



Together We Can Grow: Resourcing the Commons Through Pathways to Wellbeing

Rudolf Wirawan^{1,2,3} · Janet J. McIntyre-Mills^{4,5} · Mphatheleni Makaulule^{6,7} · Patricia Vhahangwele Lethole⁴ · Enid Pitsoane⁴ · Akwasi Arko-Achemfuor⁸ · Norma R. A. Romm⁸

This paper is dedicated to the memory of the following graduate researchers and leaders in the field with whom the second author Janet McIntyre-Mills has worked over the years, namely: 1. Dr Kenneth Bausch who worked on several pilots with Global Agoras and supported our understanding of the potential for participatory mapping. Prof John P van Gigch who inspired an understanding of critical systemic heuristics and introduced me to the work of C. West Churchman. 3. Dr Agus Irawan a Flinders Graduate who was inspired by critical systemic praxis to address accounting and accountability in Indonesia by focusing on wellbeing in line with the potential suggested by Joseph Stiglitz.

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Abstract

This paper discusses transformative research in a community of practice, it is written in the form of a metalogue on our progress to date This iterative dialogue based on face to face meetings and regular virtual meetings. Together we illustrate and map the journey of developing the pathways to wellbeing software into story pathways to support a green circular economy. The metalogue enables weaving together the experiences and diverse ways of knowing whilst we explore the environment of a problem together we builds on the work of Gregory Bateson and his daughter Nora Bateson as well as the wisdom of Indigenous sages and scholars who emphasise the importance of strengthening relationships (in our fields of influence) as the route to human and more than human wellbeing. The research paper is one of several papers which will explore ways to enable participatory design and decision making through an online community of practice. Our “boundary” that we are setting in the paper focused around the building of relationships in which we are involved and which we are expanding (through a myriad of connections and networks) to build circular economic practices in Venda, specifically in relation to protecting sacred sites and being responsive to Mupo. The first author has a website https://www.wirasoftfoundation.org/en_GB/web/biac-sig/home on which some ideas on circular economies are expressed. Our hope is that the small pilot can be used to demonstrate a way in which community education can be linked with social enterprises that support earning and learning together in ways that foster social and environmental justice.

Keywords Engagement · Co-design · Community of practice · Re-generation and values

Extended author information available on the last page of the article

Introduction on our praxis and the metalogue that supports action learning

Janet: “Let us explain our approach. This paper is a metalogue (a form of iterative conversation and commentary) which draws on the work of Gregory Bateson and his daughter Norma Bateson to foster an ecology of mind. It is also a way to ensure that all our voices are heard and referenced in the process of weaving together stands of experience. The research is based on exploring what people have and need and mapping the turning points for better and worse, in order to help them engage in circular green economy.”

Norma: “ Yes, this paper is constructed in conversational mode as a different way of doing “scholarship” – it is part of an effort to decolonize academia and construct discussions that appreciate different entries into the discussion and also allow the readers of the paper to engage in our dialogue (as a continued dialogue). The conversational mode has been well expressed by Adyanga (2022: 316). In explaining the structuring of a chapter he wrote in terms of a conversational approach he described this approach as follows:

‘In scripting this piece of work, I supplicate in advance to be exempted from following the orthodoxically ‘acceptable’ format of presenting ideas in scholarly forums. Such structured formats as providing introduction, literature reviews, theoretical frameworks, methodology (of a study), discussion, drawing new conclusion among others is the very approach that I have often contested in my scholarly works over time as a deliberate effort to arrive at what I construe as freedom from imposed neo-colonial arrangement.’

The presentation in this paper should be read in the light of this argument of Adyanga (as many others who advocate for decolonizing academia – see for example, Lange et al., 2021).”

