TOWARDS ECO-SYSTEMIC LIVING : LEARNING WITH INDIGENOUS LEADERS IN AFRICA AND INDONESIA THROUGH A COMMUNITY OF PRACTICE : IMPLICATIONS FOR CLIMATE CHANGE AND PANDEMICS

Advances in Systems Sciences and Systems Practice

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Abstract: **Problem** The big issues of the day are poverty, climate change and pandemics linked with rapid habitat loss and urbanization in Africa and Asia. The root causes are a lack of representation of multiple species, a lack of accountability and an unsustainable way of life. We are addressing ways to address governance and re-generative living to protect the commons with Indigenous communities in Africa and Indonesia . In Venda , the Tshidzivhe Project and Bamboo co-operative has been set up as part of an action research project. The aim is to learn from Indigenous leaders) to raise awareness and capabilities for co-operative social enterprise in line with Indigenous local knowledge systems and to assess the process.The project responds to the UN policy to address food, energy and water security and the need to redress high rates of urbanisation and the cascading impact on human security (UN Urbanisation Report, 2014, UN Sendai Risk Platform, 2030, IPPC, 2020). In terms of innovation we draw on and adapt the principle of the 'One Village, One Product approach', decreed by President Jokowi (2014) in Indonesia, to enable working across sites to facilitate the mapping of opportunities and the cross fertilisation of ideas . It uses a gender mainstreaming and relational multispecies lens to support wellbeing. **Rationale:** The rationale is that forests need to be protected as they are 'the lungs of the planet', to cite Chief Raoni, nobel peace price nominee for 2020. **Methodology:** We are using participatory action research and mixed methods. The focus is on values, perspectives and ways to make a difference through addressing a range of practical concerns, such as: food, energy and water security. Ontologically our perspective is shaped by recognising kinship with nature, as expressed by Indigenous custodians. Epistemologically we explore ways to enhance education based on working across cultures and disciplines using a cross cultural approach and mixed methodology. Our team includes members with social , cultural and policy knowledge as well a a team member with high level computing skills. Axiologically we support the notion of transformative research that promotes balancing non-anthropocentrism with an approach that draws on Indigenous wisdom whilst addressing patriarchal notions through gender mainstreaming . The Balancing Individualism and Collectivism Special integration group has focused on learning by doing using an applied mixed methods approach. It is based on a community of practice spanning NGOs, community projects and university departments. Some of the fieldwork is supported by a small NRF fund, some funding from UNISA and in kind support from participants who meet regularly on line. We work together because of shared values and mutual respect . **Results:** The work in progress paper reflects on the lessons from two case studies in order to discuss 1. how they address Elinor Ostrom's principles to protect the commonsand 2. Implications for social, economic and environmental challenges with a practical focus on food, water and energy security through regenerative enterprise. The two case studies are of forest communities in Venda in South Africa and Ciptagelar, West Java, respectively. They are discussed in terms their social, environmental and economic approaches. The research is conducted together with local leaders who contribute to praxis and writing up the results. We hope to set up and monitor a project to support organic farming in Venda and to learn from these (already functioning)organic communities, so that lessons can be scaled up and shared in the hope that people will be encouraged to follow their examples, in line with President Jokowi's One Village, one or many (organic) enterprises which has resonance in South Africa. In both cases the communities see themselves as related to nature, in the case of Venda, they express this as a totemic relationship and have been inspired to apply an ecological calendar which was taught to them during the time Mphatheleni Makaulule (second author) spent time learning from Amazonian leaders. In the case of Ciptagelar , the nomadic way of life is based on a sense of being stewards who do not commodify rice, a sacred source of life , which is in turn dependent upon all the co-existent creatures and ultimately the forest which is their home. In both communities the environment and people are priorities managed by observing the natural cycle. Both communities rely on an ecological calendar to guide the planning and harvesting of crops. In Tshidzivhe Venda a rigorous approach to planting crops, harvesting from the forest and re-planting the forest is observed and the entire community acts as caretakers and are required to ask permission before harvesting from the forest. Similarly, in Ciptagelar, West Java the chief reads the signs when it is time to move to another area and follows a careful approach to biodiversity ensuring that paddy is grown only for certain months so that other creatures can thrive during other months.

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Key words: principles, protecting the commons, circular economy and regeneration

1. INTRODUCTION AND POLICY CONTEXT AND RESEARCH BACKGOUND

"By 2050, we expect an additional 2.5 billion people to be living in cities with much of this growth happening in Asia and in Africa. But cities are already now and will be increasingly hotspots for climate impacts and risks. Therefore, they are critical parts of the climate solution and climate action taken in cities can also have benefits for connected settlements and rural areas."

Timon McPhearson, lead author IPCC report cited in the paper from the Stockholm Resilience Centre on the latest IPCC report.[viii]

The paper in the form of an essay and a reflection on two case studies using mixed methods and reliant (to a large extent on engagement through Zoom and email with locally based indigenous leaders in Africa and Indonesia. The paper makes the case that working with Indigenous people to protect forests is vital for our survival as indigenous forests absorb twice as much carbon as other agricultural land[ix]. Our starting point is acknowledging that systems designs need to start with values and my axiological starting point is not that traditional Indigenous systems are entirely right and modern systems are entirely wrong. Ironically both these forest communities (whilst giving clear directions for setting up a more circular and re-generative economy) have challenges as will be detailed below.

It is also worth commenting that Mode 2 systems sciences which think about boundaries , rather than working within them need to decide what and where to concentrate effort. Re-generation of the environment and mitigating climate change whilst supporting multiple habitats for social and environmental justice has never been more important. The world faces risks associated with the war in the Ukraine that has the potential of escalating in a global conflict in which chemical, biological and nuclear weapons play a role[x]. Research which suggested that human beings have become better is being called into question as images of atrocities emerge from Ukraine. Re-generation[xi] , wellbeing and justice require a focus on planetary boundaries , in order to avoid "existential risk" (Bostrom , 2011). Unfortunately, attention is being redirected away from climate change .

Forests are the lungs of the planet , according to Nobel Peace Prize nominee Chief Raoni (Forsetto, 2020). The indigenous people in Venda (led by Mphathe Makaulule) learned from the Amazon forest people and the paper focuses on the Action Research Project supported by the NRF. Globalisation and localisation , the balance towards local living shifted during the pandemic as communities and nation states became more reliant on local food and energy supplies. The locally based community that is self-reliant will become increasingly important.

What should that community look like and how could or should it be organised?

The paper considers 2 case studies of communities that follow Ostrom's 8 principles to a greater or lesser extent and which comply with or extent aspects of the ecocide law that could provide lessons. The research is located in South Africa, Indonesia and Australia and draws on insights from case studies .

Both regions face rapid rates of urbanisation with the attendant threats to food, water and energy security. The focus is on :

- Accelerating climate change and habitat loss resulting on species that have not normally been in contact being thrust together
- Increased urbanisation which will place pressure on food , energy and wate security
- Increased gaps between rich and poor as more funding will need to be allocated to defence.

Table 1.1 Summary of the policy context and challenges	
Context	• Displacement of people and animals as a climate change, war and pandemics and disruption of old style economies • Unsustainable way of life extraction of profit to the detriment of people and the planet

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	• Growing populations , increased urbanisation increased pollution and waste • Neglect of food, energy and water • Competition for resources • War • Food deserts
Complexity	Growing
Engagement	Lessening[1]
Logic	Fragmented – as different interest groups compete emotions and values
Epistemology	Experience of the elites vs the masses
Boundary spanning	Tendency to lapse into conceptual silos – governance and education
Power dynamics	Increasing levels of competition and risk results in the marginalisation of the most vulnerable, in terms of gender, class, age, ability or species.

The big issues of the day include war, pandemics and climate change. More funds are being allocated to war budgets and less on social and environmental justice, added to which is a lack of responsive systemic governance to address complex challenges. Poverty , climate change and increased levels of urbanisation have posed challenges globally. Recently war and pandemics have resulted in climate change being neglected, despite its being the core issue of the day. According to Yuval Harari (2022) the culture wars in liberal economies have weakened democracies and ironically the war in Ukraine has made liberal democracies realise that unity , national and international loyalty and alliances matter. As Harari (2022) stresses in his recent lecture on the impact of the Ukraine war, paradoxically the war has challenged liberal democracies to concentrate on what really matters, namely defending democracies as opposed to waging the so-called culture wars between the left and right[xii].Paradoxically the pandemic has resulted in more emphasis on local resilience and local production as supply chains have been disrupted. The war in Ukraine has led to further disruption as the price of oil surges adding costs to all stages of the production and consumption cycle. The challenge is characterised by Harari as democracies versus autocracies that do not respect borders. Rising fuel prices will lead to increased energy costs impacting transportation , production, supply chains, households and businesses alike. This has resulted in a shift from globalisation to localisation as a result of the current war in the Ukraine and as a result of communities and nation states became more reliant on local supplies during the pandemic when supply chains were (and continue to be) disrupted.

The locally based community that is self-reliant will become increasingly important and this has implications for governance which ensures that decentralisation supports balancing individual and collective needs in a shared habitat. As stressed elsewhere (McIntyre-Mills et al 2010:19-20) prior to the great unravelling that we are currently witnessing :

...democracy needs to be deepened... We are at the cusp of a new era wherein the nation state will no longer be the sole arbiter in defining the meaning of citizenship... (Kivisto & Faist, 2007: 140).

New ideas about citizenship, rights and responsibilities are emerging and new definitions need to recognise multispecies relationships.

