Presentation on the paracommons
Stockholm WWW 2017

University of East Anglia

Scarcity, efficiency and the paracommons of natural resource losses, wastes and wastages

Bruce Lankford

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20 April 2012 Last updated at 11:48

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'Huge' water resource exists under Africa

COMMENTS (386)

By Matt McGrath
Science reporter, BBC World Service

Scientists say the notoriously dry continent of Africa is sitting on a vast reservoir of groundwater.

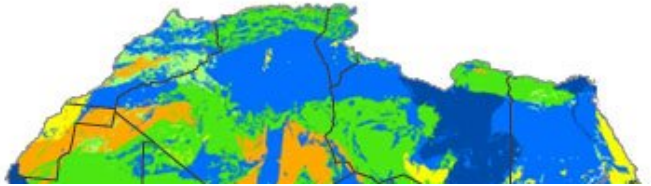
They argue that the total volume of water in aquifers underground is 100 times the amount found on the surface.

The team have produced the most detailed map yet of the scale and potential of this hidden resource.

Writing in the journal Environmental Research Letters, they stress that large scale drilling might not be the best way of increasing water supplies.

Across Africa more than 300 million people are said not to have access to safe drinking water.

Demand for water is set to grow markedly in coming decades due to population growth and the need for irrigation to grow crops.



Related Stories

Water map shows billions at risk

Water - another global 'crisis'?

Mapping future water stress

These aquifers are arguably a ‘commons’ or ‘common pool resource’

Researchers at British Geological Survey and University College London have found 0.66 million km^3

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My fake BBC webpage!

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‘Huge’ water resource exists in irrigation

COMMENTS (386)

By Matt McGrath
Science reporter, BBC World Service

Researchers have found 160 cubic kilometres of available freshwater water.

Released by improving the management of inefficient irrigation systems

Enough for 60 litres for every human every day

By assuming a global irrigated area of approximately 270 million ha, of which approximately 85% is gravity/surface fed, we could for the purposes of demonstration, accept a 10% relative reduction in total consumption (via non-beneficial consumption and non-recovered losses). Assuming a cautiously low gross annual consumption of 600 mm (building on Doll and Siebert’s (2002) figure of approximately 420 mm net crop water requirement globally) this 10% saving in consumption gives a reduction of consumption down to 540 mm, releasing 60 mm depth equivalent. Spread over 270 million hectares, this is equivalent to 0.44 cubic kilometres water per day, the same volume as providing 7 billion people with approximately 63 litres per day of water per person; a sizeable proportion of an individual’s daily water requirement

A freed-up and salvaged ‘loss’ is a ‘paracommons’

