

Welcome to New Canaria



Citizens Jury hosts:
Tanya Burdett –
tanyaburdett@essentialplanning.eu

Jack Krohn –
jackkrohn@gmail.com

Whose canary in whose coal-mine? A Hypothetical

- Agenda / approach
- Materials on tables – process flow chart, proposal brochure, worksheets for ‘jurors’
- The Charge (task): **“to identify and assess environmental indicators that might tell different stories to different stakeholders.”** Key tasks:
 - Whose is the river? How can it serve different purposes for different people? **See Worksheet no.1**
 - What is the best measure or “indicator” of the river's health? **See Worksheet no.2**
 - **Prioritise / make recommendations** (green dots for preferred, red dots for least preferred)

New Canaria is a small developing country with one major waterway, the Grand Canaria River, which is geographically, culturally and economically central to the country. Much of the population lives near-traditional, subsistence lifestyles, with many people living and working in riverside villages that communicate with each other primarily by canoe. The national government is stable and progressive, and is keen to improve the living standards of the people by diversifying the economy and bringing the fruits of prosperity to its constituents.

Already the government has allowed some industrial development in the country. This has included permitting a novel form of hydro-electricity generation, with purpose-designed turbines placed in the deep channels of the river to draw power from the natural currents, without impounding the water or disrupting natural flow patterns. So far this has not been shown to have had any adverse effects on any of the environmental indicators that have been monitored.

The government has also welcomed interest in eco-tourism, with some of the country's endemic species, especially the Grand Canaria Freshwater Eel and the Grand Canaria Fishing Canary, attracting attention for international nature tourists. Businesses have sprung up in key locations along the river, providing employment and income for villagers through hospitality and guiding businesses. Although the Eel and the Fishing Canary are the charismatic drawcards, visitors find that the other wildlife along the river as well as local cultural elements such as artworks and music make for an enriching and memorable experience. But if it weren't for the Eel and the Fishing Canary, they probably wouldn't bother to come at all.

What little is known of the ecology of the River is complicated. It is known that the juvenile Eels (which are speculated to perhaps spawn at sea) rely on riverside mangrove forest for shelter and foraging in their early months. They have a limited tolerance to changes in water temperature and only occur where the water is clear; they avoid areas of higher turbidity. This is the phase of their lifecycle during which they are prone to predation by the unique Fishing Canary, a migratory breeding visitor that relies on the protein from the juvenile Eels to sustain its young during the breeding season. The Eels which outgrow the predatory capabilities of the Fishing Canaries undergo a change of diet themselves, from plant matter and insect larvae to fish, with the Grand Canaria Freshwater Catfish being a staple diet item. The ecology of the catfish is poorly understood, but it is thought to rely in particular on the deeper, faster-flowing channels of the river. However, no-one really knows what the catfish eat or where they nest.



New Canaria from above.
Photo by Adrian Arbib.



Near the mouth of the Grand Canaria River.
Photo by Gavin Newman.

Text by Jack Krohn. Logo, map and brochure design by Phil Krohn.
Photographs © Alamy Stock Photo.

New Canaria Optizite Mine Proposal

"Whose Canary in Whose Coal-Mine?"

IAIA 2018 Hypothetical

Tanya Burdett • Jack Krohn



The famous Grand Canaria Fishing Canary.
Photo by Jenny Krohn.



The upper Grand Canaria River.

Recently the New Canarian government has encouraged mining exploration, and has been rewarded by the discovery of a rich deposit of optizite, a rare mineral with an extraordinary range of properties and uses. Optizite can be used in mobile phones, shampoo, paté and even golf balls, replacing more expensive or more polluting natural or synthetic alternatives. It is indeed a wonder mineral, lending itself to being marketed as "best for everything". Optizite is cheaper to extract than unobtainium, easier to work than phlebotinum and more stable than wonderflonium.

The process for mining, processing and refining optizite is complex. It occurs in association with igneous sills intruded through specific forms of sedimentary rock. Deposits can be very rich but tightly confined. Separation of the mineral from the metamorphosed matrix that constitutes optizite ore requires very large volumes of water as the milled ore must be passed through several baths of diluted acid before the final product can be precipitated through a different chemical bath. The processing works best with chilled water, ideally at -8°C .

