

Shared Mining Infrastructure: Too Good to Be True?

Land, Water, and Ecosystems

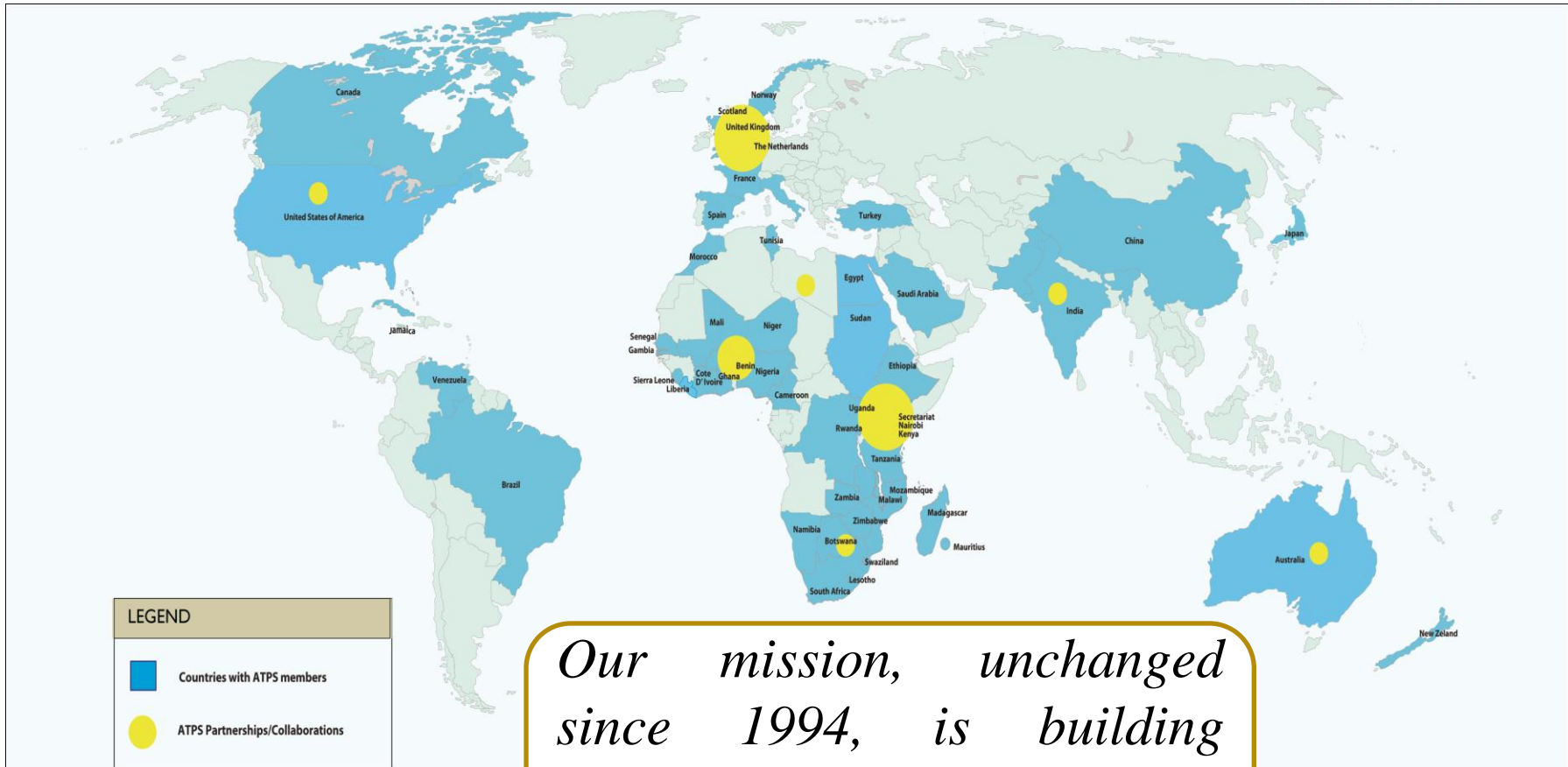
Prof. Kevin Chika Urama

Executive Director, African Technology Policy Studies Network (ATPS), &
Adjunct Professor, Sir Walter Murdoch School of Public Policy and International
Affairs, Murdoch University. kurama@atpsnet.org

Cape Town, Feb 2, 2014.



About ATPS



Our mission, unchanged since 1994, is building Africa's STI capabilities for sustainable development

**AFRICA
DOWNUNDER**



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AFRICA-AUSTRALIA RESEARCH FORUM

1:00 pm – 5:00 pm, August 30, 2011, Novotel Perth Langley

The recently tabled report by the Parliamentary Inquiry into Australia's Relations with the Countries of Africa identified a strong tradition of collaborative research activities between Australia and Africa across a broad array of scientific and social areas. This forum seeks to build upon this foundation and contribute to the ongoing dialog by bringing together academics, government agencies and the private sector to discuss a number of contemporary issues and opportunities in the mining sector.