The paracommons: the use of metaphor to capture nature-society governance

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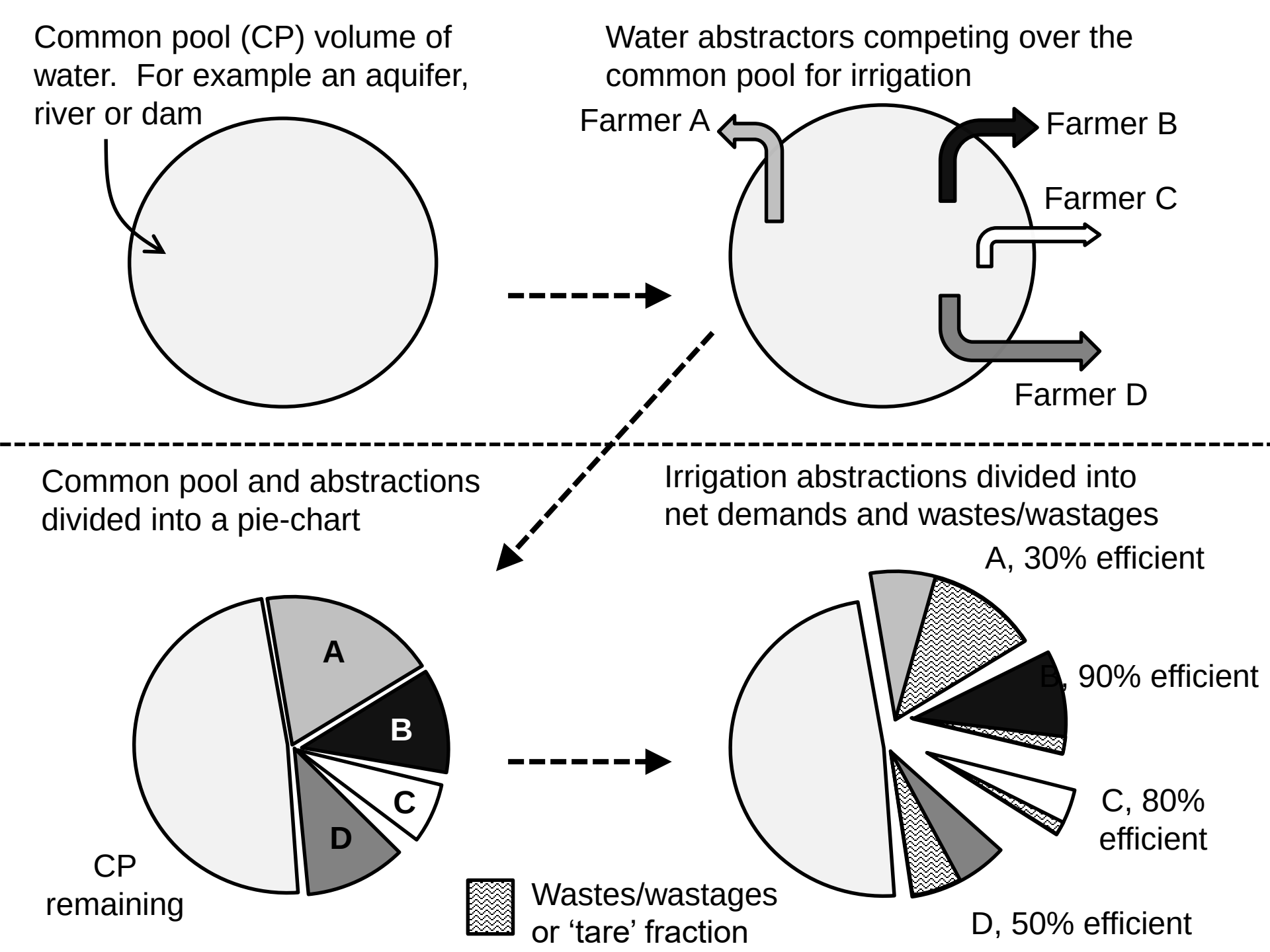
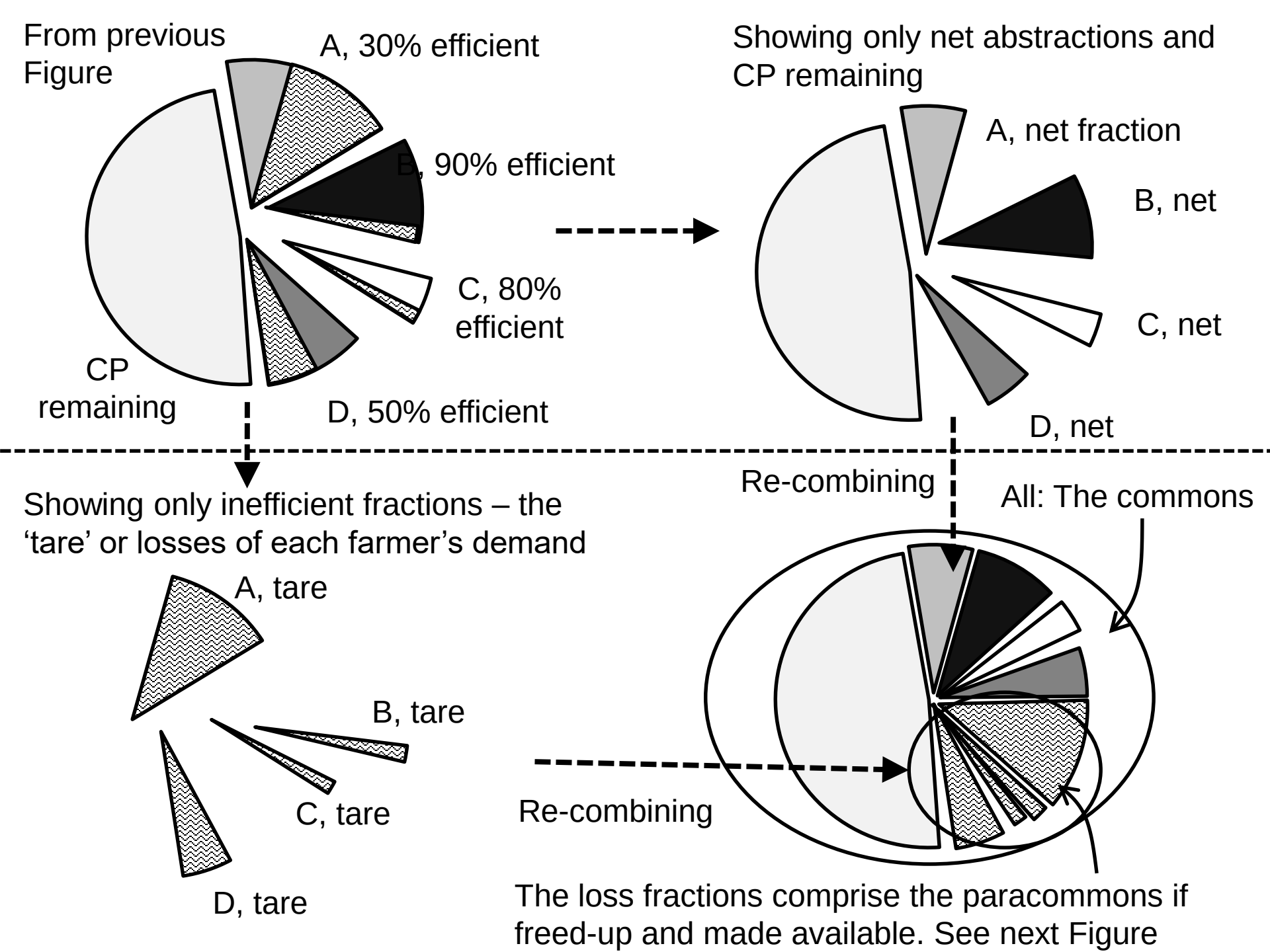
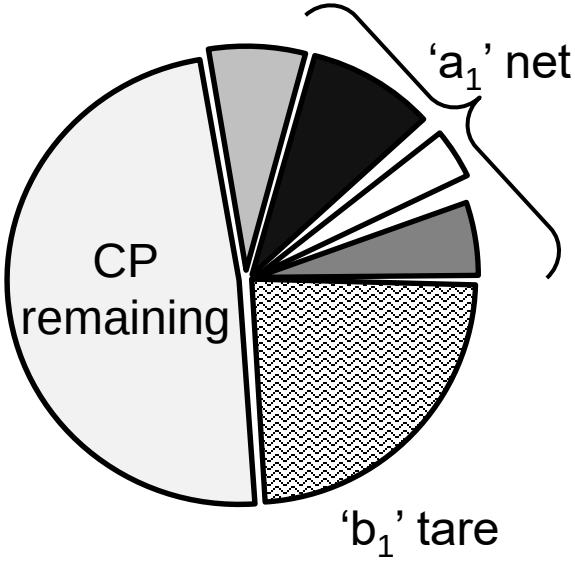
- Hardin's 'Tragedy of the Commons' (1968)
- 'commons and anticommons' where under or over regulation is expressed (Heller 2008; Brede 2009)
- 'inverse commons' (Raymond, 1999) where greater consumption and sharing leads to greater good
- 'new commons' (Hess, 2008) identified as those without developed rules and institutions;
- 'invisible commons' (Bruns, 2011) covering the challenges of groundwater;
- 'semi-commons' where overlapping ownership regimes in water exist (Smith, 2008).
- Paracommons of yet-to-be-conserved freed-up resources

