



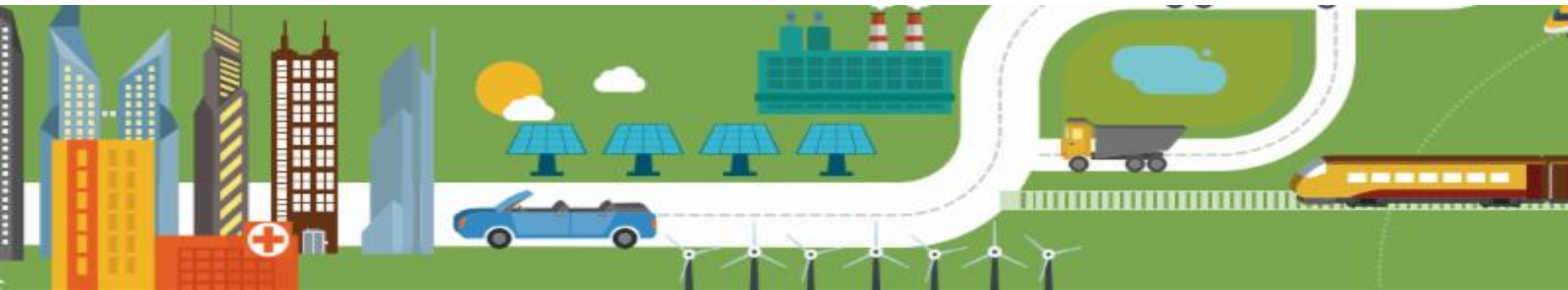
The webinar will begin shortly...



Win-Win Solutions for Clean Energy, Sanitation, Smart Agriculture and Resilient Communities

20 FEBRUARY 2018

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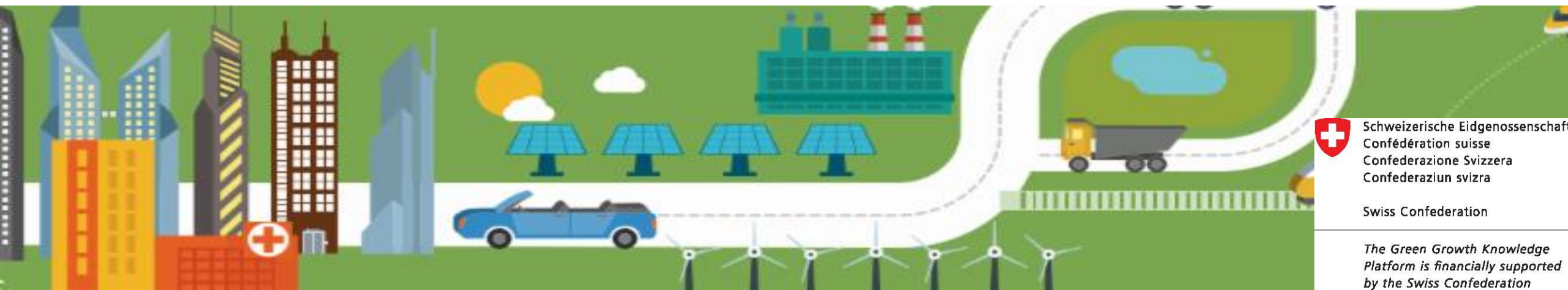




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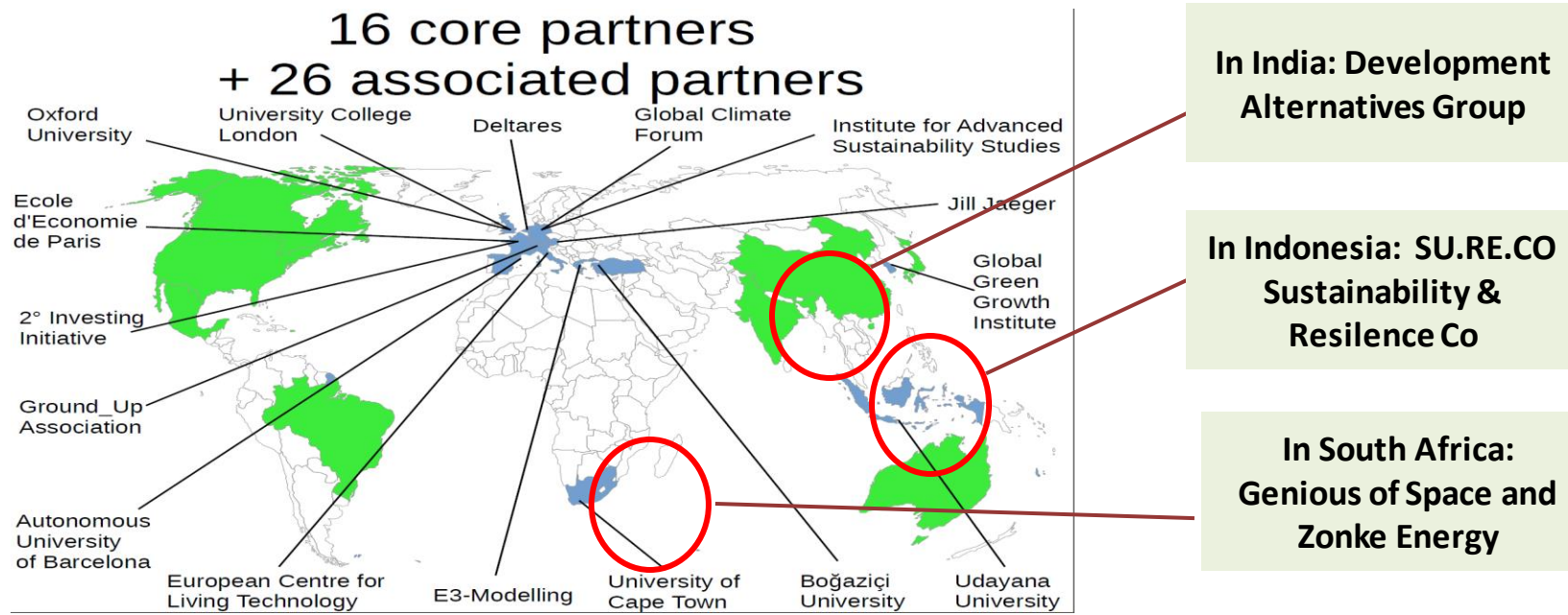
Swiss Confederation

*The Green Growth Knowledge
Platform is financially supported
by the Swiss Confederation*

The GREEN-WIN project

Green Growth and Win-Win Solutions for Sustainable Climate Action

- A 3-year EU funded project to identify, co-develop and disseminate economic win-win strategies (WWS) which link climate and sustainable development goals.
- A solution-oriented research. A WWS delivers both socio-climate benefits and economic gains in the short term.
- GREEN-WIN uses both macro (modelling) and micro approaches (case studies) At micro level: coastal adaptation, urban systems and **energy poverty alleviation and resilient livelihoods**.