**The interface between resources
and agriculture in rural Africa**

Murdoch University Discussion Paper

October 2013

Australia's Paydirt



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- ❑ Developed with partners: Australia's AID program, the Australian Centre for International Agricultural Research (ACIAR), the Australia-Africa Mining Industry Group (AAMIG), International Mining for Development Centre (IM4DC) Curtin University, James Cook University The University of Queensland, the Crawford Fund, the University of the Witwatersrand, the African Technology Policy Studies Network (ATPS), the Beira Agricultural Growth Corridor in Mozambique (BAGC) and the Coalition for Dialogue on Africa CoDA

4th Annual (September 2014) Africa Australia Research Forum

“Putting the pedal to the metal”

- How the extractives sector can contribute to accelerating sustainable regional economic development in the countries of Africa



The 5 Australian Development Research Awards Scheme (ADRAS) Extractive-based projects:



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Title	Summary	Organisation
How can mining and agriculture work together to provide equitable economic opportunities?	Harnessing natural resources for mining and agriculture is a key driver of global economic growth, transforming economies and societies in many countries...	Murdoch University
Using mining infrastructure for broader economic development	This project aims to develop an economically, legally and operationally rational framework to enable shared use of mining-related infrastructure (rail, ports, power, water, internet and telecommunications) ...	Columbia University
Using Mozambique's natural resource wealth to improve access to water and sanitation	This collaborative research project ...seeks to amplify evidence-based advocacy at national and provincial levels by analysing current efforts to increase access to water and sanitation...	Murdoch University
Developing policies to better manage mines, mine closures and mine abandonments	The project focus is to ensure the ability to manage environmental and social impacts of a mine from the outset and ensure capacity ... to undertake obligations of rehabilitation in affected environs to solve existing abandoned mine legacy issues...	Murdoch University
Human rights and the environmental impact of mining in Africa	This project examines the human rights and environmental impact of extractive industries in Africa taking into account the African Charter on Human and Peoples' Rights and the African Mining Vision ...	University of Pretoria



Land, Water and **Ecosystems**

New Machavie gold mine, S. Africa: Abandoned in 1940's



Kalgoorlie Superpit (gold mine), Western Australia



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The Superpit (3.5km x 1.5km, 570m deep) has engulfed much of former city of Boulder. Mining expected to end in 2016 – >50 million ounces of gold produced



What will be the social and environmental legacy?

Alcoa (bauxite) mining, W. Australia



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Rehabilitation of mined areas to restore 'Jarrah' forest - ongoing mining operations in a public-owned forest resource.

Sustaining Success

Alcoa Australia successfully re-establishes a self-sustaining jarrah forest on rehabilitated mine areas, such as this former mining area at the Huntly Mine. Alcoa Australia has created the richness of plant species equal to the surrounding forests - a strong example of Alcoa's commitment to sustainable development.

Mining Rehabilitation Fund Act 2012, WA:



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- ❑ Replaces former mining bond system – miners pay 1% of rehabilitation value into fund each year
- ❑ Any amount in fund can be utilised to rehabilitate a (newly) abandoned mine
- ❑ Interest earned on fund is used for clean-up of (old) abandoned sites

Can a similar policy approach be adopted in an African context?

What other creative research and technology can be applied in this context?



New Machavie gold mine, S. Africa:
Abandoned in 1940's - Waste dumps eroding/washing into the river.



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Land, Water and Ecosystems

Driving policy innovation in mine closure and abandonment management, environmental risk mitigation, and rehabilitation of abandoned mine sites as a pro-development strategy, Principal Investigator, Assoc. Prof. Angus Morrison-Saunders

Can mine closure policy innovation in Western Australia enhance practice in an African context?