'Para'; *against, alongside, parallel, viewpoint*


Common pool (CP) volume of water. For example an aquifer, river or dam
Water abstractors competing over the common pool for irrigation
Farmer A
Farmer B
Farmer C
Farmer D
Common pool and abstractions divided into a pie-chart
Irrigation abstractions divided into net demands and wastes/wastages
A
B
C
D
CP remaining
A, 30% efficient
B, 90% efficient
C, 80% efficient
D, 50% efficient
Wastes/wastages or 'tare' fraction


From previous Figure
A, 30% efficient
B, 90% efficient
C, 80% efficient
D, 50% efficient
CP remaining
Showing only net abstractions and CP remaining
A, net fraction
B, net
C, net
D, net
Re-combining
All: The commons
Showing only inefficient fractions – the 'tare' or losses of each farmer's demand
A, tare
B, tare
C, tare
D, tare
Re-combining
The loss fractions comprise the paracommons if freed-up and made available. See next Figure

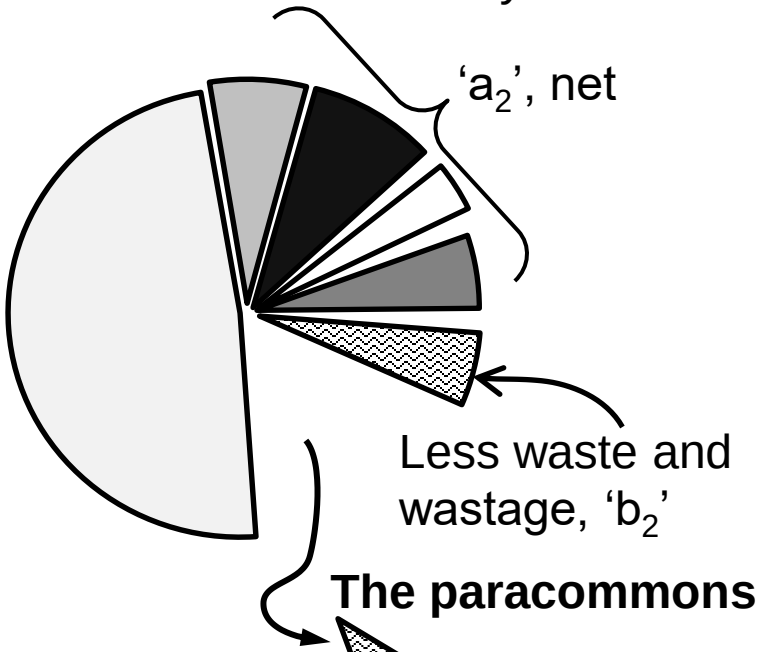
Present; the 'believed to be' less efficient sector or system



Reworking resource systems

Attempts to raise efficiency and reduce wastes and wastages

Future; the 'intending to be' more efficient sector or system



Efficiency = net / gross
Efficiency = net / net + tare
Efficiency = $a_1/(a_1+b_1)$

This is the material gain or ' as a result of the efficiency gain.