Moderator



Sandy
Bisaro

Institutional
Economist and
Researcher,
Global
Climate Forum

Speakers



J. David
Tàbara
Associate
Senior
Researcher,
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Takeshi
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Lauren
Hermanus

Project
Manager,
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Climate and
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Initiative



Gina
Ziervogel

Associate
Professor,
University of
Cape Town

Reducing energy poverty and supporting resilient livelihoods through win-win solutions

Lessons learned from India



J. David Tàbara

Associate Senior
Researcher, Autonomous
University of Barcelona



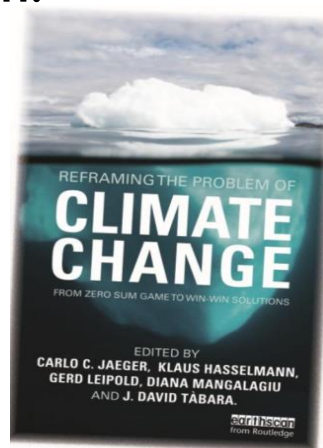
Why focus on Win-Win solutions?

- General policy and economic discussions have framed **climate change** as a win-lose game or as a burden-sharing negotiation, instead as **an source of green jobs, green business and sustainable development**.
- Given the existing **weak global climate governance arrangements** and the fact that the agreed climate CoP21 Paris pledges will be insufficient to keep global warming below the 2- 1.5° threshold, it is **urgent to understand the role** of private and individual agents, to embrace **short-term integrated mitigation and adaptation strategies** (e.g. 1-3 years or shorter) aligned with sustainable development.
- Aligning climate policies and incentives to **sustainable development** goals may be able to **overcome barriers between mitigation and adaptation** and **reduce the overall cost of climate action**.
- The most urgent challenge: **rapid ‘sustainabilisation** (not only ‘rapid decarbonisation’...).

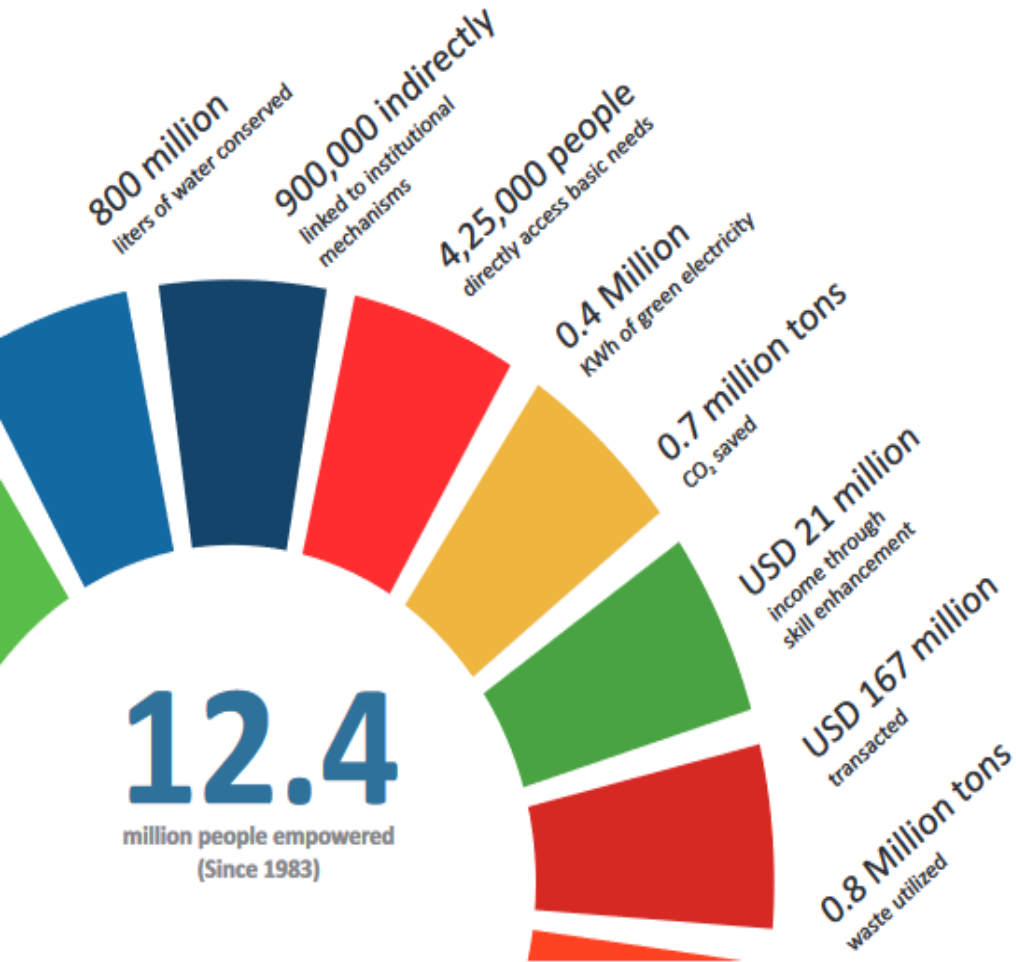
•Jaeger, C. C., Hasselmann, K., Leipold, G., Mangalagiu, D., and Tàbara, J. D., Reframing the Problem of Climate Change: From Zero Sum Game to Win-Win Solutions. Oxon, UK, New York, USA & Canada: Earthscan/Taylor

•Tàbara, J. D., Mangalagiu, D., Kupers, R., Jaeger, C. C., Mandel, A., Paroussos, L. 2013. Transformative targets in sustainability policy-making: the case of the 30% EU mitigation goal. Journal of Environmental Planning and Management, 56(8): 1180 -1191.