Mining generally occurs underground so surface works comprise pithead facilities, ore stockpiles, a milling and processing plant and a series of water treatment lagoons through which process water is passed before being discharged. Pollutants that might be contained in discharged process water could include residual acid, elevated levels of various metals that can occur in association with optizite and chemicals added to the water to help maintain a reduced temperature. While passing the water through a series of shallow ponds can help it to warm, the extent of ponds required to allow it to return to natural river temperature ($>20^{\circ}\text{C}$) would be prohibitive.

Stakeholder Groups



Government of
New Canaria

Panel Representative: Thato Shale

Mining will bring foreign investment, generate employment and earn export revenue to fund the improvement of basic standard of living for working New Canarians.

We will of course ensure that the proposal is rigorously assessed before it is approved.

NEW CANARIA MINING CO-OPERATIVE

Panel Representative: Martine Leman

Optizite is the greatest mineral discovery of the 21st Century. Its uses are too many and varied to list.

The NCMC has been developing an enviable track record for environmentally sustainable mining wherever we have been. The mine will employ many local people and indirectly provide jobs for hundreds more. The optizite mining process inevitably demands a water supply and generates some waste, but it is all environmentally benign and no problem.



Panel Representative: Candan Ergeneman

We have invested heavily in developing site-specific turbines that are placed low in the river where the currents are strongest, which through extensive research we found the Freshwater Eels avoid anyway.

Our project is ecologically sustainable and beneficial to the broader community of Grand Canaria, but our turbine design is dependent on low suspended solids and slightly acidic pH. If the mine is going to release waste into the river, what is the risk to our sustainable power generation?



Upper Canar
Traditional
Owners

Panel Representative: Philippe Hanna

The Grand Canaria River is not just part of our environment; she is a central figure in our community, a person, like the Ganges in India or the Yarra in Australia. We welcome the potential jobs, but not at the expense of the wellbeing of our mother the river.

The gods and ancestors of the Upper Canar people will have something to say about anything with the potential to affect the river, let alone that carries the risk of polluting it.



Lower Canar
Traditional
Owners

Panel Representative: Lerato Ratsoenyane

We are outside the mine's catchment area for jobs, but we are not beyond its effects. We rely on the river for water and for fish, especially the Grand Canaria Freshwater Eel. The eel is our totem and vital for almost everything in the villages. It provides food, its skin provides fabric for our unique artwork, its oil fuels our lamps, it represents the spirit of the river to us. Over the generations, we have found harmony and balance in harvesting the eel sustainably while caring for its population. If the eel suffers because of the mine, our physical and spiritual well-being are at serious risk.



Panel Representative: Patricia Rodrigues

We have built our businesses around the iconic Freshwater Eel and the endemic Grand Canaria Fishing Canary, which birdwatchers travel from all over the world to see. It is only found in the riverside thickets of freshwater mangroves that support the juvenile Freshwater Eels on which it feeds.

We are anxious because the Eel is very sensitive to water quality and only breeds when the water is warm and clear. If the mine waste affects the Eel population and hence the Fishing Canary population, it will damage our business, which sustainably employs local people in hospitality, guiding and interpretation roles.

What is involved in setting up the Citizens Jury?

- **Random selection:** [SEP] You're here at the table because of your unique view, demographics and perspective, and are literally our random sample!
- **Representative:** Jurors carefully selected to represent the public at large.
- **Informed:** “Witnesses” or our “Panelists” in the case of the New Canaria project, provide information to the jury on the key aspects of the issue, and to answer all jury questions
- **Impartial:** Witness testimony is carefully balanced to ensure fair treatment to all sides of the issue.
- **Deliberative:** jury deliberates in a variety of formats, is given a sufficient amount of time to ensure that all jurors' opinions are considered. Typically operates at Collaborate level, here is Empowered in making recommendations for monitoring – the government / proponent has committed to taking forward the mix of criteria the jury come up with today.
- **Recommendations** to the “decision-maker” (government / proponent in this case) and the broader public, final report, government / proponent response

Who are the stakeholders in the room?