Focus: Ghana; Kenya; Mozambique; Nigeria; S. Africa; Tanzania; Zambia

Collaborators:

Dr. Hudson Mtegha,
University of the Witwatersrand, S. Africa

Dr. Phil Gorey,
Dept. of Mines and Petroleum, W. Australia,
Adjunct Assoc. Prof. Murdoch University



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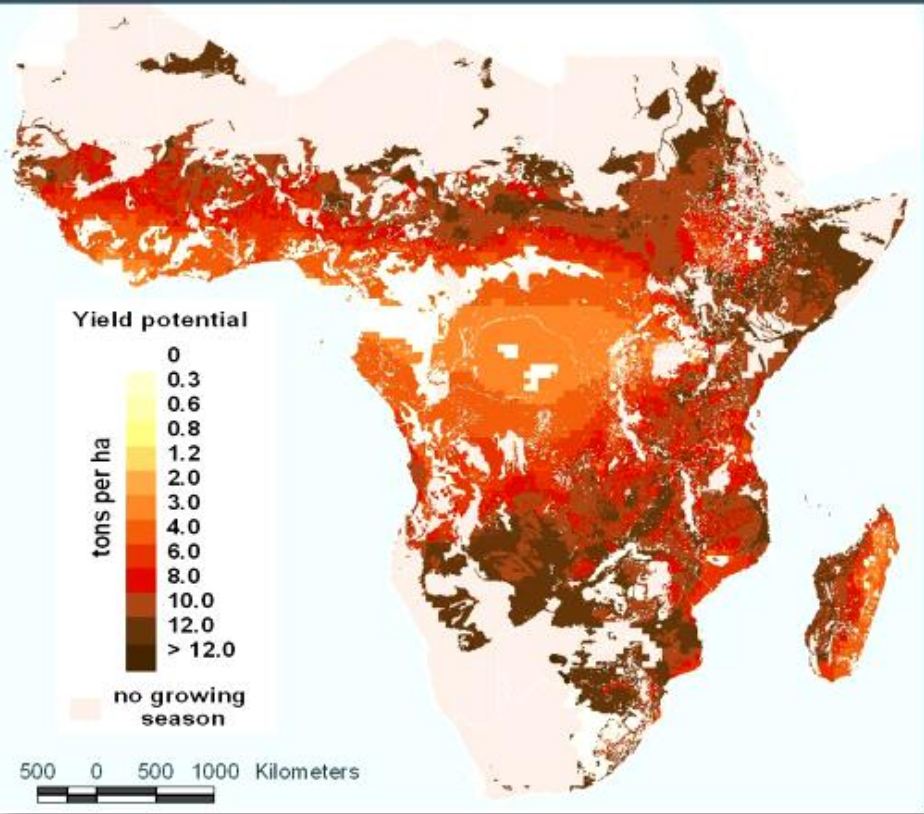
Agriculture in Africa – Just add water



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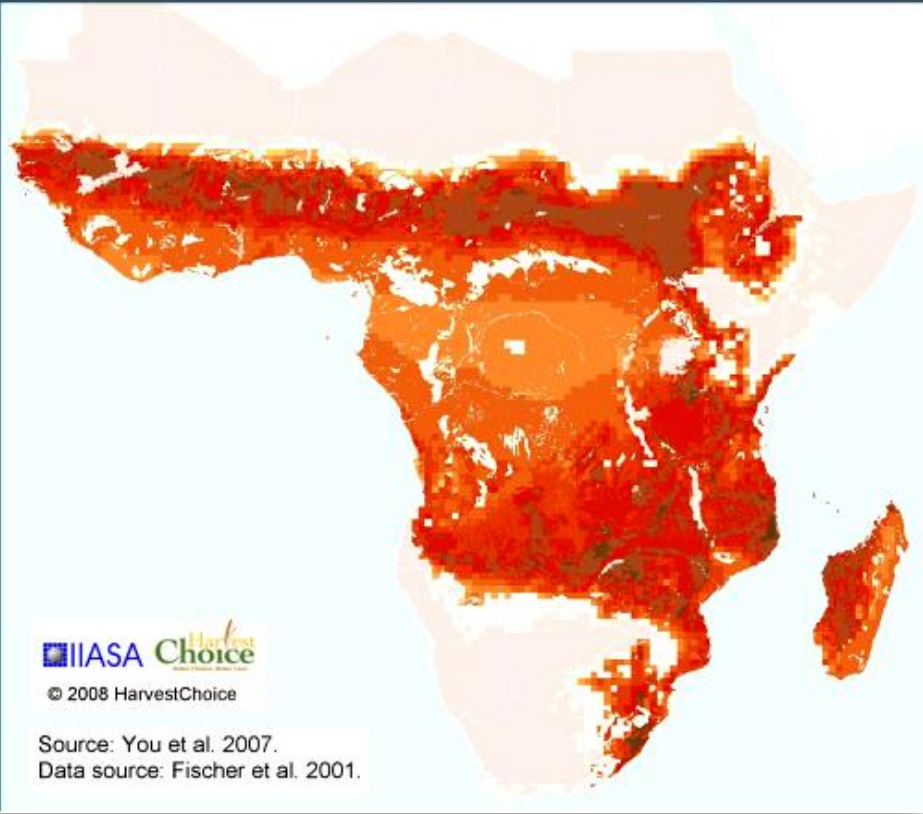
Biophysical crop suitability—yield