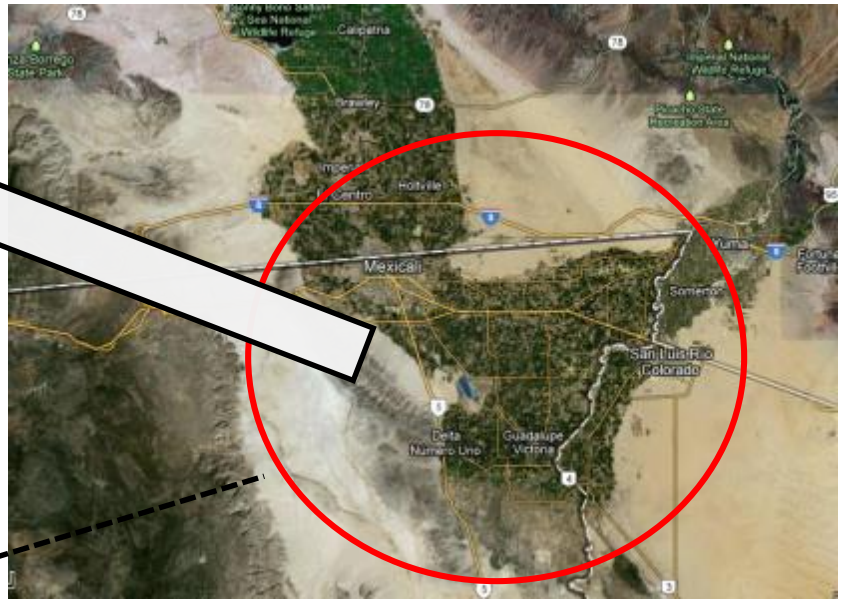
In the future system, the efficiency is higher and the waste, wastages or losses of 'b_2' are lower than 'b_1'. This is a gain in efficiency as a performance measure.

The paracommons is understood through questions such as:

- How much of a material gain is 'freed up'?
- Who gets the gain of an efficiency gain (to which user, system or sector does this gain flow to?)
- How are relations changed by efficiency?

Prefigurations of material benefits of efficiency gains

Savings made in Mexican irrigation “by lining canals and upgrading the way crops are irrigated” to be banked in Lake Mead



Commons: How much water in Colarado River and who gets it?
Paracommons: How much water can be saved; how to reserve and relocate this saved water and who gets it? **The promise of gains in the future.**

LAS VEGAS REVIEW-JOURNAL

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Colorado River water pact could be model for other nations

BY HENRY BREAN
LAS VEGAS REVIEW-JOURNAL

Posted: Nov. 15, 2012 | 3:38 p.m.

A new Colorado River agreement between the United States and Mexico could serve as a model for other countries locked in conflict over water.

That was the message Thursday as the sweeping, five-year pact was approved by the Southern Nevada Water Authority and the Colorado River Commission of Nevada in a rare joint meeting.

The landmark deal won't become official until representatives for the United States and Mexico sign it on Tuesday, but water authority chief Pat Mulroy said she already has talked to several people from Africa, Asia and Australia who want to read and perhaps borrow from the water accord.

LAS VEGAS REVIEW-JOURNAL

Tools

Paradox and paracommons revealed

SUPREME COURT OF THE UNITED STATES

Syllabus

MONTANA *v.* WYOMING ET AL.

ON EXCEPTION TO REPORT OF SPECIAL MASTER

No. 137, Orig. Argued January 10, 2011—Decided May 2, 2011

Article V(A) of the Yellowstone River Compact ratified by Montana, Wyoming, and North Dakota provides: "Appropriative rights to the beneficial uses of the water of the Yellowstone River System existing in each signatory State as of January 1, 1950, shall continue to be enjoyed in accordance with the laws governing the acquisition and use of water under the doctrine of appropriation." 65 Stat. 666. Montana filed a bill of complaint, alleging that Wyoming breached Article V(A) by allowing its upstream pre-1950 water users to switch from flood to sprinkler irrigation, which increases crop consumption of water and decreases the volume of runoff and seepage returning to the river system. Thus, even if Wyoming's pre-1950 users divert the same quantity of water as before, less water reaches downstream users in Montana. Concluding that the Compact permits more efficient irrigation systems so long as the conserved water is used to irrigate the same acreage watered in 1950, the Special Master found that Montana's increased-efficiency allegation failed to state a claim. Montana has filed an exception.

Norris (2011) ".. the United States Supreme Court's recent decision in Montana v Wyoming brings to the forefront one of the most complicated and contested facets of irrigation efficiency: who owns the rights to the conserved water?"

Downstream Montana complained against Wyoming for introducing more efficient irrigation that reduced drainage on which it relied