<http://dx.doi.org/10.1080/09640568.2012.716365>



Insights from India: The case of the Development Alternatives Group

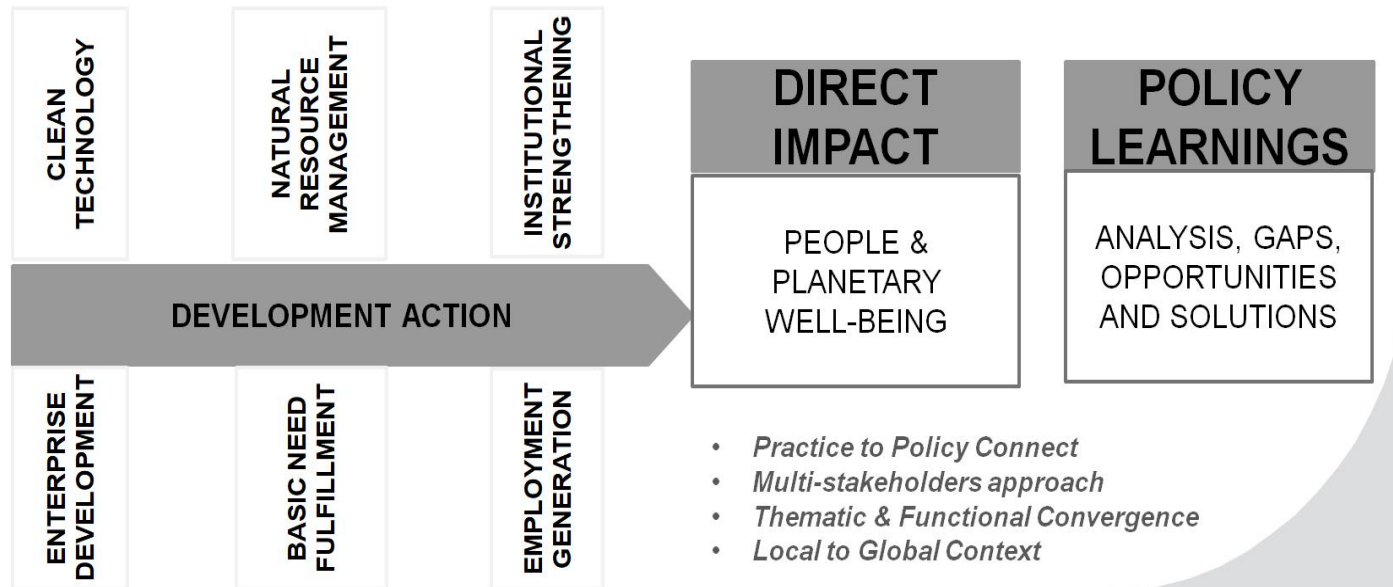


- The Development Alternatives Group comprises of the Society for Development Alternatives (DA), Society for Technology and Action for Rural Advancement (TARA), and its affiliate social enterprises.

- It is the world's first social enterprise dedicated to sustainable development striving to deliver socially equitable, environmentally sound and economically scalable development outcomes.

'Eco-solutions for people and the planet'

Scoping Development Alternatives: Area of Work



Clean & Green Environment



Income Generation Opportunities

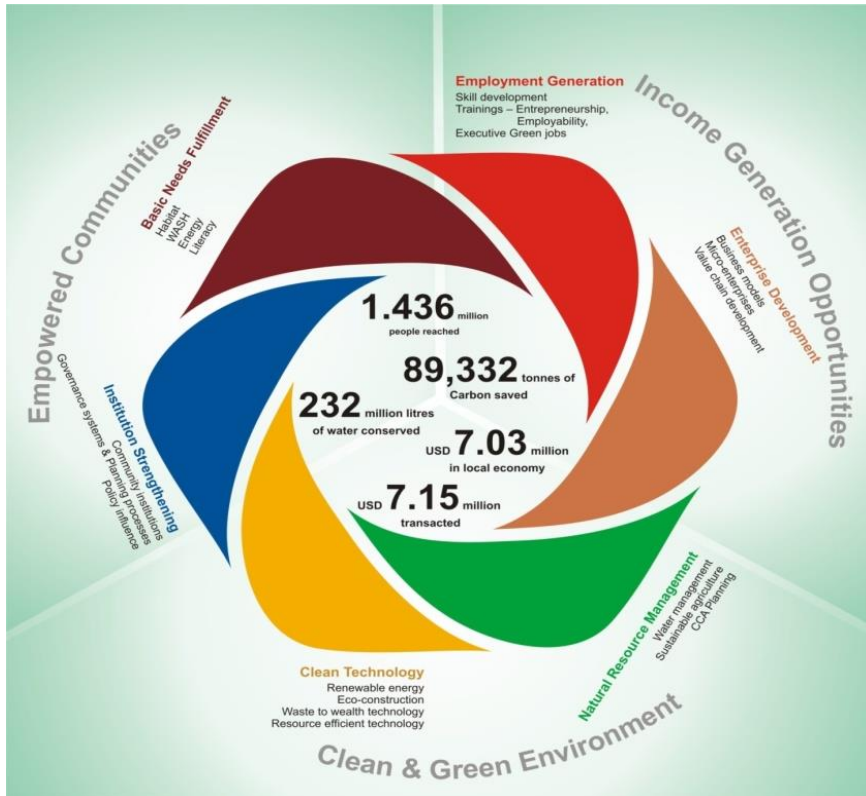


Empowered Communities



DA Group: Some examples and areas of work

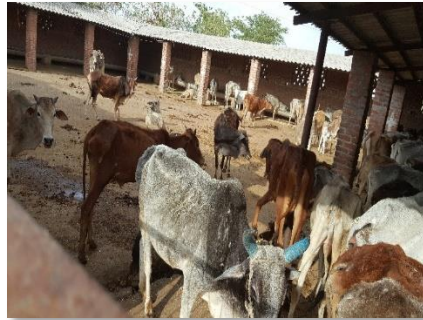
- **Development and implementation of renewable energies in poor communities** to support resilient livelihoods and entrepreneurial capacities (integrated solar, biogas, compost systems)
- **Integrated system of solutions** yielding other **social and environmental co-benefits**: improved and more secured provision of **renewable-energy based water for agriculture, drinking and sanitation services**, & access to local economy exchange products (e.g. low-carbon bricks).