In our life times we need to acknowledge that we could be or become asylum seekers or refugees displaced by conflicts or disasters (fire and flood) citizens within a state with minimal rights35 or we could be powerful citizens who are (overtly or covertly) dual or multiple citizens. Alternatively we could become transnational citizens who receive reciprocal rights (not merely because we are members of a commonwealth or federation, such as the European Union) but because we see ourselves differently, as citizens of 'one world' (Singer, 2002; Florini, 2001, 2003) where the social contract is extended (Nussbaum, 2006) to include young people, non-citizens and the voiceless."

The notion of nested systems and overlapping regions has influenced how we think about democracy and governance:

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[1] At the moment the digital divide is enormous. How can destitute people or for that matter the working poor afford computers? Instead of dumping computers we need to recycle them for the urban poor.

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		Table 1.2. Implications for transformative governance[xiii]	
	Old Bureaucratic public administration	New(er) forms of governance	Transformative praxis to protect multiple species
Accountability and power	Top down hierarchy	Contracting out with a market focus	Stewardship to protect living systems
Role	Rule	Moving from rowing to steering	Co-determination
Goal	Retaining power	Power sharing with the market for profit	Protection of wellbeing stocks and survival

1.1   Background

The research links with an ongoing project linked with Adelaide University and current connections with communities in South Africa and Indonesia supported by University of South Africa and the University of Padjadjaran. In South Africa we are working on supporting the setting up an eco-village enterprise. The Organic farm , Cape Town run by a 5 women co-op helped provided inspiration for our own research along with support from Stefanie Swanapoel who introduced us to PGSA , an organic farmer's association. Other sources of inspiration are the small scoping pilots in Indonesia, namely : Alamendah , Cibodas , Taramaja and Ciptaglar helped inspire setting up the Venda bamboo co-operative with indigenous women leaders, known as the Makhadzi. All the communities share in common the desire to balance agricultural development with protecting the forests . The leader of the Venda project, Mphathe Makaulule (funded by the Gaia Foundation) was in turn inspired by the Amazon leaders whom she visited to learn more about leadership . The key learnings from each of the projects is summarised below in terms of the way they address Ostrom's 8 principles , UN Sustainable Goals and Ecosystemic living.

Overall the Venda project (together with others detailed in a forthcoming volume on transformative education) addresses the question: What should/could transformation entail? We address scenarios and the implications each scenario poses for education, for example:

- *Education as usual* or neo-liberal *factory education* that *does not* address the convergent social, economic and environmental challenges
- *Steps towards alternative forms of education* at the primary , secondary, tertiary level linked at each level with Vocational Education and training that addresses the social, economic and environmental challenges to support a circular economy , biodiversity and food security
- *Transformative education nodes and networks* that balances individual and collective social, economic and environmental protection across rural and urban areas. This could be an opportunity to do some transformative work on the way to combine face to face learning in the community that draws on the local tacit knowledge and is supported by local e-learning hubs where people could meet, greet, learn new skills in a multi-generational way with paid facilitators who work to support on line learning that could support education and vocational training through a range of alterative options. This paper discusses transformative research . axiologically it is based on gender rights and multispecies rights as central in circular economies. The research stresses that in order for the process of regeneration and educational redesign to be effective, it needs to be based on a recognition of our diversity and interconnectedness as part of one of many interdependent living systems.
- The focus is on values, perspectives and ways to make a difference through addressing a range of practical concerns, such as: food, energy and water security. Ontologically our perspective is shaped by recognising kinship with nature, as expressed by Indigenous custodians. Epistemologically we explore ways to enhance education based on working across cultures and disciplines using a cross cultural approach and mixed methodology. Axiologically we support the notion of transformative research that promotes balancing non-anthropocentrism with an approach that

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draws on Indigenous wisdom whilst addressing patriarchal notions through gender mainstreaming . Australia is lagging behind in its commitment to cut emissions .

The research detailed in '*Transformative Education'* (forthcoming, 2022) underpins this research and the case studies contribute towards advocating for teaching systemic ethics as a form of life- long learning within nature's classroom to support social and environmental justice. Multiple species relationships, inter contextuality (to use Nora Bateson's phrase, 2021) and transdisplinarity are encouraged through many ways of knowing spanning the arts and sciences to inspire creativity with nature. Critical systemic thinking is both an individual and a collective responsibility through many ways of knowing spanning the arts and sciences to inspire creativity. A more relational understanding of human beings and other species is overdue. This critical role of transformative research supports 'education for sustainable development' (ESD) but there is a need to go beyond 'sustainable development' and to emphasise regenerative praxis.

2. TRANSFORMATIVE RESEARCH : DESIGN AND APPROACH

The research design focuses on two communities selected for their endeavours to protect sacred forests that are vital for the wellbeing of the planet whilst also being engaged in a form of re-generative agriculture. The aim is to study how they protect the commons and to analyse the communities in terms of Ostrom's 8 principles

2.1 Area of concern and research questions

The paper considers 2 case studies of communities in terms of Ostrom's 8 principles to assess the extent to which they are in line with these principles. The following table summarises the work in progress to date which stresses that to a greater or lesser extent they do indeed apply these principles and furthermore they also apply and extend aspects of the ecocide law (Higgins et al, 2013, and see McIntyre-Mills , Makaulule , Lethole et al , 2022 , forthcoming in which Makaulule explains how the principles of the ecocide law are applied):

"We as custodians of the Network of Zwifhos(saced sites) in Venda, have the moral duty to protect both our Zwifhos and our territories from being destroyed. If our Zwifhos are destroyed, our ecosystem will collapse, because these are the vital organs of our territory. It is our responsibility to do all we can to prevent this, which would be ecocide."(Makaulule, 2012)[xiv]

2.1.1 Table : Ostrom's[xv] principles for managing the commons

Principles	Process
• 1. Define clear group boundaries[xvi]	• The neighbourhood/village/council area is the boundary
• 2. Match rules governing use of common goods to local needs and conditions[xvii].	• Stories are the basis for developing shared narratives to underpin contracts
• 3. Ensure that those affected by the rules can participate in modifying the rules[xviii].	• Village level policy research based on story pathways and pathways to wellbeing software
• 4. Make sure the rule-making rights of community members are respected by outside authorities[xix].	• Village level policy research based on story pathways and pathways and mapping using local soft systems type applications • We are at this stage trying to collect stories to help scale up decision making[2]
Working towards the next steps	

[2] The engagement with the community is supported by a small NRF fund , some funding from UNISA and in kind support from participants.

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• 5. Develop a system, carried out by community members, for monitoring members' behaviour[xx].	• Influence map (see diagrams 4.1.1-4.1.3 below) based on analysis using Qualtrics and SPSS. (Wirawan, McIntyre-Mills et al in preparation)
• 6. Use graduated sanctions for rule violators[xxi]. •	• Laws and engagement processes can be supported by block chain to protect, track and trace organic agricultural products, for example and to show steps towards regenerative life styles that protect zero emissions and steps backwards towards 'business as usual' and a high carbon footprint. (Wirawan and McIntyre-Mills et al, in preparation).
• 7. Provide accessible, low-cost means for dispute resolution[xxii].	• Work through problem solving using face to face negotiations and pathways to wellbeing
• 8. Build responsibility for governing the common resource in nested tiers from the lowest level up to the entire interconnected system."[xxiii]	• Local councils and provincial /state level governments need to support the local areas through the platform of integrated engagement

Sources: Adapted from https://earthbound.report/2018/01/15/elinor-ostroms-8-rules-for-managing-the-commons and extends McIntyre-Mills, J.J, Makaulule M, Lethole, P., Pitsoane, E., Arko-Achemfuor, A, and Wirawan, R, and Widianingsih, I. Ecocentric living : a way forward towards zero carbon . A conversation about Indigenous law and leadership based on custodianship and praxis. *Systemic Praxis and Action Research* (in progress)

2.2 A community of practice linking case studies

The Balancing Individualism and Collectivism Special integration group has focused on learning by doing using an applied mixed methods approach. We have formed a community of practice spanning NGOs, community projects and university departments. The project team draw (in part) on Gunther Pauli's (2010) approach to developing a production, distribution and consumption cycle that supports regenerative social enterprise and reduces the risks of unemployment whilst fostering re-generative approaches that support wellbeing stocks (Stiglitz et al , 2010) . In terms of praxis (thinking and practice) the research is shaped by an ongoing collegial community of practice Our learning organisation approach follows these principles in order to ensure that small groups of people are able to work together in co-operatives to manage the co-operative using block chain to ensure that the transactions cannot be altered. This learning organisation and learning community approach (updating Senge, 1990, 2006) aims to support social inclusion and green, re-generative entrepreneurship.

The Tshidzivhe Project and Bamboo co-operative has been set up as part of an action research project. The aim is to learn from Indigenous leaders (see McIntyre-Mills, Makaulule, et al, forthcoming and Lethole et al, 2022 forthcoming) to raise awareness and capabilities for co-operative social enterprise (Nussbaum, 2011) in line with Indigenous local knowledge systems (Odora Hoppers, 2013 and SA IKS policy, 2004) and to assess whether an online community of practice enables participants to learn more about community co-operatives in terms of potentials and pitfalls, bearing in mind the UN Sustainable Development Goals.

Overall, the intention is to explore the extent to which social enterprise can help to re-generate social, economic and environmental wellbeing and to achieve a sustainable living . We also aim to consider with participants via the action learning approach how can we build on the group approach (Ubuntu: "I am because we are) combined with The Indonesian model called "One Village One Product" " and the adapted model "One village many enterprises" (Claymore, 2007, McIntyre-Mills et al., 2021, forthcoming) and the concept of Ecovillages (Shiva, 2020), which are aimed at activating Sustainable Development.