- **Broad-based steering committee** – overseeing process and role of the jury; have provided advice on experts/witnesses and the question to be considered, and are represented by Jack Krohn
- **Facilitator** – to run the process, Tanya Burdett
- **Researchers** – to randomly recruit members of the public to achieve demographic mix
- **Local media** – invited and are likely to be here for some parts of the day. Please let them know if you have any queries or don't want your photograph to be taken when they arrive
- **Expert Witnesses / Panelists** and people with a 'stake' in the decision – those assembled today are the stakeholder groups and panelists as per the brochure.

New Canaria Mine proposal – program of works EIA stage

EIA process

(outline permission already granted – detailed EIA on specific impacts)

Scoping

Examination of alternatives

Impact analysis

Mitigation and impact management

Evaluation of significance

Preparation of environmental impact statement (EIS) or report

Decision making and approvals

Follow up

Consultation process

Project announcement

Information sessions and media briefing

Scoping consultation with regulatory authorities including local council

Consultation on community values with affected stakeholders, key regulatory authorities, wider community

Citizens Jury opportunity to set criteria comparison of alternative approaches, assessment of significance and proposed monitoring measures

Final informal consultation on draft proposal and emerging EIS findings

Formal consultation on proposal and EIS

Inquiry and public submissions considered

Consultation level

Inform

Consult

Collaborate
(Citizens Jury participants only, refinement of criteria for assessment / mitigation)

Consult

Consult

New Canaria Mine proposal – program of works EIA Follow up stage

EIA process

EIS preparation, consultation and consideration at independent inquiry

Proposed mitigation measures for Construction Environmental Management Plan (CEMP)

Approval

Consultation process

Formal consultation on proposal and EIS

Inquiry and public submissions considered

Consultation level

Consult

Consult

Inform

 **We are here**

Follow up

Confirmation of CEMP and Operational Environmental Management Plan

Monitoring, evaluation and reporting

Citizens Jury opportunity to set criteria for detailed monitoring and mitigation measures

Ongoing construction information updates

Empower
(Citizens Jury participants only)

Inform

Meet the
panellists /
expert
witnesses:

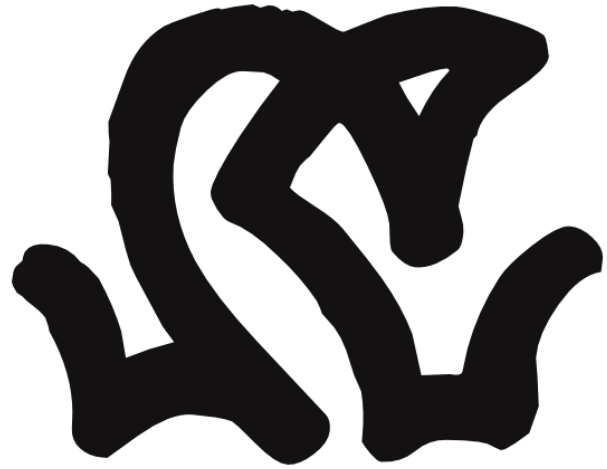




Government of New Canaria: Dr Thato Shale

**NEW CANARIA
MINING
CO-OPERATIVE**

Mining company: Martine Leman



Upper Canar Traditional Owners

Traditional owners: Dr Philippe Hanna

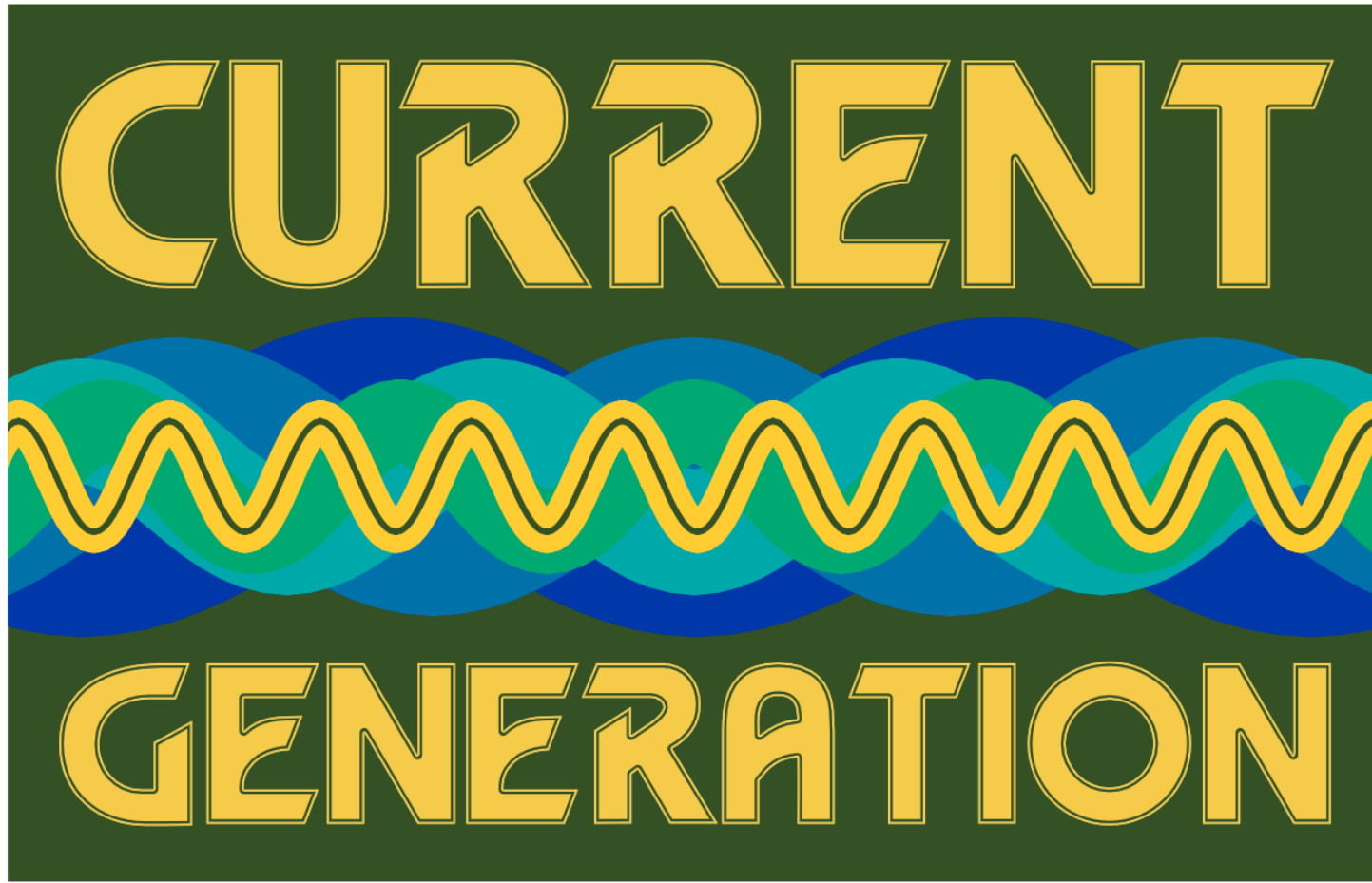


Lower Canar Traditional Owners

Downstream villages: Lerato Ratsoenyane



Eco-tourism operators: Patricia Rodrigues



Hydropower company: Candan Ergeneman


Worksheet 1 – river values

Table characteristics...	Who does the river belong to? If you're not sure, who do you think it should belong to?	How can the river serve different purposes for different people?
Table Participant 1 <ul style="list-style-type: none"> ● Age/range - ● Gender – M / F ● Local/regional/interstate / international visitor? (circle) ● Any other characteristics? 	Insert sticky notes with individual views....	e.g. habitat for fauna, flow for hydropower? DO YOU HAVE ANY QUESTIONS FOR THE 'EXPERTS' ON THE PANEL TODAY? IF SO, PLEASE LIST THEM HERE AND APPOINT A SPOKESPERSON TO ASK THEM
Table Participant 2 <ul style="list-style-type: none"> ● Age/range - ● Gender – M / F ● 		