Some concrete examples from India...



Stray Cows



Herd cows



Waste stream:
Manure



Product:
high value compost

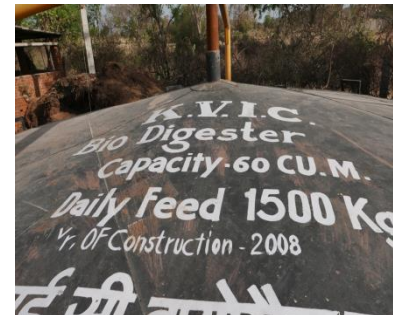


Waste stream:
Fertilizer

Need/problem: Energy poverty, poor soils (eroded)

Business opportunity: Energy and organic Composts from strayed Cows

Solution: Use waste stream from street cows



Product:
Biogas (energy)

Integrated systems of solutions for climate and livelihood resilience



Poor community



Solar pumped well



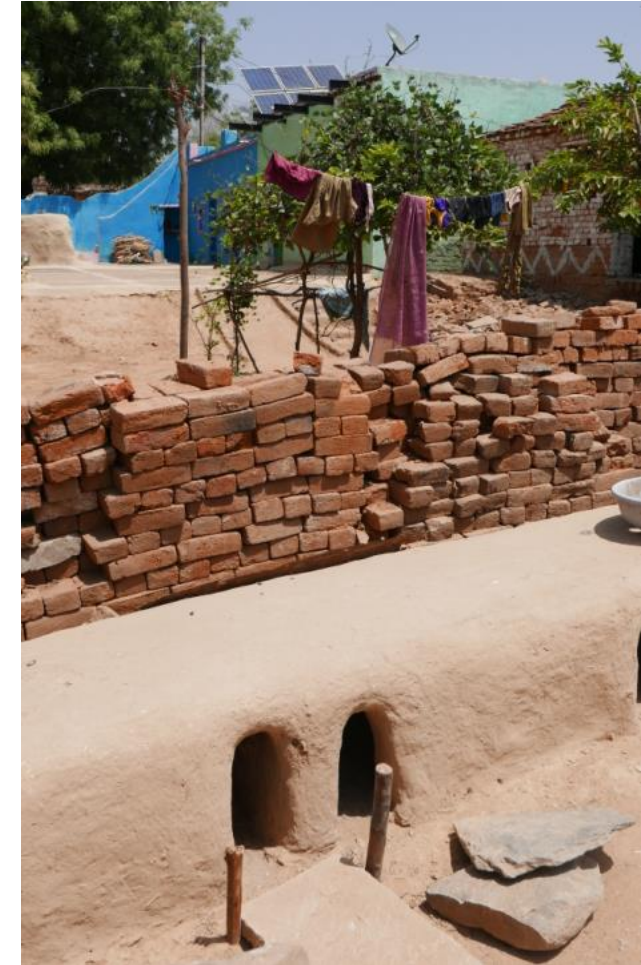
Poultry as source of economic exchange



Reduced fertility, improved health



Product:
Eggs



INTEGRATED SYSTEM
OF SOLUTIONS

Need /problem: Draught, health problems and migration of poor communities to urban slumps / large families

Business opportunity: pay-as-you go community electricity system

Solution: Solar powered irrigation pump.

TARA low-carbon / low energy green ash brick

- TARA (DA) has produced over 230 million green bricks which largely reduce the need for energy (coal), GHG emissions, and fertile soil consumption.
 - It is more work-intensive, but this translates in thousands of additional people being employed directly, many more indirectly and others being trained and included in the economy
 - Helps to reduce poverty and supports sustainable livelihoods
- Satisfying demand of concrete based building materials in developing countries (India)
 - Reducing impact on natural resources
 - water, soil, coal, timer, limestone, stones, etc.
 - Reducing power to produce cement
 - 0.18 - 0.28 tonnes of coal and 100-110 kWh of power is required to manufacture one tonne of cement
 - TARA technology reduce the need of coal in 30-40%
 - Reducing GHG emissions and climate change impacts

Construction industry is most resource intensive sector in India. Bricks and cement are the worst.



Some lessons learned

- WWS can only be successful if **co-developed with local communities and organisations**. It takes a lot knowledge integration and **trust**-building capacities (and time!) to develop and implement them...
- The main focus needs to be placed in **empowering ‘who is the solution’** (e.g. women, disadvantaged groups) rather just telling what is the problem.
- Key is the ability to create and maintain **transformative ‘glocal’ networks of local-international collaboration**. Transparency and accountability of organisations / businesses is crucial for global transformative networking.

Some lessons learned

- **There are no perfect solutions** nor a single solution which can fit all kinds of contexts. Experimentation and incremental step-by-step learning is the norm and global standards may not apply locally. **IT + green Tech integrated distributed / community based solutions** are playing a growing central role.
- A new vision of a green economy is emerging: that of **Restorative Economy** - restoring basic socio-economic and ecological capitals /systems necessary to ensure sustainability in the long term while being able to yield the necessary economic incentives for individual and collective action in the short term.

Tàbara, J.D., Frantzeskaki, N., Hölscher, K., Pedde, S., Lamperti, F., Kok, K., Christensen, J.H., Jäger, J., and P. Berry. 2018. Positive tipping points for a rapidly warming world. *Current Opinion in Environmental Sustainability*. Special Issue on *Sustainability Governance and Transformation*, 31. doi: 10.1016/j.cosust.2018.01.012

Tàbara, J.D., Jäger, J., Mangalagiu D. & Grasso, M. 2018. Defining Transformative Climate Science in the context of high-end climate change. *Regional Environmental Change*. IMPRESSIONS project Special Issue. <http://doi: 10.1007/s10113-018-1288-8>

Synergizing climate change adaptation and mitigation with clean energy (biogas) and smart agriculture (coffee) in Indonesia