Thus the focus is on: a) researching whether a community of practice (as per Wenger et al., 2009) can help to support raising awareness after viewing webinars by Janet McIntyre (who publishes as McIntyre-Mills),Rudolf Wirawan and facilitators of a successful social enterprise project in South Africa and Indonesia (translated into Venda) on the need for a green circular social enterprises and whether the webinars plus workshops after the webinars help to support a community of practice which advances capacity building on how to set up a community co-operative in line with social and environmental considerations congruent with regional/international and the UN Sustainable development Agenda (2030). The project supports the policy agenda underlined by the IKS Policy (2004), the South African Government Voluntary

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Review (2019) and Odora Hopper's (2013) plea for more mode 2 engagement to promote IKS across the sectors, as well as Chilisa's view on Sustainable Development (2018). It also responds to the UN policy to address food, energy and water security and the need to redress high rates of urbanisation and the cascading impact on human security (UN Urbanisation Report, 2014, UN Sendai Risk Platform, 2030, IPPC, 2020). In terms of innovation we draw on and adapt the principle of the 'One Village, One Product approach', decreed by President Jokowi (2014) in Indonesia, to enable working across sites to facilitate the mapping of opportunities and the cross fertilisation of ideas . It uses a gender mainstreaming lens which means that the focus will be on ensuring that gender diversity is central to wellbeing. Also, the involvement of some youth in setting up sustainable social enterprises is important to this project. The so called green revolution that supports petrochemicals and terminator seeds is not the same as ecovillage nodes and hubs. Drawing on the UN's urbanisation report, the majority of the world's population will be living in cities by 2050 which will pose a security risk (Sendai Risk Platform, 2015-2030). Risks associated climate change will exacerbate the convergent social, economic and environmental challenges associated with urban living. This has also been stressed by the Sendai Risk Platform and associated reports (2015-2030).

We need to think about every step of the currently linear market and introduce a circular economy that works with nature in such a way that production, marketing, distribution and consumption choices that re-generate living systems. Vandana Shiva (1991) in 'Violence of the Green Revolution' has stressed that industrial type agriculture has done more harm than good as it harms biodiversity and results in debt as farmers cannot afford the expensive fertilisers and seeds. The Tshidzivhe Project and Bamboo co-operative has been set up as part of an action research project and supported by training on an ecological calendar.

The communities are :

- *Tshidzivhe Project* in Venda with indigenous leaders who combine sustainable living with protecting the sacred forest. They are part of a community of practice inspired by Ocean View Organic Farm . The latter provided inspiration for setting up a co-operative. We work together because of shared values and mutual respect. The case studies have been detailed elsewhere[xxiv] (Lethole, Makaulule, McIntyre-Mills, Achemfuor,Wirawan,2022 forthcoming, McIntyre-Mills et al (2021) McIntyre-Mills, Makaulule et al, forthcoming and Widianingsih , McIntyre-Mills et al forthcoming) but the main points are summarised below. The two communities demonstrate indigenous community leadership and a plea for us – to value social and environmental justice and 'to stand together' , to use the phrase of Raoni, Nobel Peace Prize nominee for 2021.

- *Chiptagler* , a forest community in West Java which grows organic rice and has centred their life on regenerative living using swidden agriculture for possibly 600 years. The Ministerial Regulation No. 69/2013) stresses the importance of building on indigenous wisdom through ethnopedagogy (Komara et al, 2021). They live in harmony with the forest and the creatures who are dependent on it[xxv], by protecting 3 zones , namely a section that is sacred, a section where some harvesting can occur and a very small section that can be used for a period of time to support rice growing (Widianingsih, McIntyre-Mills et al forthcoming).

This (exploratory) paper addresses the need for balancing the needs of people and the environment through improving our understanding of multispecies relationships and creating opportunities for more sustainable living which is in line with the policy stressed by the South African Minister of forestry, fisheries and the environment, Barbara Creecy[xxvi] who recently stressed the need for a so-called 'new deal' for people and nature," at the ninth People and Parks Conference in Sandton , South Africa.

The latest IPCC report stresses:

"Right now, inadequate global action means the Earth is heading towards catastrophic warming of over 2°C. If all countries copied Australia's dangerously weak response, we would be headed for warming in excess of 3°C – far beyond anything it is possible to adapt to. We cannot afford to delay. Governments must slash emissions this decade and rapidly transition away from burning fossil fuels."

This paper discusses transformative research . Axiologically it is based on gender rights and multispecies rights as central in circular economies. The research stresses that in order for the process of regeneration and educational redesign to be effective, it needs to be based on a recognition of our diversity and interconnectedness as part of one of many interdependent living systems.

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In West Java the areas of Alamendah, Cibodas , Taramajaya are less isolated as a result of new roads built by Jokowi to assist in supporting the One Village One Enterprise Policy. All these areas focus on organic products and strive towards aspects of sustainable living with greater and lesser degrees of success. Alamendah has established a woman's group to help empower women, but at the time of our research only one woman was represented (and with decision making power) on the local village committee. Cibodas has a highly active network of young farmers dedicated to making farming more sustainable and striving to keep young people within the area. They are fully aware that the previous policy of President Soeharto (to institute the green revolution) by clearing forests and creating industrial style plantations with single crops, chemical fertilisers has not been a success. The areas that have been cleared are vulnerable to soil loss due to lack of ground cover, decreased water table and wind damage.

In Taramujaya the community are also committed to making more of an effort to protect the forest by re-planting bamboo and encouraging green tourism. They have provided recreational activities (and green tourism) in their area. Ironically one of the business opportunities is to provide recreation for the military sent by President Jokowi to clean up the Citarum river. This project has had mixed results because although the upper reaches of the river has been cleaned up, it has also been overstocked with fish by the military who hope to set up small business linked with fishing.

The Ciptaglar area is very different from these other projects in West Java in that the latter is more isolated and unlike the other areas has retained its Sumatran culture as well as a rice ecology that is governed by an ecological calendar. This forest community was set up by refugees from the Bantam province almost 600 years ago and has been widely documented. Their ecological calendar resonates with the calendar used by the Amazon leaders who taught Mphathe Makaulule who in turn has used this approach in Venda to teach her community to protect the sacred forest.

The community is organised in such a way that the forest is divided into three areas, the sacred, the area that can provide limited resources if harvested at the appropriate time and manner and smaller areas that are cleared and used according to a strict calendar involving the entire community and then rested for other months to allow for regeneration. When Abah Ugi (chief) , his wife and the leader of the rice rituals (a woman) decide it is right , the rituals are followed by the community. The songs, rituals and local wisdom are taught in a local school supported by a local radio and TV station which thy own and run. Abah Ugi is an electrical engineer and although the careful balance of the village remains unchanged , they introduce new technology to serve the community and nature. They have a high regard for their own local knowledge and they do not commodify their rice by selling it. Everyone in the community works together to produce a rice crop that is carefully harvested and stored.

The pedagogy and school curriculum is supported in terms of Indonesian law that recognises the importance of local wisdom.

The community also provides clear leadership roles for men and women and the leader has to co-lead with a wife. The community appears quite conservative in terms of gender roles , but students who show potential are encouraged to study at university. The cultural roots lie in Buddhist and Hindu roots and they place nature and balance first in all their decisions. Local wisdom is carried through oral culture taught in the form of art, songs, dance and rituals. The rice goddess is worshipped.

In terms of participation, the community are actively involved in all aspects of life and group discussions are encouraged, but the final decisions on protecting the way of life are made by the chief, president and ministers. They also decide when the community should move , based on protecting the balance of nature.

The two communities demonstrate indigenous community leadership and a plea for us – those who value social and environmental justice to stand together , to use the phrase of Raoni, Nobel price nominee for 2021.

2.3   Axiology : wellbeing, gender rights and multispecies rights are central in circular economies

In our research we are mindful that anthropocentric approaches are responsible for not valuing the fabric of life and that we need to change what, why and how we value the fabric of living systems. A way forward is through capacity building to enhance capabilities to understand the consequence of our choices by working respectfully with indigenous leaders to learn with and from them, in order to resource the commons:

2.3.1 Wellbeing
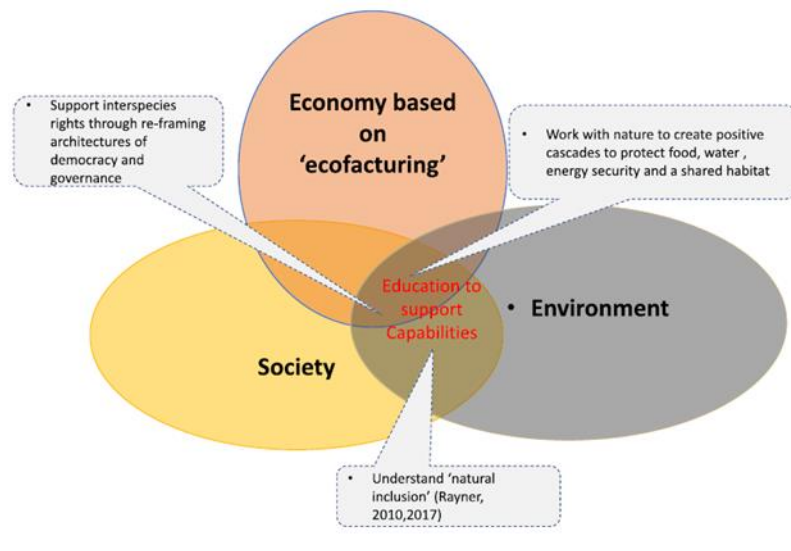
Source : McIntyre-Mills, J. J.(2021). The importance of relationality: A note on co-determinism, multispecies relationships and implications for COVID-19. *Systems Research and Behavioral Science,* 1–15. https://doi.org/10.1002/sres.2817

"Well-being stocks are supported by balancing individualism and collectivism (McIntyre-Mills, 2021). Sources: extending Elkington (1997) triple bottom line accounting and accountability through engaging to protect well-being stocks (Stiglitz et al., 2010) by balancing individualism and collectivism (McIntyre-Mills et al., 2018) through (a) enabling capabilities (Nussbaum, 2011) so that (b) local residents work with nature.(Pauli, 2010) in ways that (c) support the commons (Ostrom, 2014) through (d) scaling up local projects to protect habitat for multiple species (McIntyre-Mills, Corcoran-Nantes, et al., 2021) and protected by an ecocide law (Higgins et al., 2013) that respects living systems.(Wadsworth, 2010) " (McIntyre-Mills 2021: 8)

The research contributes to a new area: namely the commons as a process and a sense of connection to living systems, rather than as a resource 'held in common', to cite Bollier (2011): ***"The commons is not a resource.*** It is a resource *plus* a defined community *and* the protocols, values and norms devised by the community to manage its resources. .."…:http://www.bollier.org/commons-short-and-sweet"

The social enterprise project in South Africa is linked with a community of practice which includes colleagues in Indonesia. The focus of the community of practice is on earning, learning and growing a future to develop a viable social enterprise around local products , sustaining the ecosystem and creating ways to market products on line.