Who gets the gain of material gain? Paracommons destinations of savings

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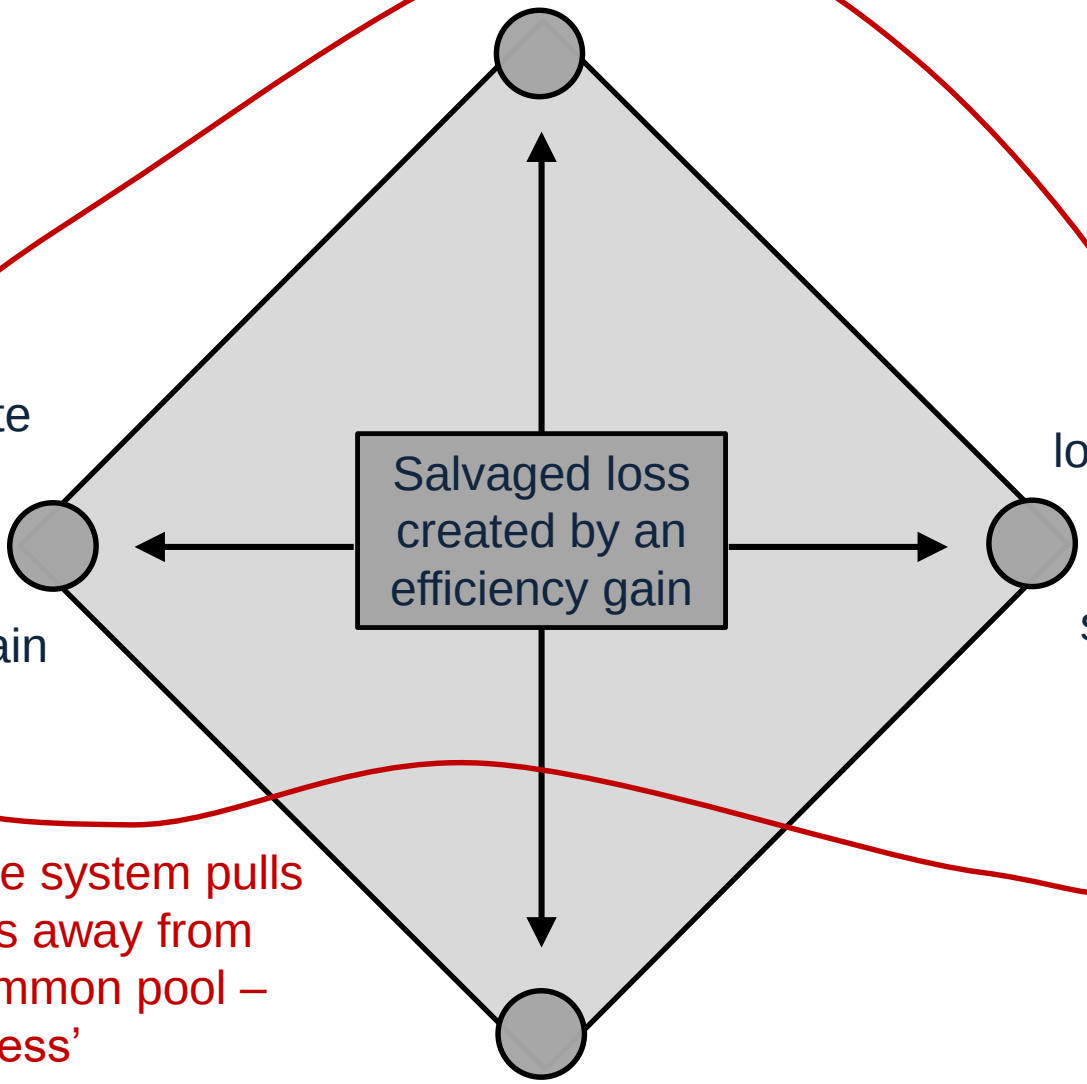
- So the problem is that if *you* have saved a resource….
- It gets used by you later on
- It gets used someone close to you
- It gets used by someone you don't know for another economic purpose

And therefore it might…

- Not end up conserved in nature

The salvaged loss moves to the **wider economy**, or to government, urban, and industrial demands. To ‘unrelated neighbours’



The salvaged loss moves to immediate **neighbours** in a neighbourhood system to raise production or sustain benefits

The salvaged loss moves to or stays with the **proprietor** system to raise production and productivity

Highly appropriative system pulls salvaged resources away from returning to the common pool – away from ‘greenness’

The salvaged loss moves to the **common pool** and/or the environment for conservation and productivity

The resource plus losses together

The ‘normal’ losses

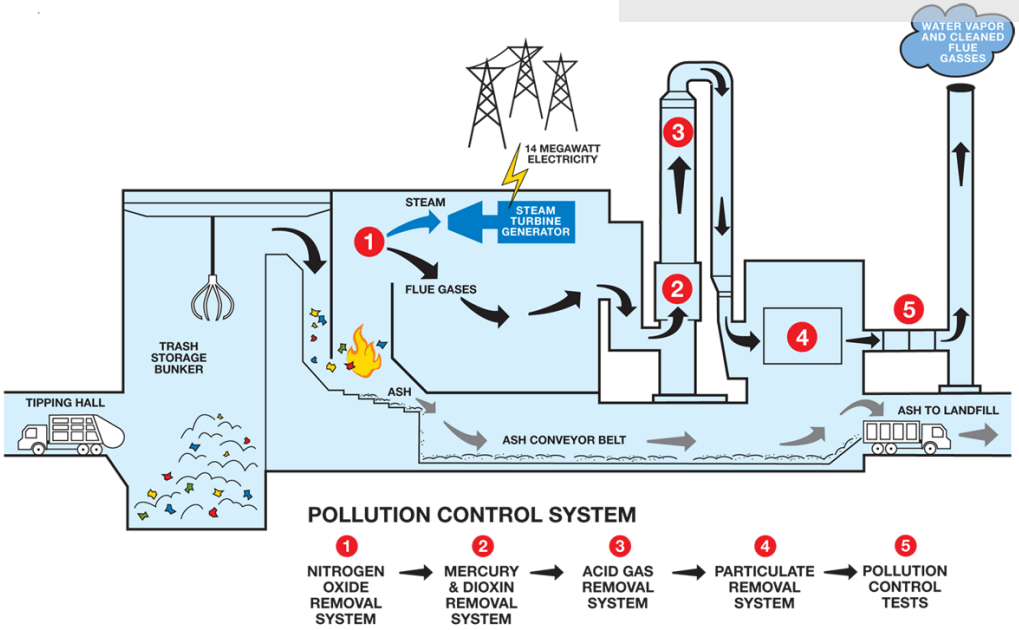
The householder (proprietor)