Takeshi Takama

CEO,
su-re.co

SYNERGY

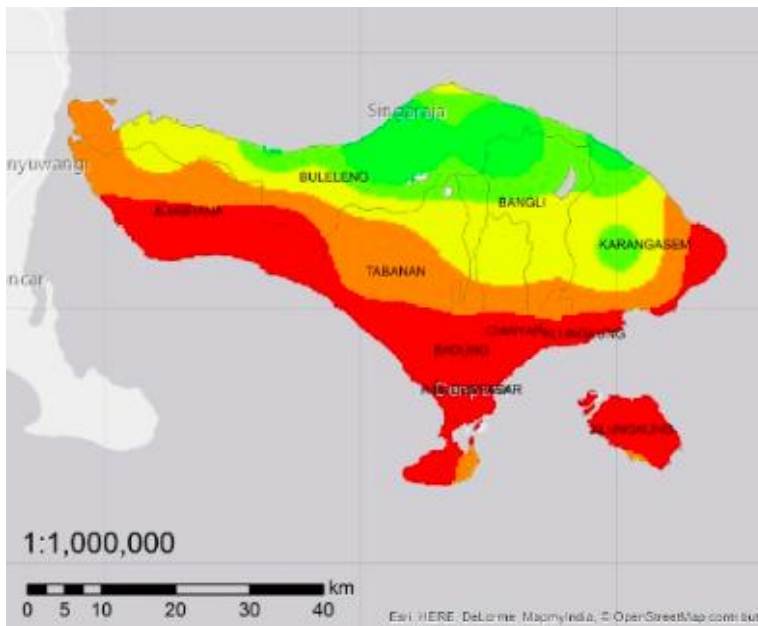
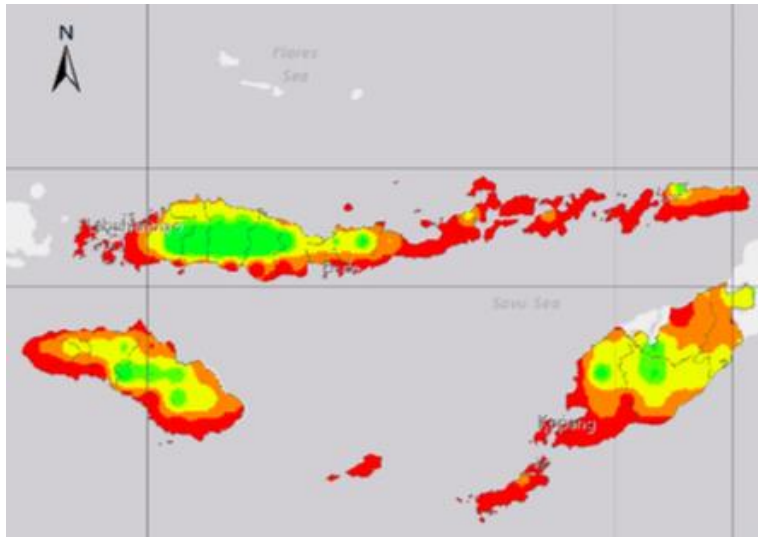
$$1+1=3$$

Synergy mitigation & adaptation with clean energy & climate smart agriculture



GreenWin and TransRisk projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642018 & 642260.

Vulnerability assessment




Climate Smart Agriculture

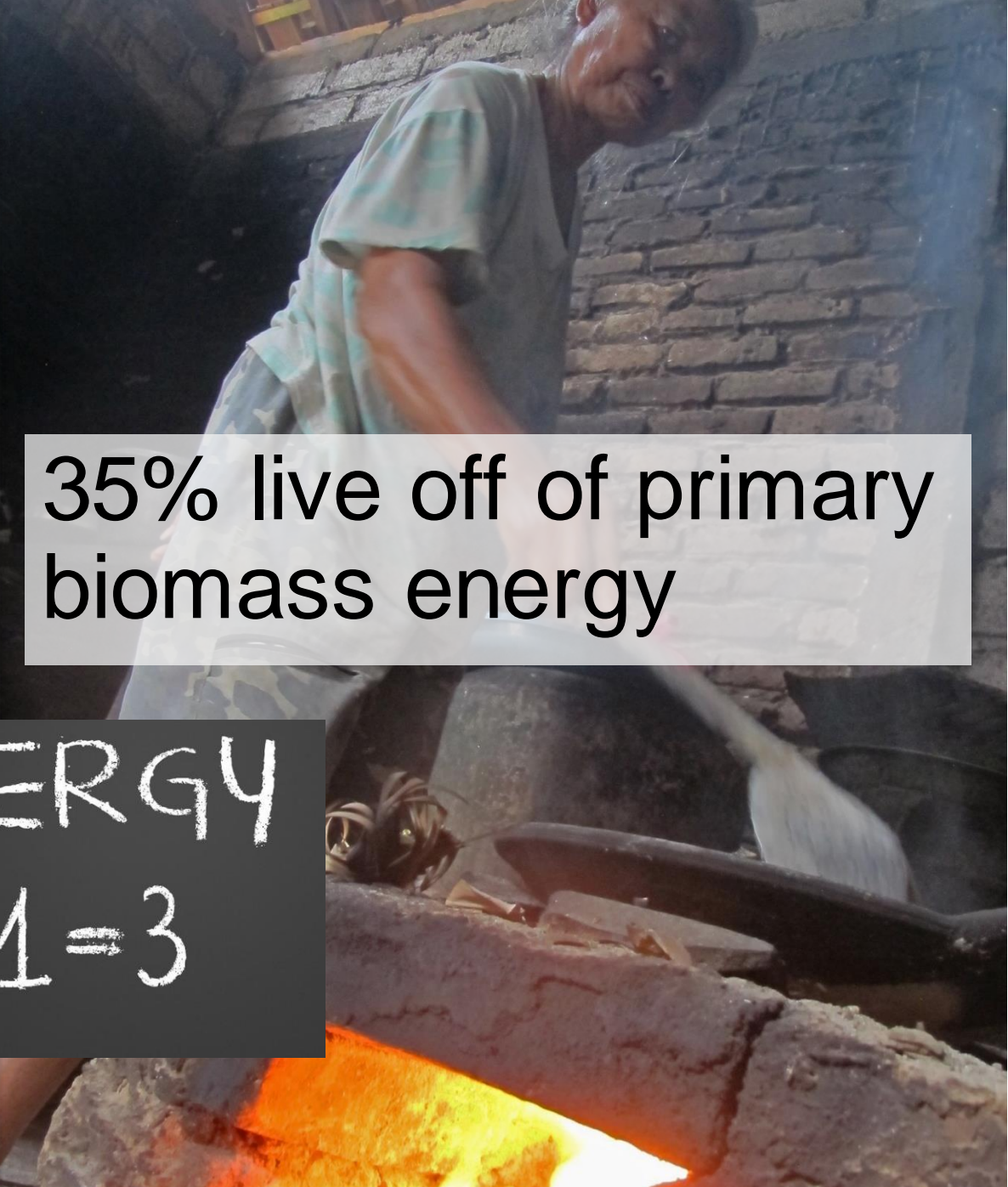


Clean sustainable energy



A man is shown in profile, looking out over a vast, open field under a cloudy sky. The field appears to be a mix of dry grass and some green vegetation.