Maize: irrigated



Biophysical crop suitability—yield

Maize: rainfed-high inputs





Copper removal from effluents by various separation techniques

Acid mine drainage remediation options: a review

**MONO/DI-AMMONIUM PHOSPHATE FERTILISERS AS DRAW SOLUTION
FORWARD OSMOSIS DESALINATION**

Authors: *Sherub Phuntsho, Ho Kyong Shon, Seungkwon Hong and Sangyoun Lee*

Corresponding Author: *Ho Kyong Shon*
Lecturer – University of Technology Sydney (UTS) – Australia

**Heavy metals (Cd, Pb, Cu, Zn) in mudfish and sediments
from three hard-water dams of the Mooi River catchment,
South Africa**



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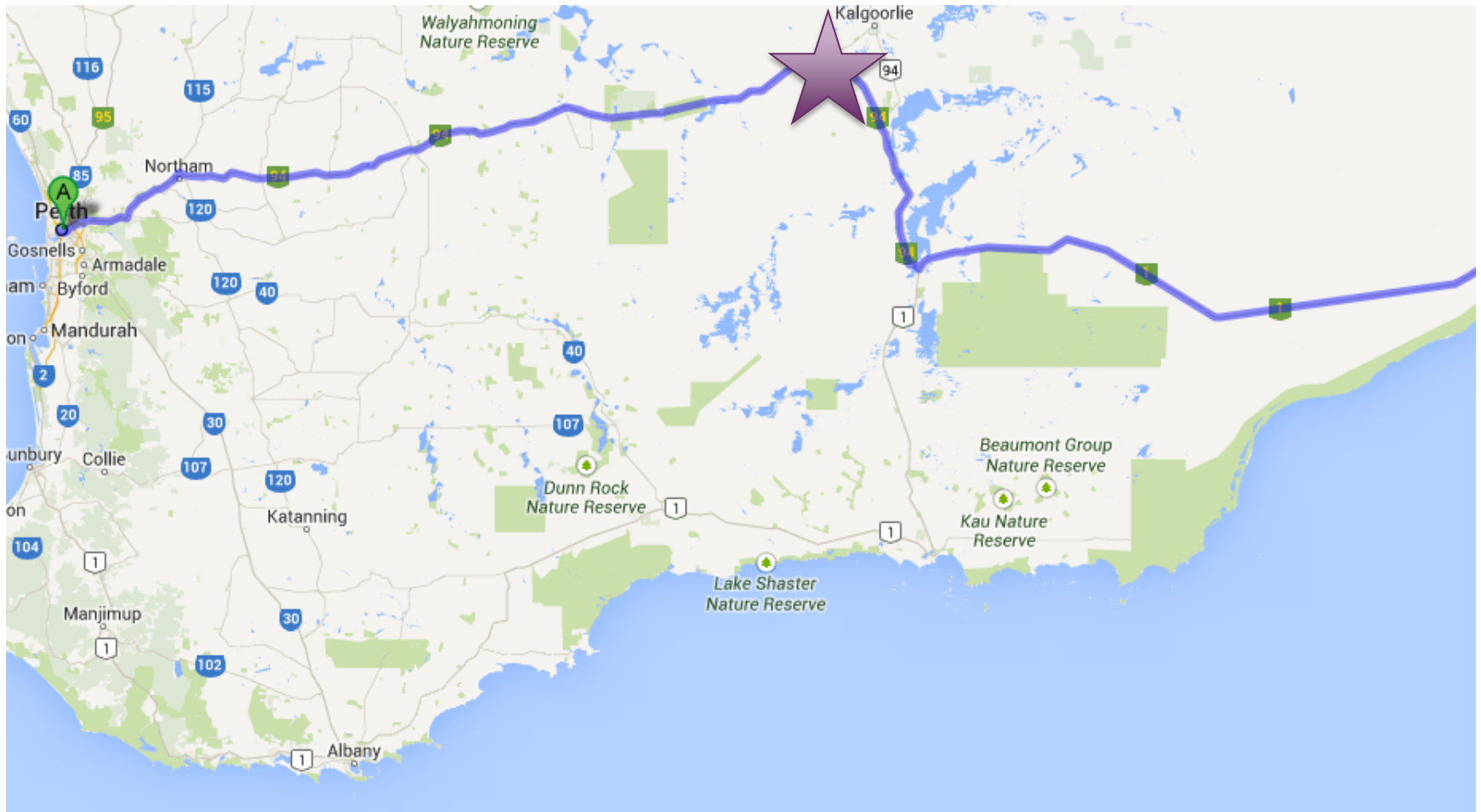