1

Distribution of salvaged wastes/wastages

3

The wider economy



2

Household refuse then to neighbouring parties

4

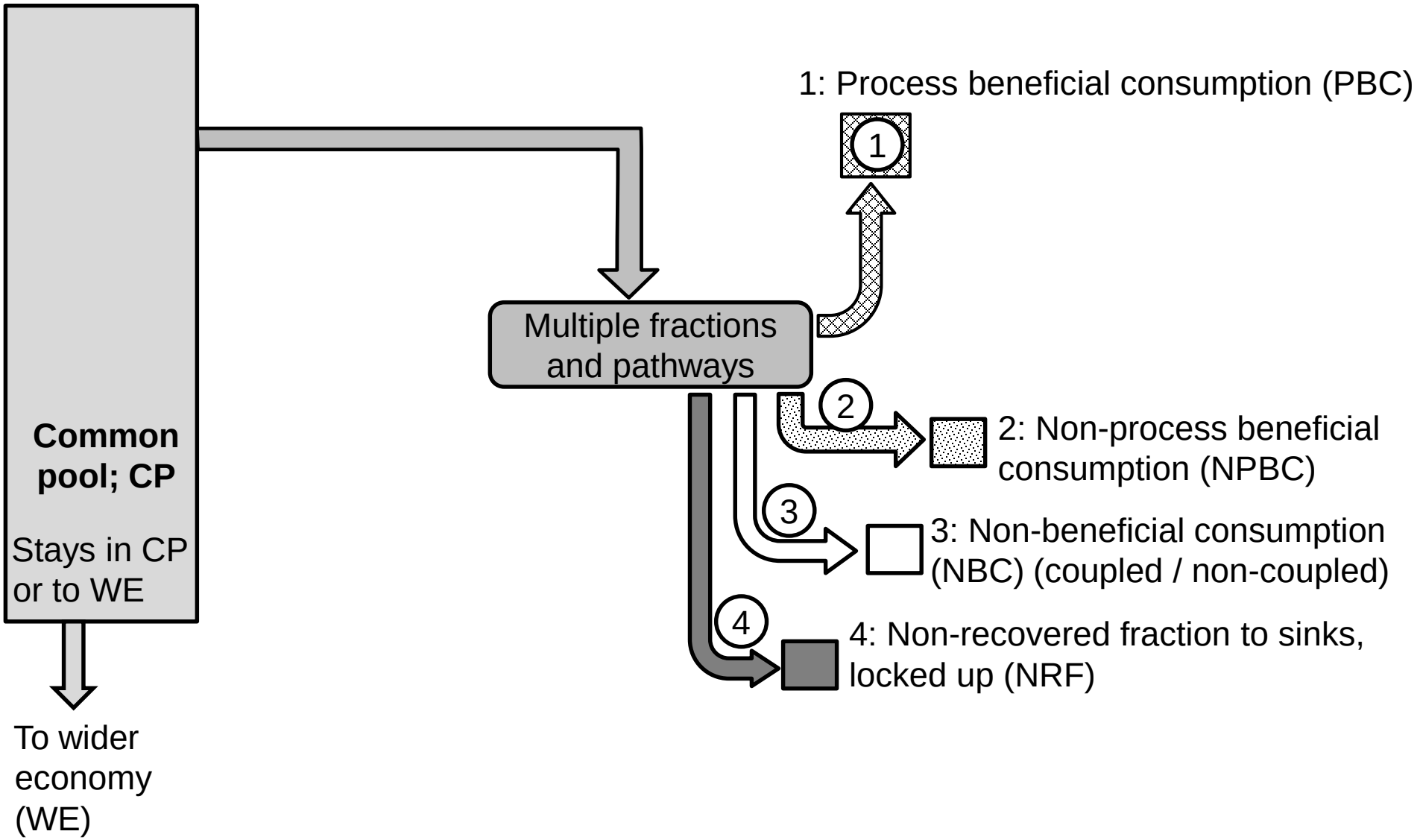
Back to the common pool

Waste-to-Energy

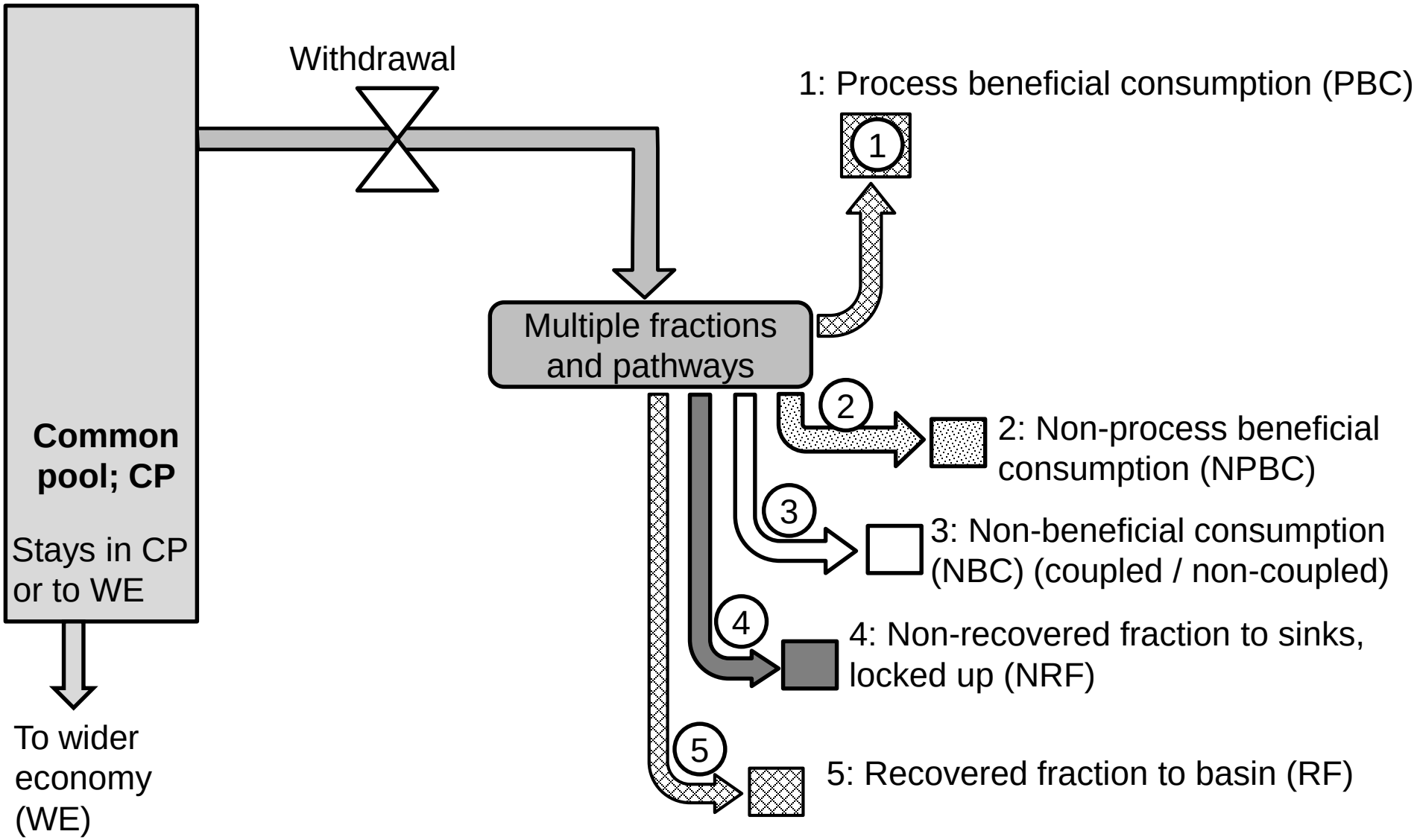
- 90% reduction of trash volume
- Power generation
- Pollution control