Drawing on the Participatory Guarantee Systems PGSA[xxvii] the focus is on : the "Health of all species, Ecology to support multiple species and diversity, Fairness to support social and environmental wellbeing and justice - including gender rights, rights for the marginalized and care for multiple species". This agenda fits well with the values that underpin our transformative research, based on mixed methods which include engagement through scenarios and storytelling as a way to understand complex local needs. Scenarios are a useful step along with listening to learn more about local perceptions about how we should live our lives in relationship with others. We assume that wellbeing is linked with an integrated wholistic approach to all species and that we should share rights with other species by providing recognition and protection in law (see McIntyre-Mills, 2019, 2021, McIntyre-Mills, 2022 and McIntyre-Mills et al 2011: 19, 24-27) which is updated below as follows :

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2.3.2   Best Case Scenario: An Inclusive, Creative Society That Balances Individual And Collective Interests to support living systems

We live in an environment that can support this generation and the next. The rights of all species are recognised and we support a form of Ecocide Law (Higgins et al, 2013) to protect our shared habitat, forests are our lungs, water is our lifeblood . We are the earth and breathing makes life possible. We understand that our shared wellbeing is determined by balancing individualism and collectivism (McIntyre-Mills, 2021 through engaging to protect well-being stocks (Stiglitz et al., 2010) by balancing individualism and collectivism through (a) enabling capabilities (Nussbaum, 2011) so that local residents work with nature in ways that support the commons (Ostrom, 2014).

Animals have rights and that we are all mutually dependent on a shared habitat. We agree with children who believe in fairness to animals[xxviii] and that we should move towards a plant based diet.

All people who are locally resident have a say in local public Agoras. Young people (below the age of 18 have a say in youth Agoras linked with places of vocational and applied learning. Those who wish to do so, attend the face-to-face meetings in the local town hall. Others log on to the website to follow the debates and to add their own ideas using an easy to use on line engagement platform. The summaries of ideas are shared with other local governments. These findings are shared by local government representatives at a regional forum , which is held to address whether quality of life concerns are being met in a timely, transparent manner. We define quality of life in terms of social, economic and environmental indicators by the people in terms of what works, why and how. Housing is affordable and made of sustainable materials. We have faced up to the convergent social, economic and environmental challenges and we are resilient. We live in clusters of modest, well-designed homes. We share rain tanks and solar grids that are subsidized by local governments. Poor local governments and rich local governments form twinning arrangements to support one other. No one in our community is homeless, because those who are ill or unable to work are assisted in community housing where they contribute in many different ways to public projects spanning home construction, food production, repairs, art projects and recycling materials. They learn skills and develop their capabilities through education that fosters freedom and diversity to the extent that it does not undermine the rights of others. Alternative energy *powers* our living and working areas. The new status symbol is the environmentally friendly lifestyle. Public transport is green. Green powered vehicles are shared through local hubs for private use and public transport is widely available. Old style vehicles are no longer cost effective and have been re-purposed. The green economy supports a vibrant, circular job market spurred by subsidies to enable packaging goods, housing people, transporting people, educating and entertaining the public. All members of the public are encouraged to share their experiences and ideas for living sustainably. The futures market has been reconstructed by overarching regional governments to take into account the air, water and earth we need to grow organic, safe food. People develop new economies and new trading systems that enable them to have time to enjoy many activities. The clothes and shoes we wear are made of renewable resources. Regenerative living is symbolised by supporting organic options, for example fabric shoes are the new chic symbols! We understand that by growing our own vegetables and becoming mostly vegetarian, we will help to minimise the worst effects of climate change. We act now, because we know that immediate actions are required. Most waste is recycled locally and used for building or composting. We also rely on organic materials for all our living requirements including buildings and manufacturing. Packaging is designed to ensure that waste is minimal. Animals live in a carefully monitored environment to ensure their quality of life and ours. We are better off because we respect ourselves, one another (including sentient creatures) and the environment. Bird flu, swine flu and bovine disease are unheard of in this scenario. We no longer take too many antibiotics, because we encourage prevention and the protection of our immune systems. We live in harmony with the people of our region and our economy prospers through being able to work in one another's countries. We learn many languages. We are enriched by the diversity of language and culture. We are free and diverse in our neighbourhood, sub national region and super-national region, to the extent that our freedom does not undermine the freedoms of others.

Residents of each local area can voice their concerns. For example, the concerns that they raise about living in the hills or on the plains or near the coast are given careful consideration when making complex policy and planning decisions to support safe communities. Community networks are formed to enable people to discuss their fears about bush fires, drought and the inundation of coastal properties. People who are worried or stressed are able to access specific services to address their mental health needs and their practical concerns about building regulations and the safety of their neighbourhood. Through interactive democracy and governance software, the ideas of local people are scaled up. People have a say in ensuring social and environmental justice. We

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are happy and creative, because we have time to sleep, make slow food (in contrast to fast food, which is unhealthy and expensive), talk to our neighbours, work in communal gardens, irrigated by water harvested and saved in many ways. We have green parks where the trees look healthy because they thrive on grey water. We play sport and express ourselves in a range of art forms. We have hope for the future. We do not commute long distances to work. We meet in both virtual and local communal areas. We have inexpensive technology. By living in ways that not only sustain, but regenerate resources, our desire for recognition and status is supported. We live not only for ourselves but for others and the environment. As a result of thinking about the consequences for our own family and neighbours and also for the next generation of life, we make decisions based on an expanded form of pragmatism. We understand that what we do to others and to the environment, we do to ourselves. We have made every effort to prevent conflict and mitigate the worst aspects of climate change through our everyday actions."

2.1.2. Slow , small Changes are no longer a viable option

People make slow annual progress towards goals that they meet for the benefit of their children and grandchildren. But they do not move fast enough. People of all ages and from all walks of life who are able to 'join up the dots', help to motivate faster progress towards a better future. They are motivated by concerns for others and the environment and are becoming increasingly less selfish and more concerned about the common good. They empathise with others. Local governments and non-government organizations take the initiative. We hold workshops to demonstrate how people can make a difference to prevent conflict and mitigate climate change. We listen to the people and help local groups to respond to local challenges. Together we undertake model projects that demonstrate how it is indeed possible to live differently. We model different ways of thinking and through 'living the changes'. We show that it is possible to balance individual and collective interests, because we are able to create alternative ways of governing at a regional level.

2.1.3. Worst Case: Business As Usual And A Large Carbon Footprint

"We continue to believe in economic arguments that ignore the social and environment. We continue to think that our way of life is sustainable and are not prepared to manage the risks of climate change by changing our way of life or by realising that we need to re-generate local habitats by living with nature. We see the increasing risk of drought, bush fires and floods as unrelated events or deny that climate change could mean rising temperatures in some areas and plummeting temperatures in others (as melting ice effects the ocean currents).

The sea is used as a dumping ground and it no longer helps to regulate our climate. More and more of us suffer from viruses and food poisoning. Animals are diseased. Most of our rivers are polluted and many have dried up. We fight over non-renewable energy and natural resources. We export our waste material to poorer nations who 'offer' to store it.

'The government' and 'the economy' are blamed for the problems, but we do not make any changes to our personal lives, because it is too hard, or we rationalise that it is not our problem. The corporate business sector continues to tell us that the market self -regulates. We compete with one another and are proud to wear designer labels or to carry designer packages. We engage in fund raising activities and give money to charity. These small gestures are to enable us to pretend that we are making a difference. [Governments refuse to meet the requirements to minimise emissions …., because it is considered ' bad for the state of the economy'.] We continue to wrangle [despite the conclusive evidence in the lates IPCC reports (2022) on climate change that we are living beyond the limits] We cannot achieve agreement internationally as to how we will go about reducing our emissions and changing our way of life. We feel anxious, stressed or depressed and we use drugs, alcohol and shopping to provide temporary relief. We waste our time in front of television and watch mind numbing programs or endless media entertainment options so that we ignore the problems in our neighbourhood. We withdraw and do not know the people in our street. We feel we cannot be bothered, because we are too busy making a living or worrying about our own problems. We base our decision on narrow pragmatism, because we think about the consequences only for ourselves and not others and the environment. We believe that our power and profit must be driven by self-interest and the bottom line, namely ensuring profits in the short term at the expense of others and the environment.. We think that social and environmental considerations are 'externalities', rather than imbedded within the current system."