30% are farmers
impacted by climate

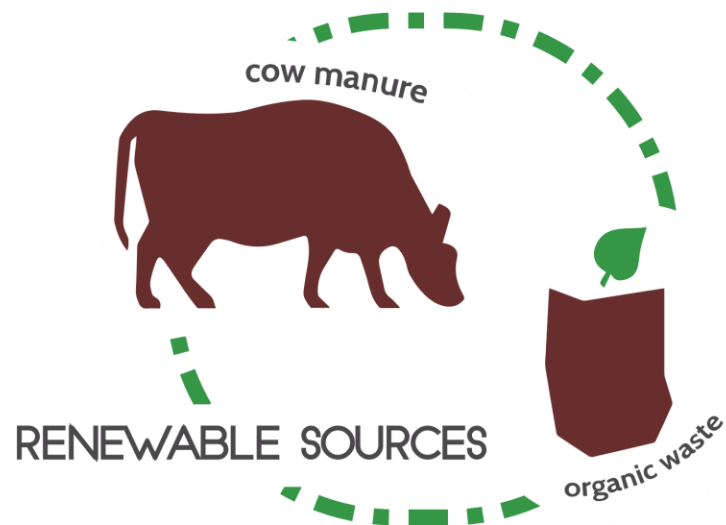
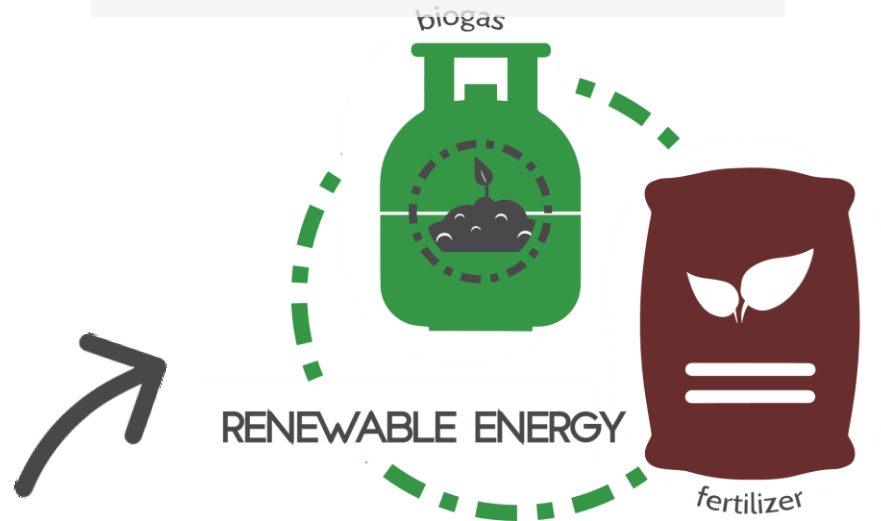
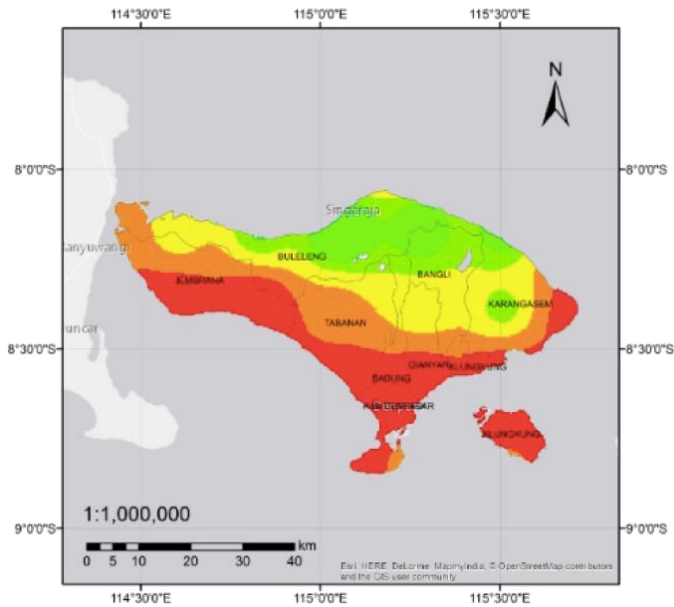
A person is shown from the side, using a traditional brick stove. The stove is made of dark bricks and has a large opening at the bottom where a bright orange flame is visible. The person is wearing a light-colored shirt with a green and blue pattern.