Perth to Adelaide



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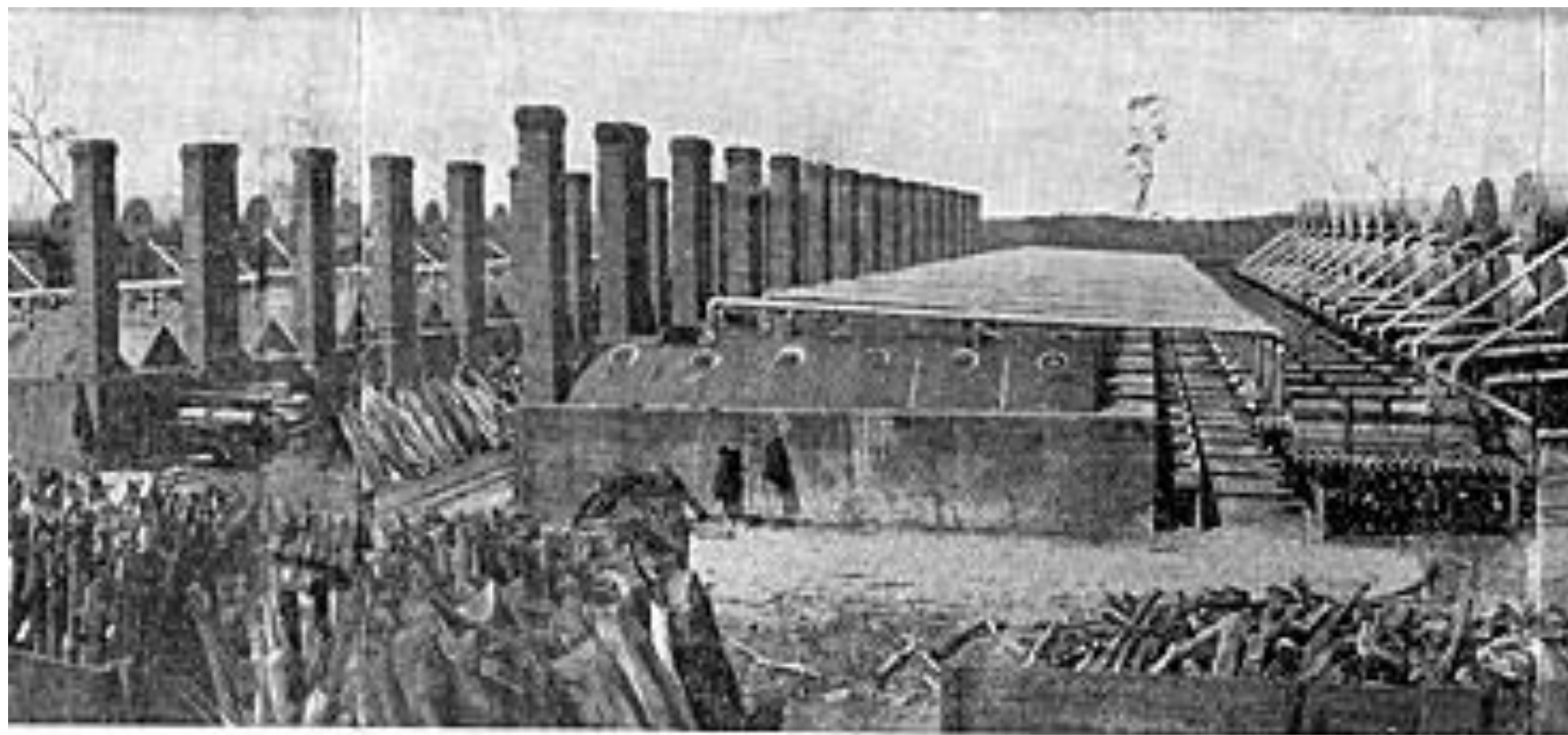
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GOVERNMENT CONDENSERS, COOLGARDIE.

(Coolgardie Goldfields.)