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3. A SYSTEMIC ACTION LEARNING APPROACH USING A COMMUNITY OF PRACTICE TO SUPPORT THE GREEN CIRCULAR ECONOMY: A NEW FORM OF EDUCATION TO SUPPORT EARNING, LEARNING AND GROWING A FUTURE

The aim is to learn from Indigenous leaders to raise awareness and capabilities for co-operative social enterprise in line with Indigenous local knowledge systems (Odora Hoppers, 2013 and SA IKS policy, 2004) and to assess whether an online community of practice enables participants to learn more about community co-operatives in terms of potentials and pitfalls, bearing in mind the UN Sustainable Development Goals. The project supports the policy agenda underlined by the IKS Policy (2004), the South African Government Voluntary Review (2019) and Odora Hopper's plea for engagement to promote IKS across the sectors. It also responds to the UN policy to address food, energy and water security and the need to redress high rates of urbanisation and the cascading impact on human security (UN Urbanisation Report, 2014, UN Sendai Risk Platform, 2030, IPPC, 2020). In terms of innovation we draw on and adapt the principle of the 'One Village, One Product approach', decreed by President Jokowi (2014) in Indonesia, to enable working across sites to facilitate the mapping of opportunities and the cross fertilisation of ideas . It uses a gender mainstreaming lens which means that the focus will be on ensuring that gender diversity is central to wellbeing. Also, the involvement of women and young people in setting up sustainable social enterprises is important to this project.

The ongoing research aims to foster collaboration and learning with Indigenous leaders to:

- Advocate for and support social and environmental justice through creating jobs in a circular green economy.
- Explore ways to support multiple species relationships and transdisplinarity through many ways of knowing spanning the arts and sciences to inspire creativity with nature.
- Contribute to theory and practice by making suggestions as to how to re-frame the content, structure and process of education for transformation and makes a case for a more relational understanding of human beings and other species.

Overall, we explore the extent to which social enterprise can help to re-generate social, economic and environmental wellbeing and to achieve a sustainable living . We also aim to consider with participants via the action learning approach how can we build on the group approach (Ubuntu: "I am because we are) combined with The Indonesian model called "One Village One Product" " and the adapted model "One village many enterprises" and Shiva's concept of Ecovillages which are aimed at activating Sustainable Development.

The Tshidzivhe project leaders are dedicated to protecting the sacred forests and lake. Like the Ciptagelar area they follow an ecological calendar and identify closely with nature. The Makhadzi (women leaders) who support the elected chief are in charge of rituals and carry oral histories about planting and agriculture in their songs and dances. Each person in the community has responsibilities for protecting the environment.

Mphate was named " Builder" by her father the chief. Her clan name is warthog and she is stubbornly determined (like a warthog) to protect and re-generate her community. She is currently undertaking her MA and works with another member of the chief's family Pat Lethole who has the clan totem of elephant and she works to protect the community through her patience and ability to rise above challenges. She is based at UNISA and is also currently undertaking a higher degree. Together we have formed a community of practice created through a collegial friendship network which began over 35 years ago when I met Norma Romm who is an academic at UNISA and who has connected with other members of our shared networks resulting in cross fertilisation across our projects involving face to face workshops and field work by members of the community of practice in South Africa and Indonesia.

3.1 BOX : Tshidzivhe Systemic Praxis using a community of practice to support the green circular economy

3.1.1 The area of concern and problem addressed by the Tshidzivhe project

The research approach explores to what extent can action learning, supported by online engagement, help to inspire and empower participants to enhance or set up a community owned social enterprise? Sub questions include What works in practice (and why does it work) to facilitate, support and encourage the concept of "One Village, many (social) enterprises"? What action learning processes enhance social, economic and environmental wellbeing in line with an Ubuntu-group approach to forward UN Sustainable Development Goals?

The purpose of the research is to develop agency plus mapping critical pathways to wellbeing.

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The research explores what works, why and how to achieve wellbeing and aims to enable participants to engage with one another through telling narratives and exploring key themes through a structured dialogue. The research assesses whether webinars online can be to encourage an understanding of social enterprise plus by engaging in workshops and focus group discussions with people can help them not only to plan and set up a up co-operatives with a digital online marketing presence. The area of concern has not yet been explored in theory or practice in the literature on action learning**.** It is a novel approach to organising capacity building in relation to co-operatives set up in terms of the value of social enterprise (that is, enterprise not based solely on a profit motive but based on social and ecological justice principles too**).** We wish to support participants in their learning while also learning ourselves about this way of supporting people and whether aspects of our approach can be improved. The area of concern is to explore the extent to which on line learning can foster personal as well as collective agency though action learning design consisting of webinars , focus groups, workshops and discussions. The face-to-face engagement is facilitated by Pat Lethole and Mpatheleni Makaulule with the community participants. This topic has not yet been explored as a means to help participants to work with others (co-operatively) to enable them to earn a sustainable living in ways that support a circular economy and on line marketing to help grow their social enterprises :

> When discussing how social enterprise differs from business as usual the question was posed: How can social enterprise provide opportunities for people who are currently excluded? "If we work together in peace and harmony, other people will become interested to work together with us. ……..We need to have good heart … We need to bind together with love and unity…..We need to use a different language which is inclusive, to show ubuntu. In ubuntu we need to use language of " we" not "I ". …… *people work together for the benefit of many because they take turns in helping one another*.)

Venda has an oral tradition of passing on stories, songs and dances to protect their cultural and natural heritage. Pat Lethole and Mphatheleni Makaulule are custodians who work with the members of the community who have formed the Bamboo Co-operative and to develop partnerships with others in the community and to share the learning with others , including school children so that the local environment can be protected from development of coalmines and so that work can be created for the local community. The hoped for outcome is to train participants aged above 18 years who are already engaged in some social enterprise activities and wish to learn more about how to set up a community co-operative and b) how to participate in the circular, sustainable economy in line with gender mainstreaming principles.

The project will be monitored to assess what works ,why and how to enhance local job creation by and minimise poverty through the community of practice that will assist the team through Zoom and WhatsApp messaging and calls to enable local people to identify opportunities and to market their products. They will be invited to consider:
- What they have in material and non material terms
- What they need
- What the turning points for better and worse are
- Barriers
- Resources

The data collection focuses on narratives of what works why and how. By engaging participants are able to reflect on how they can turn personal issues , resources and skills into public resources through pooling resources to support social enterprises in a co-operative. The user-centric design enables the co-operative to grow through enabling people to find ways to help themselves and others.

These stories from self-selected participants will be used to explore the specific socio-cultural, economic and environmental contexts of social enterprise and how best to support social engagement within a circular economy which is the focus of the research , in the words of Mphateleni Makaulule, a custodian of the Lunde forest and women leader , known as a Makhadzi , linked with the royal lineage who (along with other custodians) shares totemic kinship with the sacred forest (see Lethole et al, 2021, forthcoming in which Lethole explains the responsibility to care for other sentient beings and their shared habitat and in particular her totemic relationship as the holder of the elephant totem which requires that as one who is related to the elephant she must respect and protect and abstain from eating the meat of an elephant as it is part of her identity (Romm and Lethole, 2021 ;88).

The significance of the Makhadzi is to perform the sacred rites of the forest and the value of sacred forest is vested in the Makhadzi's position (who have a mediation role to play in making a spiritual connection between ancestors and their creator. Each sacred sites is been identified by its totem which is linked to the biodiversity of the sacred forest (it is not a place of human activities like harvesting fruits, fetching wood and collecting medicinal plants. Its purpose is only for

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spiritual connection by custodians. The myths and taboo are linked to the protection and governance of biodiversity . According to Mphate[xxix]:

"On behalf of Mupo and Dzomo la Mupo, we established this organization because we have seen that we as Vhavenda people we live well when there are forests, rivers and mountains. Since childhood we learn that Venda is beautiful because of rivers and *Mademe* Jungles and Venda is a place of Jungle, mountains and rivers. Today there are people who are travelling by flights , travelling long kilometre to go to places where they can see the Jungle. Here in Venda , the forests are getting destroyed and that is why Dzomo la Mupo have been formed. Dzomo la Mupo has been formed to protect Mupo. When we are speaking here, there can be a person who do not know what is Mupo. Let me first explain what does Mupo mean. Mupo is a gift that God gave us. Mupo is everything that is not man made. We read in the Bible that God created everything and created us, human being in God's image. So we are also Mupo. We also resemble God as God created us as God's image. God saw the beauty of the land by the forests, mountains and rivers with all life living on the land including human being and all that is called Mupo. Everything that we see which is not made by human being , it is called Mupo….The forest is Mupo and these forests attract rainfall…."

In this report shared by Mphate[xxx] Badza Magoro the chairperson who protects of the forests is cited as follows:

… We are gathering here because of the destructions happening in Zwifho, sacred natural forests. Zwifho of Magoro is this mountain which people are seeing here. This mountain is the Zwifho of Magoro. Everyone here in Venda is surprised , even other Zwifho custodian here. … Every Venda person knows the Zwifho is an indigenous dense forests, not this naked mountain. Everyone will be asking … why the blanket of this Zwifho is removed , meaning why the forest of this mountain is removed? This gathering is necessitated by many   previous gatherings and we   are   requesting   the departments who are present here to listen to our concerns and assists to get solution to the problems facing the Zwifho. This mountain is the original creation place of Magoro clan, we originated here our ancestors originated here … There were different governance system by S.A government, from colonial, apartheid and now democratic one, yet our Zwifho have been interfered, disturbed and ourselves we were expecting democratic government to bring solution, yet it is still the same and become worse. …This territory is …a place of abundance of wealth of fertile soil called Lisananga, pace of unique indigenous tree called mishakule…This mountain has been experiencing lots of attacks , until we as clan have been removed by force from our homes here through those forced removal of people due to taking away land by apartheid government. Today Magor people are scattered all over in S.A … Today our Zwifho are always vulnerable by many trespassing …… .Zwifho should not be disturbed , its indigenous forest, should remain as they are.