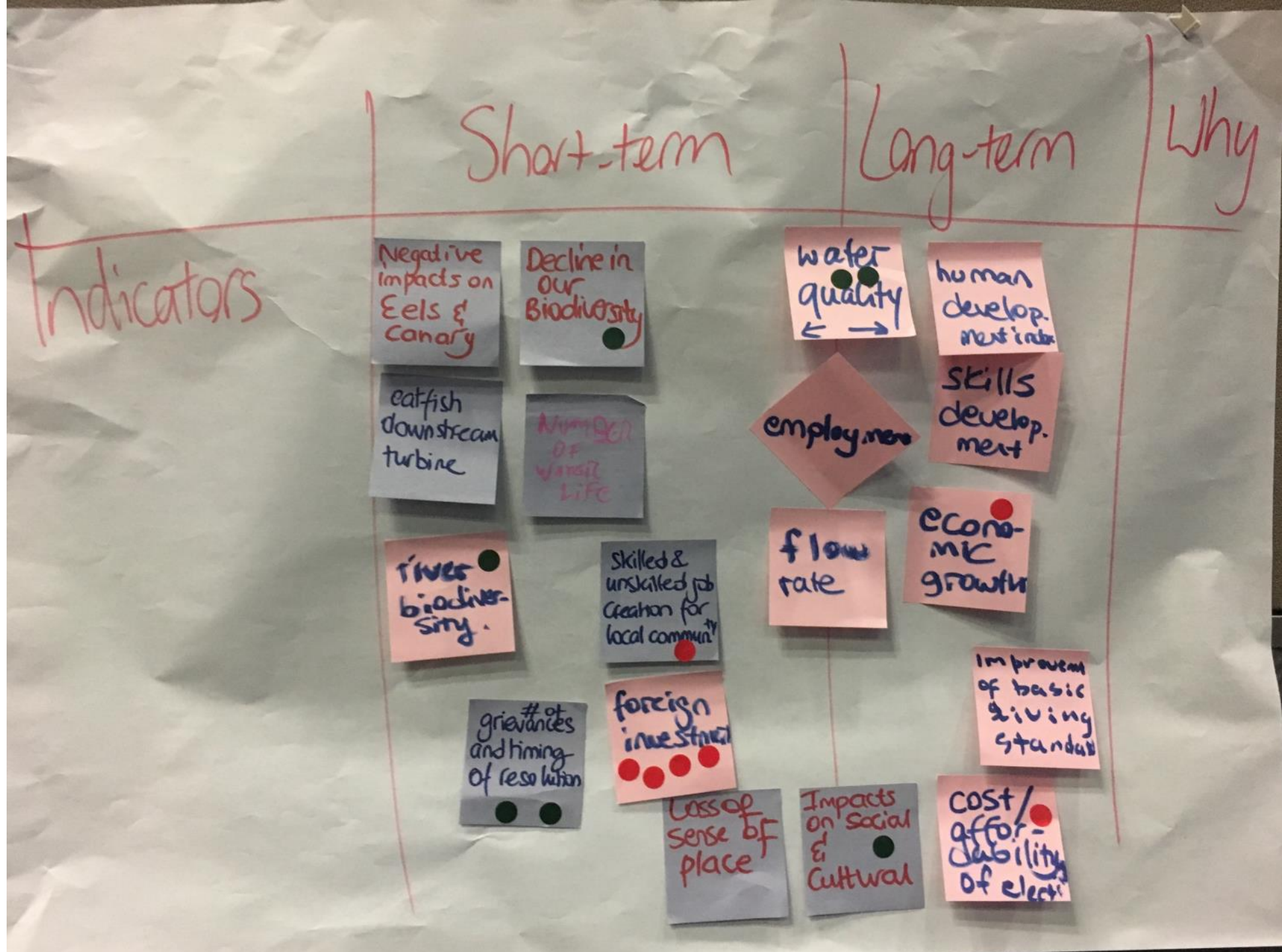
Worksheet 2 – preferred indicators

Table no.	Indicator short list –		
Indicator description / category e.g.water quality, temperature...	Short-term	Long-term	Why? Provide reasons this indicator is important....