35% live off of primary
biomass energy

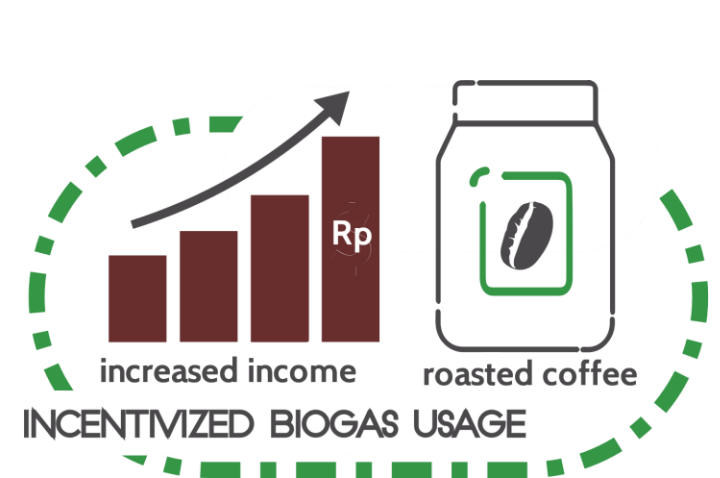
SYNERGY

$$1+1=3$$

biogas-coffee

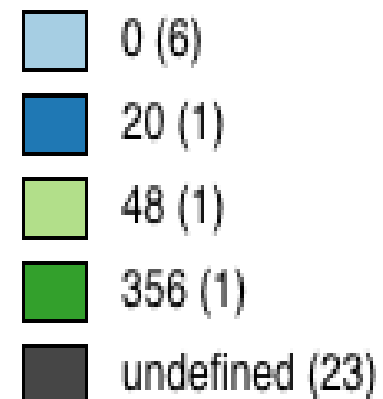


SYNERGY
 $1+1=3$



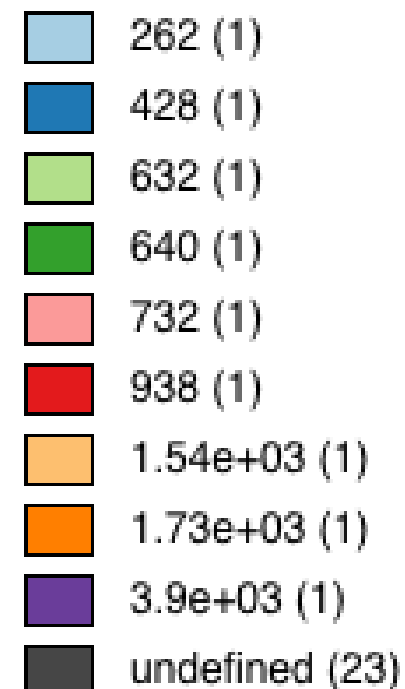


Unique Values: year2009



GDP ↗ 3% & Job ↗ 3000+

Unique Values: year2016



Jembrana, West Bali

CAKRA



Golulada, Ende

LUKAS





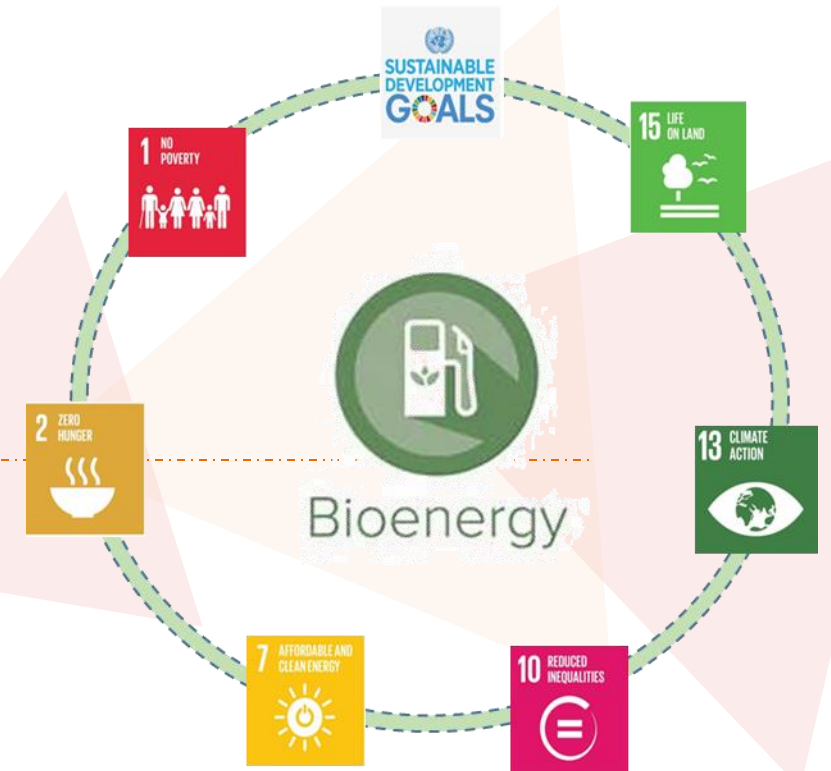
Indonesia NDC
Target -29%/-41% in 2030

Electrification Ratio



Energy Policy
(Renewable Energy Target)
2016: 6.9%
2025: 23%

Bioenergy
Potential: 34 GW
Baseline :1,74 GW



Designing and implementing transformative win-win solutions in peri-urban settlements of South Africa: The Genius of Space and Zonke Energy examples



Lauren
Hermanus

Project Manager,
African Climate
and Development
Initiative

South Africa: Context

- Global: Approximately one-quarter of the global population lives in informal settlements or “slums”
- SA: 13% of Households in informal settlements.
- Electricity costs and water & sanitation are 2 most important challenges facing municipal governments
- South African national Community Survey from 2016 reported that only **44.4% of households have access to piped water within their homes.**
- Rigid public sector structures and processes struggle in these context.
- People improvise solutions in the absence of formal assistance.



South Africa: Green-Win Aims

- Green public/private/people **pilots** can fill in the **gaps** that top-down systems are not reaching.
- Identify innovative (private and public sector) **green business models** that are **transforming access to basic services** (energy, waste, water) through bottom-up experimentation.
- Collective identification of **enabling and disabling constraints & potential for scale/replication**
- Understand how new forms of energy services and waste/waste-water management can **better support community resilience** (& climate resilience).



Two project examples from South Africa...

Project	Scale of projects	Focus	Type	Type of Green-Win and Lead	Description	Investment or Funding
Zonke Energy	Neighbourhood	Solar basic electricity - Urban informal	Green Business Model: A firm selling a green product or service to a customer.	Green Business Model Firm → customer (households)	Pilot-stage project delivering basic energy access on a pay-as-you-go basis in an informal settlement on private property	Investment Funds (Private equity, hedge)
Genius of Space	Neighbourhood	Wastewater management - Urban informal	Leveraging Public Funding: A government funding a climate project that generates a revenue stream usable for paying back part of the public investment.	Green Business Model Leveraging Public Funding Government (provincial) → firm + community organisations → customer (local government, community, household)	A completed pilot-stage biomimicry-inspired community infrastructure project delivering solid waste and wastewater management in an informal settlement. The project is ready to expand to beyond the pilot (including to other areas).	Funding National and multilateral development banks - Government equity

Genius of Space: Improving local solutions



Genius of Space: Community-led design



Genius of Space: Overview

- **Langrug pilot:** Developing a model for nature-inspired greywater and solid waste management (proto wastewater & sanitation solution).
- **Target market:** Low-income, informal settlements in South Africa.
- **Social benefits:** Improved environmental sanitation, local skills and capacity transfer, local economic development opportunities.
- **Environmental benefits:** Improved water quality entering stormwater system and Berg River.
- **Social attitudes and behaviour:** Local ownership/maintenance is going well.
- **Financial viability:** Comparable to convention municipal costs. Drawing in private investment is a challenge.
- **Government interaction:** Government taking the lead (not local government) and the project is being replicated/iterated in two other locations.