Mphatheleni Makaulule(2021) in this same report continues as follows :

"The knowledge is with elders and children want a space of learning and elders want to remember their life time experiences so that they share the knowledge with youths and children . Teachers too want to teach about this knowledge. Learning from Amazon Columbia in 2006, 2008 and 2009, the ecological mapping become Dzomo la Mupo tool to learn mapping the indigenous knowledge….The process involves participatory methodology, It is a dialogue where elders tell stories and youths and children map the knowledge in a form of pictures. Teachers roles is to learn and guide school learners during the mapping."

Mphatheleni Makaulule explains:

"Our source of law is our territory, which has given birth to us. Our customary laws come from our Story of Origin, from our ancestors and from our detailed observation and relationship with our territory over generations. We understand how the patterns and cycles of life are part of a complex system which includes the solar, lunar and celestial cycles. Our indigenous governance system is rooted in what we call Earth Jurisprudence – recognising that Mupo, the Earth, shows us her laws and how we are born into an ordered Universe. This is why we recognise the Rights of Nature to have "places where the Earth rests", like Zwifhos and other areas too. Nwari created everyone, not just humans- so all creation has equal rights to exist. "

The need for a new form of praxis and law is summed up by Mphathe(2009) in this video:

Source: https://www.youtube.com/watch?v=nMDauMbiANI Mpatheleni Makaulule on Earth **Jurisprudence on** 17 Dec 2009 Mpatheleni gives an interview to the Gaia Foundation on Earth Jurisprudence during a gathering of thought leaders in the environmental movement at Schumacher College

Mphatheleni Makaulule (2021) explains that the ecological calendar :

"Communicates cyclical time such as the movement of the moon, stars and planets, the weather, … biodiversity, and processes in agriculture and in culture (rituals, songs and dances) which are influence by the cycles of time… All the seasons also have names of seasons … All the meanings of the seasons and moon are related to what is happening in Mupo[xxxi].

"The nwedzi (meaning month) is explained meaning   the ecological flow in a form of cycle and what that meaning also affects other species not only human. ….Nwedzi … is the cycle of the moon according to climate and moon movement. All the names have a meaning which explains about what is happening in Mupo and what people expect to do. The cycle also shows the weather patterns. … …."

The calendar is taught through storytelling, dance and questioning and the calendar is mapped based on local knowledge that is in some ways similar to a form of rich picturing (see Checkland and Scholes, 1991). The mission is to demonstrate that Venda's heritage is best protected by working with nature.

 Mphathe[xxxii] explains that she learned from the indigenous leaders whilst she was on a scholarship in 2006 and that the process involves " participatory methodology" and that it is " a dialogues where elders tell stories and youths and children map the knowledge in …. pictures. Teachers … guide school learners during the mapping."

As a defender of the Venda cultural knowledge Makaulule explains that by sharing stories and drawing the ecological calendar the young people learn that human beings are just a small part of the wider circle of life which they need to protect as custodians. The circular economy could be supported by institutional governance to better manage the global commons. Elinor Ostrom won the Nobel Peace Prize in 2009 for her empirical research on the rational choices made by groups of people who worked collaboratively to protect the common good. Her work showed that in some specific cases conditions for co-operation could be achieved and she argued that Hardin's (1968) thesis which he called " Tragedy of the Commons" is not inevitable . Ostrom's research (1992, 2008 and 2014) demonstrates that people can and do share resources under certain circumstances, these are summarised as 8 principles which relate to setting clear boundaries and clear rules, appropriate decision making processes and monitoring linked with appropriately applied sanctions and processes . She also stresses that the local community rights need some recognition by wider government and that the local systems need to be nested within layers of governance. The challenge which we face is *what* motivates people to change their thinking and practice and how can learning organisations and communities motivate people to move from business as usual towards supporting wellbeing stocks and enthusiasm for managing the commons?

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3.1.2 Table : Values motivate people to protect the environment and to support re-generative living?

	Tshidzivhe Village, Venda	Ciptaglar, West Java
Social context – harmony and balance through across species supported through strong cultural values rooted in empirical knowledge handed down in a strong oral culture in the form of art (dance, stories) crafts and ritual	Relational approach to nature based on kinship expressed as clan totems to protect plants, animals and features of the landscape (see Lethole and Romm, 2021, Lethole , McIntyre et al forthcoming) and also following the seasonal cycles based on an ecological calendar to protect living system called Mupo McIntyre et al, 2022)	Relational approach based on stewardship and an ecological calendar – practical interpretation of the stars and seasons and mystical relationship with the forest environment expressed in rituals to worship the rice goddess
Gender mainstreaming	Traditionally the Makhadzi were powerful women leaders and their role is being re-established in Venda [3].	Leadership roles for men and women are provided in this hierarchical society ruled through a village council headed by a Abah Ugi (father) and his wife and his mother. Young people have a role in leading technical advancements , but the designs need to protect their core values , namely the sanctity of the forest (see Widianingsih and McIntyre-Mills forthcoming)
Environmental concerns are central	Ecological calendar based on indigenous knowledge and training with Amazon leaders supported by the Gaia foundation Ecocide law (Higgins et al 2013) has also been supported by this community (see Makaulule in McIntyre-Mills and Makaulule et al, forthcoming)	The culture and beliefs place environmental management at the core of all activities and the entire village supports the ecological calendar. The rice barns provide storage for the rice from which anyone can draw if they are in need. Rice is not commodified or sold
Re-generative living	Co-op centred on organic products – circular economy to support re-generative living to protect habitat to ensure decent standards for animals and people	Communal living to support harmony across species – no commodification of rice and all members of the community are supported by the process of sharing resources.
Critique and limitations (both internal and external	The community is threatened by external developments such as the so-called smart city supported by Limpopo Provincial Government that would be coal powered and would result in the loss of ancient baobab trees. Need greater support of Indigenous forests and indigenous wisdom to support the findings of IPCC latest reports. The growth of potentially invasive species of bamboo need to be carefully managed.	Indonesia is not a signatory to UNDRIP, but the Indonesian government does recognise Indigenous pedagogy and wisdom in Law 2013 and Jokowi's decree(2008/9) to support one village one enterprise has the potential to be applied in a modified form[6] to support this co-operative approach that demonstrates a way to produce high yields of rice even in the driest seasons and the empirical lessons have been passed on in the form

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[3] Circumcision is seen as a rite of passage to womanhood and manhood. Moves towards medically supervised procedures (in some contexts in South Africa) for males has helped to address some of the risks. Women should not however be circumcised as biologically it risks physical and mental wellbeing. Officially the practice in South Africa is not reported and it is not condoned. No research on this topic has been conducted at this stage for this research, but needs to be followed up once sufficient groundwork has been done to build community relationships to enable discussion on this topic.

[6] New architectures for democracy and governance need to be fostered by local governments and the state. In Indonesia the 'One village, one product' (OVAP, Morihiko Hiramatsu—Governor of Oita prefecture, 1979; Yogyakarta, 2014) was applied by President Jakowi in 2008–2009.

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	In terms of gender mainstreaming the issue of FGM needs to be addressed(Kitui, 2012)[4] South Africa has not reported FMG and thus on the UNICEF data sheet it does not appear[5]. On the plus side in the latest State of the Nation Report , Ramaphosa has set up a special department to represent rights of Indigenous people – this needs to be more than window dressing	of art and ritual in this oral culture for 600 years. In this community circumcision for males and females is also regarded as a rite of passage (Van Gennep, 1960) and raised issues about human rights for women (see Kine, 2016, Human Rights Watch, 2016)[7] who highlights that almost half of Indonesian females are circumcised.

4.   DRAWING OUT KEY THEMES

The community of practice is based on shared values , ability to form long standing relationships and task orientation to test out ways to address the big issues of the day: poverty, climate change, habitat loss , food and water insecurity . The two main case studies of forest communities demonstrate a way forward based on a respect for multiple species combined with a circular regenerative system. In the case of Venda the community are not averse to developing markets and selling goods provided they do not in any way undermine the sustainability of the community. They have passed an ecocide law.

In the case of Ciptegalar the community is open to new forms of technology provided they are used to protect their forest home and rice based culture conducted in harmony with their environment and which has been sustained for 600 years providing an enviable standard of living in which the arts and technical and sciences flourish .

Both communise are concerned to make a difference and to teach others how to live sustainably and well and they have leaders willing and able to embrace new technologies that protect their sacred forests.

Some of the initial data from our focus groups illustrates that the participants are still looking for donors or sponsors rather than understanding the potential of a circular economy. Despite initial workshops on planting , harvesting and working with bamboo, a review of what people have learned underlines that many have not realised the potential of bamboo through making the most of existing bamboo that grows wild in the area and managing it (as it can be s invasive and a threat to other species) , so that further propagation needs to be carefully managed. Clumping bamboo can be planted near to other crops and fast growing running bamboo needs to be harvested regularly. Bamboo can be harvested from areas where it grows by dragging it to a location where fences to protect crops can be located. Bamboo can be harvested using a panga and worked using a sharp chisel for making notches for slotting bamboo together ; then joins can be bound using organic materials[xxxiii] (including bamboo strips), thus nails are not needed.

The full potential of working with nature in a circular economy is at an early stage , fortunately the enthusiasm of the group provides great potential for their co-operative to succeed and to set an example for other villages in the Limpopo area.