Worksheet 2 – preferred indicators

Indicators	Short-term	Long-term
<ul style="list-style-type: none">• water quality •• water quantity • • • •• economic progress/state •• Biodiversity • • • •• social & spiritual • • • •• Population	<ul style="list-style-type: none">• pH Value• Temperature• rate flow •• jobs created •• skilled labour rate • •• species & habitat• Questionnaire happiness• well being	<ul style="list-style-type: none">• sediment• water scarcity •• employment rate• GDP • •
	<ul style="list-style-type: none">• economic distribution• population increase	<ul style="list-style-type: none">• monitoring & Trend Analysis 

Worksheet 2 – preferred indicators



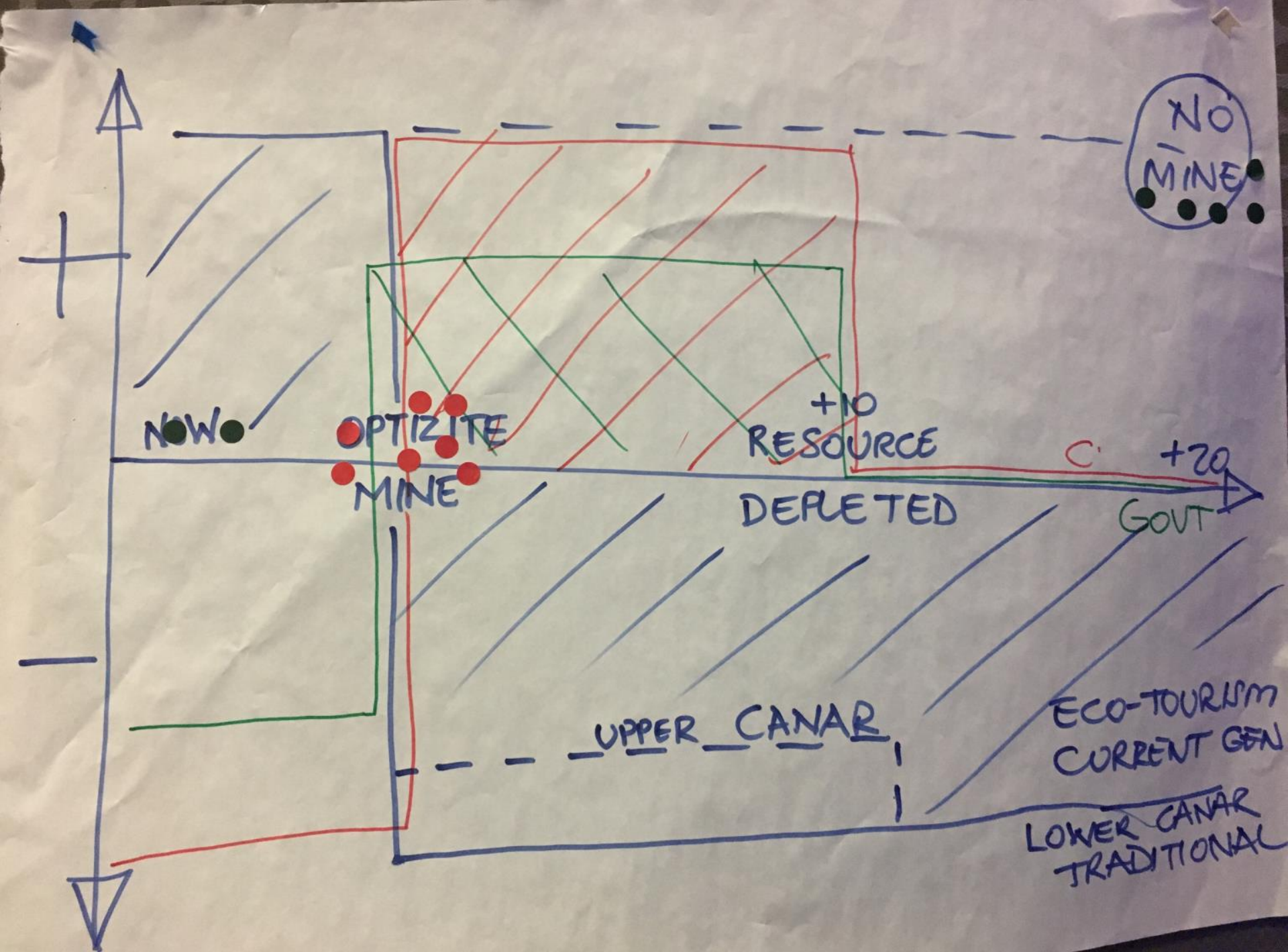
Worksheet 2 – preferred indicators

Indicators	Short-term	Long-term	Why
flow regime of river ●●●		① No interruption of flow regime	① why? Sustainability of the river system
Access to river ●●●		② Access to the river for local people	② why? It's our river!
Job creation ●●●		③ How many jobs created? ●	③ why? Because it promised jobs from the Govt
water quality ●●●	- ph ● - temp. ● - turbidity ● ✍		