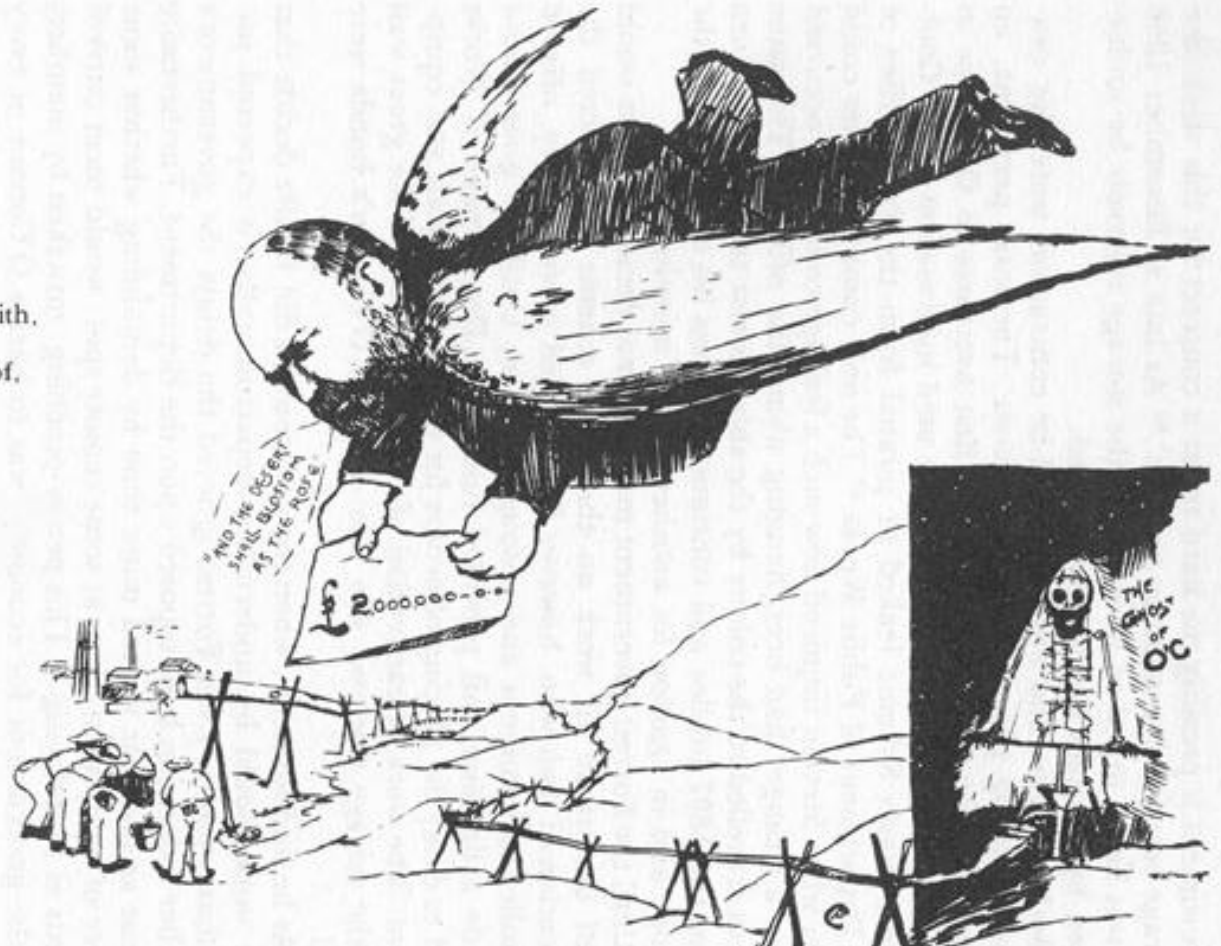


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JOHNNIE'S LITTLE TOY

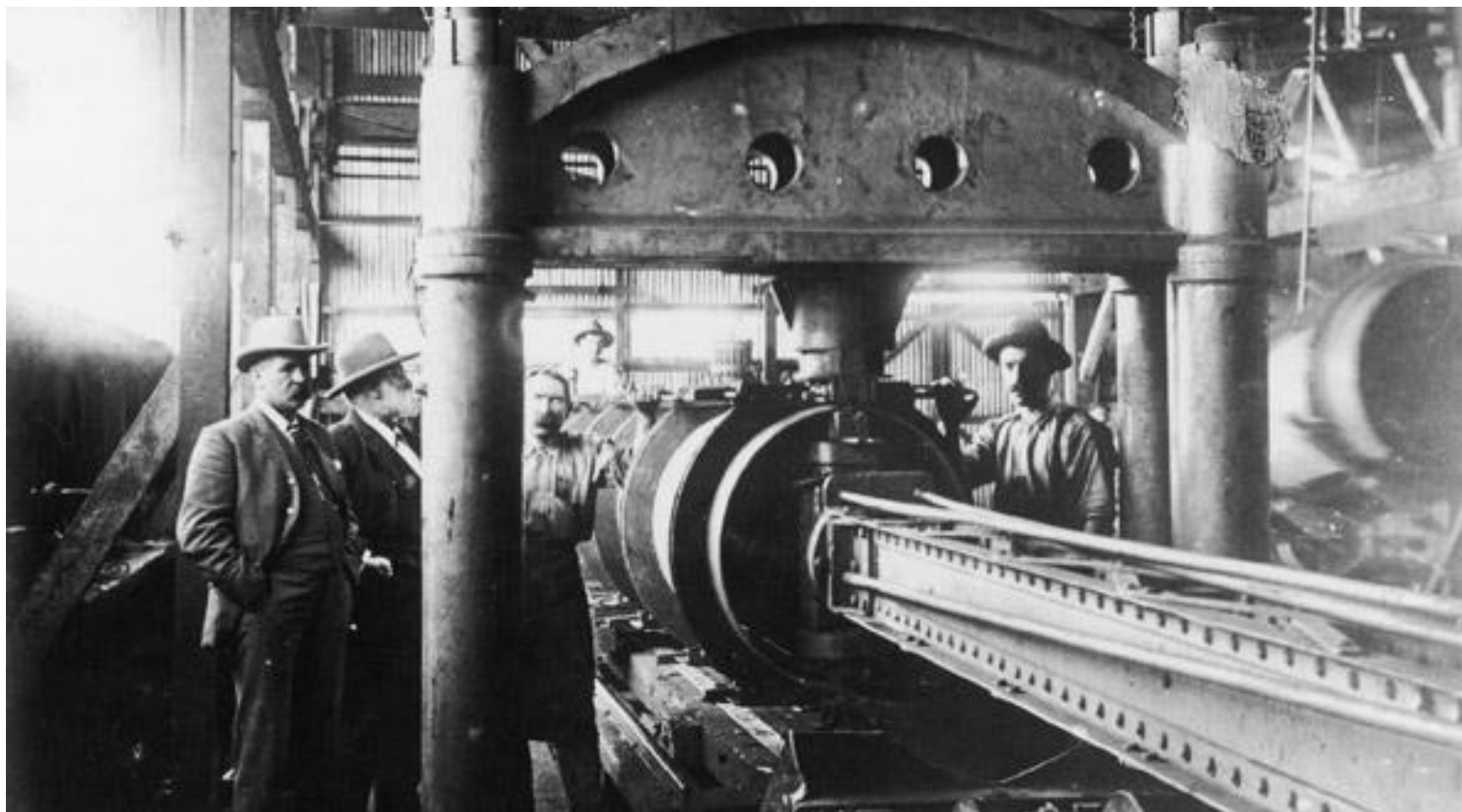
Johnnie wanted something to play with,
Something to hang on the wall,
Something that he might be proud of,
And so he has ruined us all.

