plenti kain rot blong luksave long sindaun blong manmeri connect wantaim environment, time, kominitis we WGEIS describim olsem tupela dimension/side; managemen problem long solvim wantaim consultation plen na capacity building.

7.2 Reforming IA theory and practice

Our exploration outlines IA's Western basis and bias, and questions whether the results can claim to be ethical. Importantly, this is not an anti-Western or anti-European sentiment, but a true recognition and valuation of plurality, which includes both Indigenous and Western ways of seeing the world. Rather, it is an assertion that the current IA and development processes is but one way of seeing and being in the world and that the decolonising of development and IA requires a sharing of power, including an acknowledgement of and correction to the various asymmetries that dominate extractive relations today. Such a process is critical in achieving development in keeping with the Melanesian Way.

7.2 Senisim gen IA theory (save) na praktis

Wok painim aut blong mipla kamapim ples klia IA Western basis na bias na questionim sapos displa ol result em ethical/stretpla. Moa yet long en, dispela em ino wanpla challenge agensim Western or European hevi, tasol trupela luksave na value blong plenty, dispela holim pas tupela wantaim em Indigenous (lokol) na Western (autsait) pasin/ways long lukim world. Olsem em kam klia long current IA na rot blong divilopment em go wanpla rot blong lukluk na decolonisim divilopmen na IA imas sharim pawa, displa includim acknowledgement o luksave na stretim ol kain hevi kamap pinis controlim rausim risos blong lokol kominiti blong nau. Kain ol rot em critical long kamapim divilopment usim Melanesian Way.

CBIA is offered as an example that involves communities and respects local and Indigenous knowledge, but we further propose a more comprehensive mining ethic that empowers and supports community-controlled IA that deliberately prioritises human flourishing. Such a transition would require IA processes to reflect Community development aspirations and plans rather than just responding to a mining proponent or project-focused IA. In terms of reforming current IA, we see much in this assessment of the local that could inform IA theory and practice; one idea would be to overcome ethical reductionism within IA to ensure that an overall project assessment is not less ethical than the sum of its parts.

CBIA (Kominiti Base Impact Assessment) em kamap olsem example blong involvim ol kominitis na rispektim ol lokol na save blong ples, na mipla igo moa na proposim igo insait tru long mining ethic dispela save givim pawa na saptim control istap wantaim kominiti-IA proses em must sut long Kominiti divilopmen tingting na plen na ino bekim igo long mining lain o project focus IA. Long lukluk long IA nau, mipela lukim moa igo insait long wok skelim blong lokol iken tokaut long IA theory na praktis; wanpla idea em long stretim ethical luksave insait long IA prject assessment em ino gutpla long bikpela lukluk.

We acknowledge that recognising a variety of knowledges could be challenging for both the mining sector and IA theory and practice as it sits uncomfortably with their positivist foundations and scientific orientation. Indeed, just as some in industry are still coming to terms with acknowledging cultural difference in ethics and practice, this IA growing awareness of ontological plurality demands not just respect for difference, but for equivalency. In relation to our work above, we are well aware that the *stori* shared with us over the research project is just a small segment of life, a slither of knowledge shared because it relates to how the team and Community saw the mine. But we also know we have yet to hear or uncover *stori* of local ontologies that were not prompted by this externalty imposed development.

Mipela luksave na wok painim aut ol kainkain save iken challengim mining sector na IA theory na praktis ino sindaun gut wantaim gutpela tingting na scientific pasin. Tru sampela indastri wok long luksave long cultural differens long ethics na practice, dispela IA awareness em bikpela save tingting em nidim respect na kamap equal o wankain level. Long wok painim aut antap, mipla save gut olsem stori kominiti serim wantaim mipla insait long research project em liklik hap blong laip, haphap blong save ol serim bikos em relate long how tim na Kominiti

skelim o lukim mine olsem wanem. Tasol mipla save tu olsem mipla igat wok yet long harim o painim out stori blong lokol save istap pinis na ino kamap bikos long autsait divilopmen.

It could be argued that a better IA process would be able to identify, describe and manage relationships that are unfamiliar to, and unseen by the IA investigators. This would suggest that although the WGEIS is flawed and at least partially blind to local values and experience, which a better IA would not be. In short, IA processes are fine, the flaw is in their execution. Part of our response to this self-identified critique, is yes, perhaps that is possible. But we also suggest that at a minimum, an acceptance of the possibility of different ways of living is required to implement methodologies that can see experiences and relationships from outside a Western perspective; even more so if an IA team is dominated by scientists or convinced of the accuracy of current IA assessment processes and prepared to merely recreate them. While assuming that they are adequate to protect PNG communities from unseen and multigenerational impacts. It seems fitting that IA, which seeks to reduce impacts and improve outcomes for communities, must hear and learn from the plethora of Southern voices to become capable of truly recognising how different Community have their understanding of human flourishing.

Long argue, gutpla IA process imas kamapim na discribim na managim relationship ol ino klia gut long em, na ol IA investigator ino bin lukim. Dispela tokaut olsem WGEIS em igat asua o ino stret, ol aipas long local values na experiens. Long tokaut stret; EIS proses em orait, hevi o asua em long mekim kamap. Hap blong bekim blong mipla long wanside critique em yes iken o possible. Tasol mipla ting tu long mak tamblo, na luksave long arapela rot blong sindaun na usim ol methods o rot blong lukim experiences na relationship autsait long Western view o lukluk. Sapos IA tim blong ol scientist convince long stretpela blong IA process long protectim PNG Kominitis long wanem pagarap ol bai bungim em “unseen na multigenerational impacts” Em bai fit olsem IA bai daunim impacts na improvim sindaun blong kominitis. Mas harim na lainim long arapela experiens blong area ples graun (Southern voices) long luksave tru how arapela Kominiti igat save blong gutpela sindaun.