Worksheet 2 – preferred indicators

	Short-term	Long-term	Why?
Indicators	<ul style="list-style-type: none">Water quality (surface, ground) ●Resettlement of communityQuality + Quantity of water ● ● ● ●Air Quality ● ●Job provision ● ● ● ●Quality of employment + Diversity (outside mine) ● ● ● ●Biodiversity protection ● ●Social incidents / accidents ● ●Infrastructure capacityWaste managementNoise + light pollutionSecular economy for allCorruption + Transparency ● ●	<ul style="list-style-type: none">Social and progress ●Cultural + heritage protection ● ● ● ● ● ● ● ●Water quality (surface, ground) ●Quality + Quantity of waterAir Quality ●Remediation + Rehab ●Biodiversity protection ● ● ● ● ● ●Corruption + Transparency ● ● ● ● ● ● ● ●	

Worksheet 2
– preferred
indicators –
Indigenous
group
approach to
mapping
short to
long-term
preferences



Panellists /
expert
witnesses
moving hands
to show low
to high level
of happiness
at start, mid
point and end
of project

(see also Workshop 2
outputs from local
indigenous group)







e to
aria



Worksheet 2 – preferred indicators (green dots preferred, red dots least preferred)

Indicators – short-term	Indicators – short term (some moving to long-term)	Indicators – long-term
Water quality (11 x green)	Water quality (surface, ground) (1 x green)	Sediment monitoring and trend analysis
Biodiversity (6 x green)	Resettlement of community	Water scarcity (1 x green)
Social and spiritual (3 x green)	Quality and quantity of water (4 x green)	Water quality (1 x green)
Population increase	Job provision (2 x green, 2 x red)	Impacts on social and cultural (1 x green)
pH value, oxygen level, temperature, pollution, rate flow (1 x green)	Quality of employment and diversity (outside mine) (3 x green, 1 x red)	Employment
Jobs created (2 x green)	Biodiversity protection (2 x green)	Flowrate
Species and habitat	Social incidents / accidents (2 x green)	Human development index
Questionnaire happiness wellbeing	Infrastructure capacity	Skills development
Economic distribution (1 x green)	Waste management	Improvement of basic living standards
Negative impacts on eels and canary	Noise and light pollution	Social progress (1 x green)
Decline in our biodiversity (1 x green)	Secular economy for all	Cultural & heritage protection (7 x green)
Catfish downstream turbine	Corruption and transparency (3 x green)	Water quality (surface, ground) (1 x green)
Number of water life	Water quality–pH (1 x green), temp (1 x green), turb.	Quality and quantity of water
River biodiversity (1 x green)	No interruption of flow regime. Why? sensitivity of the river system	Air quality (1 x green)
No. of grievances & timing of resolution (2 x green)	Access to river for local people. Why? Its our river!	Remediation and rehabilitation (1 x green)
Loss of sense of place	How many jobs created? (1 x green). Why? Because we were promised jobs from the government	Biodiversity protection (2 x green)
Flow regime of river (3 x green)	Access to river (3 x green)	Corruption and transparency (3 x green)

Worksheet 2 – least preferred indicators (red dots least preferred)

Indicators – short-term	Indicators – long-term	Why?
Economic progress / state (1 x red)	Employment rate GDP (2 x red)	
Skilled labour rate (2 x red)	Economic growth (1 x red)	
Skilled and unskilled job creation for local community (1 x red)	Cost / affordability of elects? (1 x red)	
Foreign investment (2 x red)		
Air quality (2 x red)		
Job creation (3 x red)		

Panellists /
Expert
witnesses
receiving keys
to New
Canaria...