The participatory action research is reliant on a multidisciplinary team with very different skills including a deep understanding of local culture and language, on the ground engagement on a daily basis within the community , social and policy studies, critical systemic praxis and computing skills . One of our team members hoped that data collection would involve on line workshops, conversations and data collection. The reality is very different, meaningful engagement is only possible through working with locally based facilitators , once train the trainers workshops have been provided. Community training workshops were designed to have a practical focus such as learning to make a fence and combining it with a discussion on organic farming , the potential of bamboo as a source of food, fuel and a resource for manufacturing. The

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[4] https://africlaw.com/2012/06/07/female-genital-mutilation-in-south-africa/ "Regionally, the Protocol to the African Charter on the Rights and Welfare of the Child on the Rights of Women in Africa imposes a duty on state parties under articles 8(f) and 2 to institute measures that prohibit all forms of harmful practises. Article 5 obliges governments to engage in public awareness against FGM, to enact legislation prohibiting FGM and to provide victim support for women affected by the effects of FGM." Accessed on 6th April 2022

[5] https://data.unicef.org/topic/child-protection/female-genital-mutilation/#

[7] "The campaign, led by Yohana Yembise, the country's minister for women's empowerment and child protection, will deploy "scientific evidence" to dissuade religious and women's groups who support FGM. Between 2010 to 2015, 49 percent of girls from birth to 14 years of age in Indonesia had undergone FGM."

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practical workshops were combined with concerns about gender mainstreaming, empowerment and job creation. The gender workshop, for example involved giving a 10 minute talk on gender and explaining that whereas in the past it was about welfare for women and meeting basic needs , that it shifted to women's rights and gender equity between men and women, it has moved on to emphasise that rights span male , female and LLGBTIQA+ policy to meet the needs of a community[xxxiv].

The social enterprise mission has potential if decoupled from the potential of misuse by neoliberal microcredit systems that requires borrowing and pressure to repay. The projects (and suggested designs for projects outlined in this paper) show the potential for scaling up new ways of living if we are able to resource them and sustain them.

The first step was to work with those who have local live experience. In previous papers we addressed the process and the potential (see McIntyre-Mills et al , 2022 forthcoming , also Romm and McIntyre,2021[xxxv] in which examples of small pilots are presented that provide some steps in the right direction). The case studies will not be rehearsed here. Each one provides some insight into a way forward, through facilitation and enabling local wisdom, whilst being mindful that the political and economic context in which the projects operate may have positive or negative cascading effects. Wirawan and McIntyre-Mills are exploring the notion of scaling up engagement to protect local communities based on local wisdom through learning what works why and how in forest communities, such as Tshidzivhe Village and Kasepuhan Ciptagelar. A new form of praxis is needed to support earning, learning and growing a future. Our axiological approach strives to support the commons by considering the following: exploring existing a priori cultural norms and values which inform the project and applying a posteriori indicators (on which we have agreed) to assess progress towards supporting wellbeing. Wirawan and McIntyre-Mills are exploring the notion of scaling up engagement to protect local communities based on local wisdom :

4.1.1 Diagrams of stewardship agriculture and management of the commons
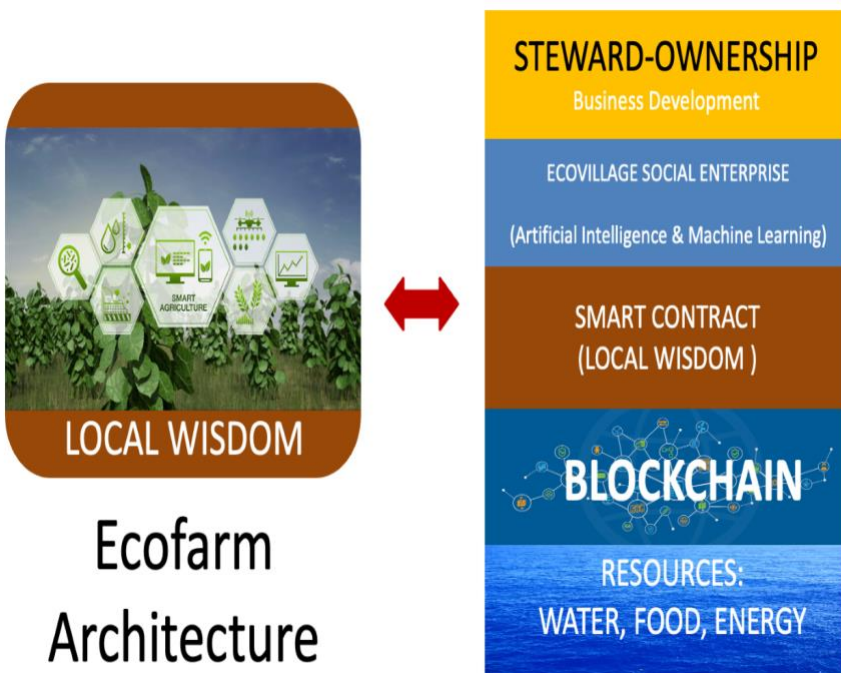
4.1.2 Story classification

Scenarios

- **Business as Usual**
  - We continue to believe in economic arguments that ignore the social and environmental dimension. We continue to think that our way of life is sustainable and are not prepared to manage the risks of climate change by changing our way of life. We blame the increasing risk of drought, bush fires and floods are one-off, unrelated events or deny that climate change can mean rising temperatures in some areas and plummeting temperatures in others. Melting ice effects the ocean currents. The sea is used as a dumping ground and it no longer helps to regulate our climate

- **Small Changes for the long haul**
  - People make slow annual progress towards goals which they meet for the benefit of their children and grand children. But they do not move quite fast enough. People of all ages and from all walks of life who are able to join up the dots, help to motivate movement towards a better future.
  - Local governments and non government organisations take the initiative. They hold workshops to demonstrate how people can make a difference. They listen to the people and help local groups to respond to local challenges. Together they undertake model projects that demonstrate how it will be possible to live differently. They model different ways of thinking and through living the changes show that it is possible to balance individual and collective interests, because we are not selfish nor are we unable to create alternative ways of governing at a regional level

- **Sustainable Future**
  - We live in an environment that can support this generation and the next. Housing is affordable and made of sustainable materials. We have faced up to the convergent social, economic and environmental challenges and we are resilient, because we live in clusters of homes, share rain tanks and solar grids that are subsidised by local governments. Our living and working areas are powered by alternative energy. The new status symbol is the environmentally friendly lifestyle. Public transport is green. The green economy supports a vibrant job market spurred by subsidies to enable packaging goods, housing people, transporting people, educating and entertaining the public. The carbon economy is replaced through innovative inventions. All members of the public are encouraged to share their experiences and ideas for living sustainably. The futures market has been reconstructed to take into account the air, water and earth we need to grow organic, safe food.

Key Factors

Re-generating Living

- Regenerative living requires living in harmony wit nature and can be achieved through social and environmental justice to support a circular green economy that support living systems.

Business As Usual

- Profit and loss driven decision making based on a 'misdirected system' and a misunderstanding of externalities.

Small Changes

- Making Social, economic and environmental decisions that support the environment

Whilst addressing the concerns about basic services such as safe water, reliable and affordable supplies of energy, colleagues posted onto WhatsApp their concerns about a proposed so-called Smart City in Limpopo bordering on Zimbabwe.

Eskom remains a problem for South Africa , it is a problem associated with state capture, the support of coal mines owned by the Guptas who face charges along with Zuma[xxxvi] and now the arrangements made with foreign companies in contravention of the principles of sustainable development.

The rolling black outs in South Africa cannot be solved by a reliance on a failing nuclear power station that is currently being de-commissioned[xxxvii] as a Cape Talk back host in January 2022 speculated on 'how safe it really is" and " whether the managers can say anything other than that it is safe and well managed. " Would a manager of Fukushima , have said their plant was unsafe?" he asked and stressed that the managers were doing their best, but that the time had come to face the need to shift to renewable power supplies. Currently the licence to operate the plant should end soon, but the plant has been decommissioned to try to extend its operating life, but the process could have implications for safety and power supply. It would be much better to move towards a renewable supply of energy.

4.1.3 Scaling up ways to manage the relationships across multiple species and find a way to balance individual and collective needs

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Whilst much can be learned from Indigenous people about sustainable, re-generative living[xxxviii] , much can also be learned from some of the existing and proposed mega projects that focus on short term profits at the expense of long term existential risks.

Unfortunately South Africa remains keen on old sources of energy , despite linking the sources with so-called ' smart technology'. On the 25th of February [xxxix]

" Limpopo province gave environmental authorisation to a China-backed proposal to spend more than $10 billion (R150 billion) building a 4 600 megawatt coal-fired power plant, a coking facility and ferroalloy and steel plants."

The article[xl] continues by explaining that the Musina-Makhado Special Economic Zone which borders Zimbabwe may not be permitted as the Chinese President Xi Jinping sated they would

"stop funding coal power abroad…"

It is hoped that this rational decision making will indeed prevail as a further report [xli] stresses that

"Chinese President Xi Jinping said in a pre-recorded address at the United Nations General Assembly on Tuesday that China would help developing countries build green energy production and halt construction of coal power plants abroad."

There is another way of doing things, which is documented and explored in several edited and sole authored Springer publications such as " Planetary Passport", " Balancing Individualism and Collectivism", " From Polarisation to Multispecies Relationships" and " Democracy and Governance for Resourcing the Commons" and recently " Transformative Education."