ecomaine
the future of regional waste systems
www.ecomaine.org

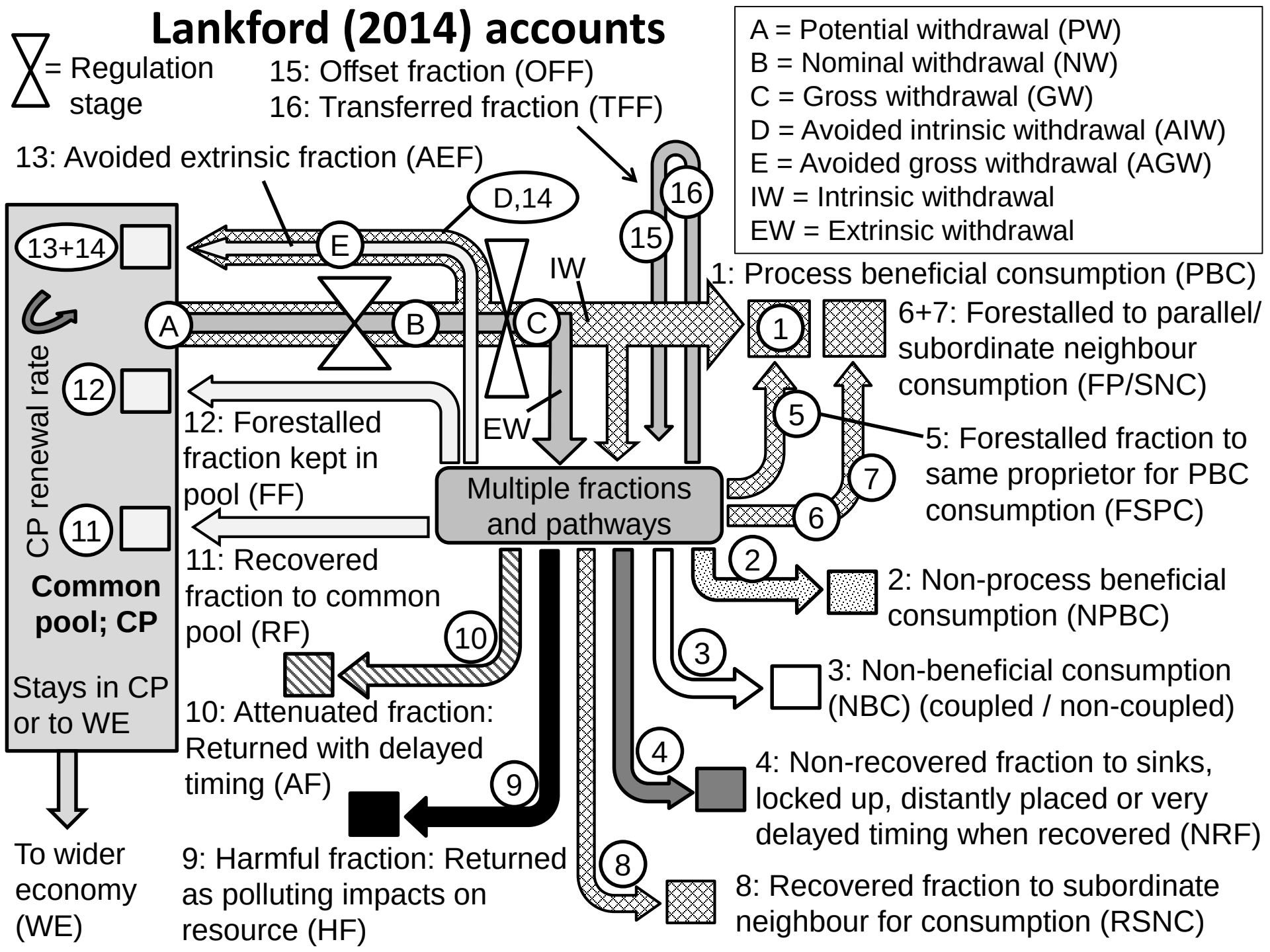
IWMI-Water accounts (Karimi, 2012)

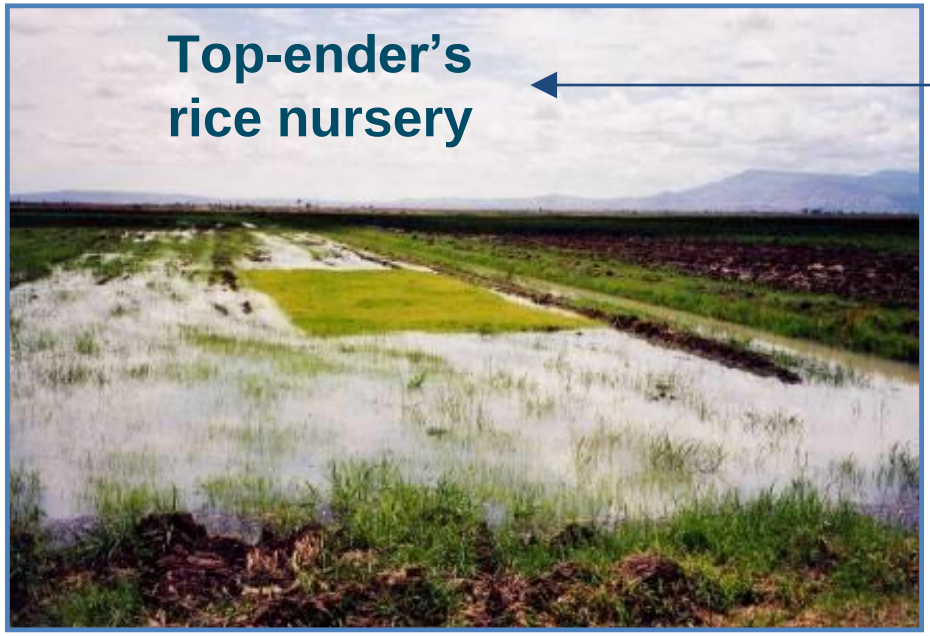


Perry (2007) accounts



Lankford (2014) accounts





Being a waterist; *who* knows how to control & 'save' water

Conclusions
Selected ideas

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- Paracommons; the idea of a material gain arising out of the performance gain to be competed over
- Promise and prefiguration; the idea of a future performance gain as a result of a policy intervention
- Paradox; the idea of outcomes going against expectation or original prefiguration
- Parallax views; Who knows how to save water? A transect through water saving conceptions; esp water accounting
- Destinations of material gains – four resolutions/outcomes
- Liminality; a space & time transition through which wastes and wastages pass and resolve themselves (in-betweenness)

Thank you (and the book)

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- http://www.routledge.com/books/details/9780415828468/
- Routledge; Sustainability series
- Lankford B.A. 2013. Resource Efficiency Complexity and the Commons: The Paracommons and Paradoxes of Natural Resource Losses, Wastes and Wastages.