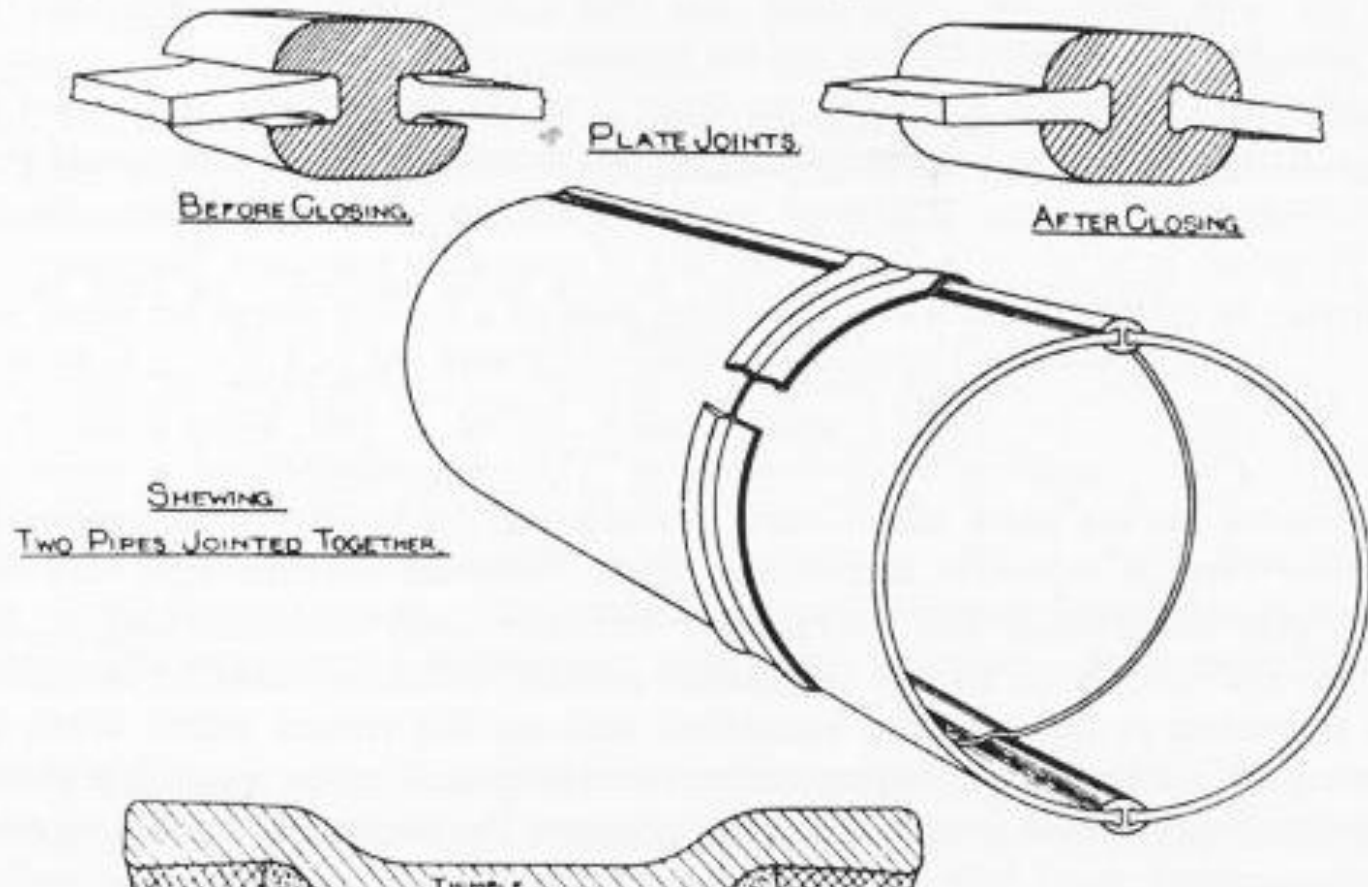




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Grain harvest in 2013: 15.1 million tonnes – a record



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Recent Media

"Getting agriculture and mining (to) work together in that part of the country that I'm coming from is difficult, I've never seen it happen,"

Sierra Leone's Deputy Minister for Agriculture and Food Security, Marie Jalloh.

<http://www.abc.net.au/news/2013-08-22/nrn-africa-mining-ag/4904602> (updated 22 August 2013, accessed 26 August 2013)



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awoko.org/2013/08/22/sierra-leone-news-london-mining-impedes-agriculture/

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Coal and gas mining spark protests



More than 1000 people
Farmers Against Fracking Rally on Sunday.

Awoko

Mon August 26, 2013 04:00PM

On the re-opening of SLFP Office... "We would never encourage violence" John Benjamin...

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Sierra Leone News: London Mining impedes Agriculture

The Town Chief of Gbom Limba in the Marampa Masimera Chiefdom, Pa Brima Sankoh fondly called Pa Kandapa has told fellow land owners affected by the flooding caused by London Mining that the company's action in the area is "an impediment" to agricultural development in the chiefdom.

The flooding caused by the company has affected agricultural productivity in eight localities in the chiefdom. Rice and other crop production in Gbom Limba, Katic, Maforkie, Moriah, Magbefay, Chedata and Manonkoh have dropped considerably such that the conditions of life of the people, who are heavily dependent on agriculture for livelihood, have been compromised.

Chief Brima Sankoh was speaking at a meeting on Monday, 19th August 2013 attended by over 300 affected people in the London Mining concession area at the residence of Paramount Chief Bai Koblo Queen II at Lunsar.

Speaking on behalf of the affected land owners, Chief Brima Sankoh London Mining has taken away their happiness by depriving them from their normal agricultural activities. He said as law abiding citizens they were at the meeting to formerly complain the company to their Paramount Chief before they take the law into their own hands.

"We are law abiding citizens and we do not want to be unlawful. We are here to formerly complaint London Mining to you before we resort to what we believe will address our collective course," Chief Brima Sankoh stated.

The Chief pointed that their farm lands have been subsumed by water brought about by the operations of the company and that this is impacting negatively on them as peoples.

Windows taskbar: Internet Explorer, Word, Skype, VLC, PDF Reader, Excel, Outlook, Firefox, Photoshop

COMMUNITY groups kicked off a National Week of Action against coal and gas mining on the weekend, with events held in Victoria, Perth and NSW.

Events commenced on Saturday with a rally and forum in Perth



Elements for Discussion

- Leadership for long term visioning
- Policy coordination for better systems of innovation in the extractive, agricultural, water and environmental sectors
- Capability enhancement: implementation; value adding, Regulation, M&E?
- Appropriate methods to engage local stakeholders?
- Extractive corridors: roles for government and private sector?
- Technology and innovation cooperation: what are the possible options that will benefit multiple stakeholders?



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African Technology Policy Studies Network

The missing link in Africa's industrial development effort is not resources but lack of technological capacity to innovate and add value to products