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Whilst I was in Cape Town I spent a short time researching the concepts of "smart cities', " smart governance" in South Africa ranging from small shuttle bus services on the University of Cape Town's campus to attempts to manage wider infrastructure projects in Cape Town, managing aspects of the Covid vaccine rollout to fully planned cities such as Water Fall in Gauteng as well as the proposed city in Limpopo on the border of Zimbabwe.

The need for participatory engagement in designs that support social and environmental justice are an obvious deficit of the planned cities that follow old style development and power over people and nature.

5.   CONCLUSION

Technology ought to respond to designs that serve re-generation , hope and multispecies relationships. Where is the Afro-centrism in overseas projects that allow offshoring pollution and destruction?

Better city planning is desperately required. I spent hours driving behind cyclists along a coastal road in Muizenburg (with single lanes) on a regular commute. No cycle lanes are provided along the road to Muizenberg and overtaking in congested single lanes with head on traffic running in opposite directions is impossible. At each stop street , desperate people ask for help or try to sell art works made from recycled materials.

The smart city needs to begin with protecting the rights of the very poor and ensuring that bio diverse habitats are retained.

Job creation using sustainable energy is vital and yes, the use of digital technology may indeed have a role, but only in so far as the designs serve social and environmental justice.

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viii Planetary boundaries - Stockholm Resilience Centre see: IPCC: risks over the next decades are unavoidable - Stockholm Resilience Centre.

ixhttps://www.theguardian.com/world/2022/mar/31/protect-indigenous-peoples-rights-or-paris-climate-goals-will-fail-says-report?CMP=Share_iOSApp_Other.

x Former MI6 Chief On the Ukraine & Russia Conflict | Oxford Unionhttps://youtu.be/Yw5lzKVn3sc The War in Ukraine Could Change Everything | Yuval Noah Harari https://youtu.be/yQqthbvYE8M| TED Harari Defending the Global Order: A Conversation with Yuval Noah Harari (Episo... https://youtu.be/vTqOk19itfM

xi The biomedical research on anti-aging and re-generating damaged cells is inspiring for all those who wish to remain fit in body and mind and provided we set aside some of the comments on living forever or for 150 years and the implications for privileging some rather than others and the implications for an already overpopulated world , it is difficult not to be intrigued by Sinclair's work on switching on sirtuins See https://www.facebook.com/watch/?v=492981221372330

 David Sinclair (2013) https://www.youtube.com/watch?v=vCCdmGKtxPA , https://www.bostonmagazine.com/health/2019/10/29/david-sinclair/ https://www.youtube.com/watch?v=NpsnQ5IywsU

David Sinclair - Cracking & reversing the aging clock - Frontiers Forum 2019,https://www.youtube.com/watch?v=Eu0GksWf5pI

xii It could be argued that values do matter , but characterising politics in terms of right and left is over simplistic as environmental awareness and environmental justice needs to supported by social justice and can be highjacked by xenophobic approaches to human rights as history has demonstrated.

xiii This table extends governance to protect multiple species and is inspired (in part) by a presentation by Zeger, 2016, Flinders Symposium, developed in Van Der Wal,Z. (2017) The 21st Century Public Manager. United Kingdom: Macmillan Education UK.

Columns 3 and 4 address the challenge discussed in depth in McIntyre-Mills and Corcoran Nantes on " From Polarisation to Multispecies Relationships. Cham. Springer. Van Der Wal,Z. (2017) The 21st Century Public Manager. United Kingdom: Macmillan Education UK. Columns 3 and 4 address some of these challenge.

xiv *Mphatheleni Makaulule , based on her interviews with elders as a result of her concern to defend sacred sites (* January 2012) The Laws of Origin of the Venda Indigenous Clans, and the Principles underpinning them, for protecting *Zwifho*, Sacred Natural Sites, have been elaborated through a series of meetings and processes organised by *Dzomo la Mupo*, the custodians' organisation, during 2011. These are the principles which are common to all the *Zwifhos* in Venda. The Venda Law of Origin has been given and practised since ancestral time, and is transferred from generation to generation by the custodians.

xv Ostrom, E. (2018) https://earthbound.report/2018/01/15/elinor-ostroms-8-rules-for-managing-the-commons/

xvi *Principle 1. Commons need to have clearly defined boundaries. In particular, who is entitled to access to what? Unless there's a specified community of benefit, it becomes a free for all, and that's not how commons work."*

xvii *Principal 2. Rules should fit local circumstances. There is no one-size-fits-all approach to common resource management. Rules should be dictated by local people and local ecological needs.*

xviii Principle 3. *"Participatory decision-making is vital. There are all kinds of ways to make it happen, but people will be more likely to follow the rules if they had a hand in writing them. Involve as many people as possible in decision-making."*

xix Principle 4. *"Commons must be monitored. Once rules have been set, communities need a way of checking that people are keeping them. Commons don't run on good will, but on accountability.*

xx Principle 5. *"Sanctions for those who abuse the commons should be graduated. Ostrom observed that the commons that worked best didn't just ban people who broke the rules. That tended to create resentment. Instead, they had systems of warnings and fines, as well as informal reputational consequences in the community."*

xxi Principle 6. *"Conflict resolution should be easily accessible. When issues come up, resolving them should be informal, cheap and straightforward. That means that anyone can take their problems for mediation, and nobody is shut out. Problems are solved rather than ignoring them because nobody wants to pay legal fees."*

xxii Principle 7. *" Protecting the commons requires recognition by higher authorities* Commons need the right to organise. Your commons rules won't count for anything if a higher local authority doesn't recognise them as legitimate."

xxiii Principle 8. *"Commons work best when nested within larger networks. Some things can be managed locally, but some might need wider regional cooperation – for example an irrigation network might depend on a river that others also draw on upstream….. The 'tragedy of the commons' is real, but it is not inevitable."*

xxv This is very different from the approach that bans the Batwa forest people , in order to protect the forest and the gorillas in Uganda . The Batwa people were moved out of the forest and only some were given farming land, without any training to support their move from being hunter gatherers to becoming farmers. The Batwa people feel that they have been victimised and that a better balance is needed.

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xxvi https://www.dailymaverick.co.za/article/2022-03-31-indigenous-communities-crucial-to-protecting-biodiversity-says-creecy/

xxvii According to the PGSA website the organisation was : "Established in 2011 as a non-profit voluntary association, Participatory Guarantee Systems South Africa (PGS SA) is the body representing PGS in South Africa. It is dedicated to supporting the establishment of PGS's in the region to help facilitate local market access for organic and agroecological farmers. PGS SA helps smallholder farmer groups to harness the economic, environmental and social potential of organic farming. The end result of this process is the development of a sustainable market access system, based on transparent, producer-focused systems where consumers are assured of the integrity of organic products. PGS drives food sovereignty through localised, farmer-driven food systems based around a community of practice."

xxviii   Farm animals and humans should be treated the same, children say https://www.theguardian.com/world/2022/apr/11/farm-animals-and-humans-should-be-treated-the-same-children-say?CMP=Share_iOSApp_Other "McGuire said that while adjusting attitudes was a natural part of growing up, the "moral intelligence of children" could be valuable. He said: "If we want people to move towards more plant-based diets for environmental reasons, we have to disrupt the current system somewhere. For example, if children ate more plant-based food in schools, that might be more in line with their moral values, and might reduce the normalisation towards adult values that we identify in this study."

xxix Report Dzomo La Mupo (DLM) indigenous seed planting, restoration of local ecosystems and biodiversity, and documenting community ecological knowledge July 2019-March 2020

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xxxi It is a living universe in which human beings are a strand.

xxxii Sources Makaulule, 2021 and https://www.youtube.com/watch?v=IszP5Uq-X50

xxxiii https://www.youtube.com/watch?v=Qp7EOXSAfUA

xxxiv Think in terms of roles and relationships within state , market, community and household. We need to move from thinking only about welfare to thinking about rights, Responsibilities and Gender mainstreaming. We need to also think not only about the double and triple load/Work load analysis, but also about access to resources and decision making, Power in market and state . See the following paper on the gender continuum and policy implications.
https://www.theequalityproject.org.au/policy?gclid=CjwKCAjwuYWSBhByEiwAKd_n_nEGzObyv_mkFCmU9GI7hhlvUpU66bcPm3S_tynfBQteH ZeqAQCWdBoCA30QAvD_BwE

xxxv We explain that Systemic Intervention (SI)involves working with the participants at each step of the process to identify areas of concern, local wisdom, local skills within a local context that is in turn shaped by the wider environment. At its best SI is an ongoing process of facilitation based on fostering relationships that are not limited to the one project and instead are sustained through an ongoing community of practice that spans a life time of engagement and ongoing connection to learn what works why and how and what does not. The ongoing process of learning by doing informs one project and then the next through an iterative cross pollination of ideas that can be shared for mutual growth.

xxxvi https://indianexpress.com/article/world/jacob-zuma-gupta-brothers-south-africa-corruption-probe-report-7707159/

xxxvii   https://www.news24.com/fin24/economy/eskom/eskom-warns-power-system-may-come-under-more-strain-as-koeberg-units-go-offline-20220115
https://www.dailymaverick.co.za/article/2022-01-09-nuclear-power-station-life-extension-project-running-late-even-before-it-starts/

xxxviii   https://www.climatecouncil.org.au/wp-content/uploads/2021/04/aim-high-go-fast-why-emissions-must-plummet-climate-council-report-210421.pdf

xxxix https://www.news24.com/fin24/economy/eskom/limpopo-clears-way-for-r150bn-chinese-coal-complex-20220225

xl https://www.news24.com/fin24/economy/eskom/limpopo-clears-way-for-r150bn-chinese-coal-complex-20220225

xli https://www.reuters.com/business/energy/chinas-overseas-coal-power-retreat-could-wipe-out-50-bln-investment-2021-09-22/