Zonke Energy: Filling in power gaps

ZONKE
energy

www.zonkeenergy.co.za



Zonke Energy: Overview

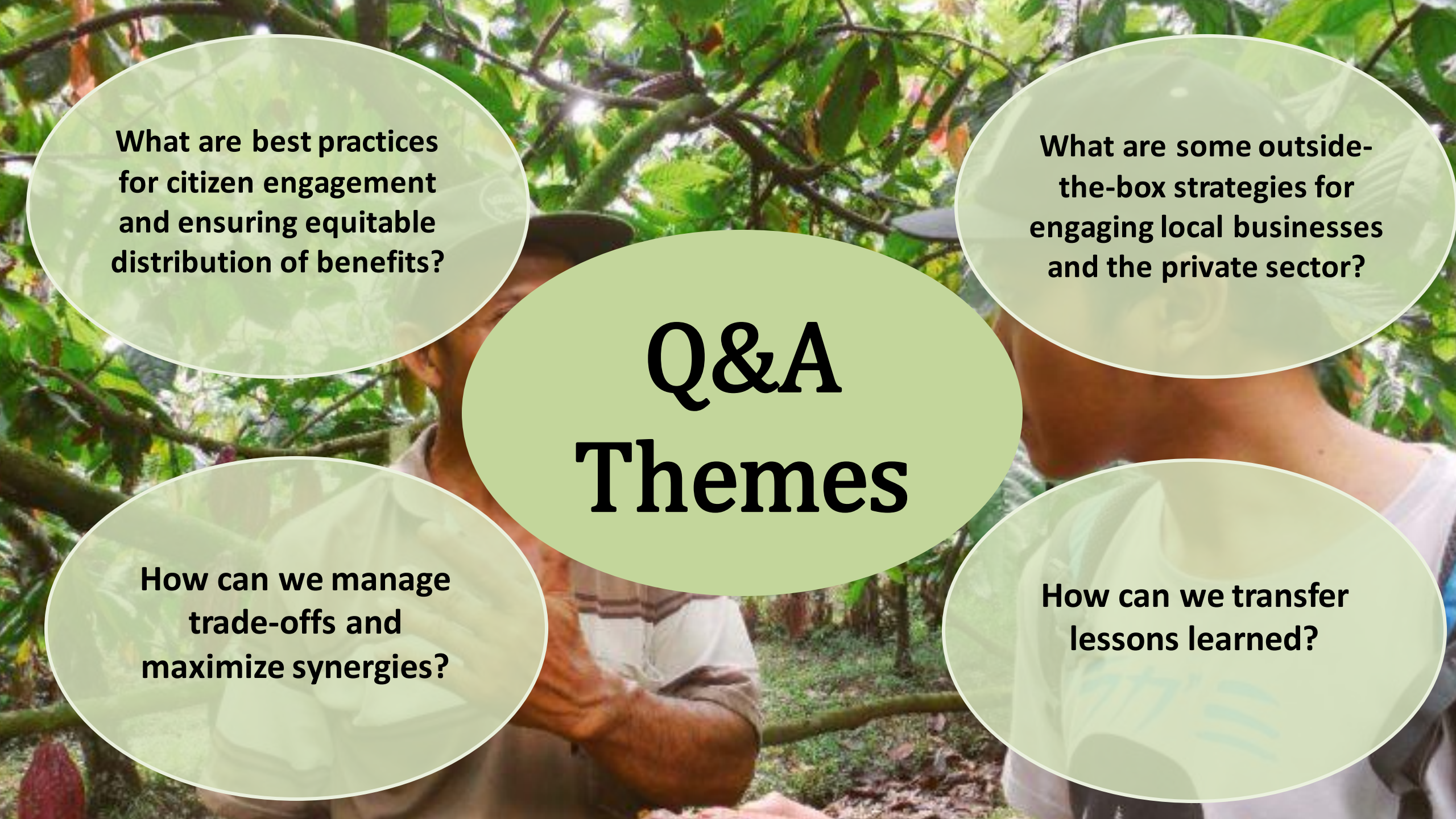
- **Jabula Pilot:** developing a model for a micro-utility company servicing informal settlements renewable energy (very few examples in SA compared with other African countries).
- **Target Market:** Urban, low-income, off-grid communities.
- **Social Benefits:** Access to electricity, fewer health risks, cost savings, access to communications etc.
- **Environmental benefits:** reduced emissions from harmful fuels.
- **Social attitudes and behaviour:** No tampering, no theft, 100% payment compliance, “happy clients”, technology proven, strong demand from remaining families.
- **Financial Viability:** ROI feasible but financing is a challenge.
- **Government interaction:** Remains a challenge and unavoidable in the area of energy provision.



What have we learned?

- “Resilience” is not about people bouncing back on their own
- Where people are caught in patterns that limit or erode wellbeing, collaborative approaches can support a more dynamic (positive, socially just) kind of resilience
- Success is not known in advance; new sustainable trajectories need to be actively cultivated/opened
- Community engagement/different perspectives are not trivial
- Long-term flexibility of development strategies can matter more than short-term efficacy of a particular technology
- Still a challenge to move from pilot to other forms of implementation - Scale (scaling what, for whom, where and why) requires investigation.



The background of the slide is a photograph of two people in a lush, green forest. The person on the left is wearing a brown hat and a light-colored shirt, and the person on the right is wearing a white shirt. They are both looking towards the right. Overlaid on this image are four green circular callouts with white borders, each containing a question. In the center is a larger green oval containing the title 'Q&A Themes'.

What are best practices for citizen engagement and ensuring equitable distribution of benefits?

What are some outside-the-box strategies for engaging local businesses and the private sector?

Q&A Themes

How can we manage trade-offs and maximize synergies?

How can we transfer lessons learned?

***Thank you for joining today's webinar on
“Win-Win Solutions for Clean Energy, Smart Agriculture,
Sanitation and Resilient Communities.”***

***This webinar was recorded and will be uploaded to the GGKP
website: www.greengrowthknowledge.org***

Please kindly complete the webinar survey.