Janet: “ Thank you Norma, the paper strives to enable engagement across languages, cultures and ways of knowing in order to address poverty and climate change – which are the big issues of the day along with a rapid rate of urbanisation in Africa resulting in displacement of many species, habitat loss, food and water insecurity The engagement process follows the ecovillage mission of Vandana Shiva and the vision of the Yunus Foundation to foster opportunities for the marginalised. In line with a critical systemic approach this paper is written in the form of a metalogue between the second and first author who pool ways of knowing, in order to support a community of practice comprising all the named contributors to this paper. Our mission is to support *earning, learning and growing a future*. The shared goal of our transformative research is to design and test a process to protect the global commons in line with Elinor Ostrom’s principles. As stressed elsewhere,¹ 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) and Bollier and Helfrich (2012)²: “*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. ...*”

¹ The paper builds on the following: McIntyre-Mills and de Vries (2012), McIntyre-Mills et al. (2014), McIntyre-Mills (2017a, b), McIntyre-Mills (2018) and McIntyre-Mills et al. 2019a.

² ...: <http://www.bollier.org/commons-short-and-sweet>”.

In a forthcoming Springer volume *Transformative Education for Re-generation and Wellbeing*, I stress at the outset that “Just as our thinking effects our physical health, it also effects the health of other species and the natural world” I then explain that Indigenous people have understood for centuries that “our thinking shapes who and what we value” and that “our thoughts shape the landscape ...”. This is why it is so important to work with Indigenous communities. We all need to understand that our shared global future depends on limiting climate change to 1.5 degrees Celsius and that protecting habitat and in particular forests is a priority. For example, voters who support mining and profits along with cattle pastures (at the expense of the Amazon and the planet) voted for business as usual. Internationally, voters who put short term profits ahead of medium and long term safety of the planet are similarly complicit in perpetuating an unsustainable system.

My colleague shared this news today:

“Water scarcity: Major world cities including London face ‘increasing danger of drought’, report warns Urban centres around the world including London are in increasing danger of running out of fresh water, as growing populations and climate change put even greater stress on resources, Christian Aid has warned.”³

The article goes on to stress that water is so essential that it could be “used as a weapon” and echoes the concerns raised years ago by Vandana Shiva (2002).

Mphathe: “Thanks Janet for sharing this... Water is a big question; clean water is going away. I am hearing on a zoom meeting about the new tech coming as an alternative for limiting emissions leading to climate change and I am also drawing on the *Just Transition* dialogues. It is said that the new alternative is green hydrogen, but it is still a technology requiring a lot of water and land to build all its poles [and infrastructure], as discussion goes on, water is still a big issue. We agreed to learn about green hydrogen,, as there is grey, blue and brown hydrogen...now the new transition is green which provides an alternative... but water still an issue....We shall learn about this South African road map for transitioning to green hydrogen as communities should have information about developments coming in particularly on the impact of remaining indigenous forests and water resources such as rivers and wetlands....”

Norma: “Do you think the green hydrogen is a good idea for the *Just Transition* or will it be very water hungry sucking up lots of water ? I think this is Mphatheleni’s concern. Do you have any idea about this ? Does it seem a feasible solution?”

Rudolf: “Yes, I think green hydrogen is a good idea, as it only uses water as the source of energy. There are many ways that people can maximise water security. Here are links to the Venda resources website which can be used for community education https://www.wirasoftfoundation.org/en_GB/web/ecovillage/venda1

To answer your question about hydrogen: In hydrogen combustion, the hydrogen (H₂) reacts with Oxygen (O₂) to form water (H₂O) with the release of energy. That means after the release of energy, it returns back to the water. The only little concern is that the hydrogen combustion may yield a small amount of nitrogen oxides with the water vapour.

³ Read in Sky News: <https://apple.news/AchKMI160QPGrhMd-9cFuaA>

Yes, there is an urgent need to do things differently. By working with people in communities of practice we can do transformative research.”

Janet: “Communities of practice help to support the research based on our relationships focused on a shared values and vision and our ability to work co-operatively to support social and environmental justice. Also all the members demonstrate reciprocity (see Wenger 1998; Wenger et al. 2009)”.

Rudolf: “Now I will share what inspires my thinking. I am inspired by Taoism which influences my practice as a voluntary educator. After I retired and set up my own business I was also influenced by my role in the Indonesian diaspora and I try to work at the government to government and local community level to help foster good relationships. Trade has always occurred between Indonesia and Australia. It is one of the ancient ways people have connected with one another (see slides and links⁴) I also believe that there should always be a focus sustainability for development work. The best way is by making sure that there is an emphasis on education and access to clean drinking water. The following steps could help guide villages to achieve sustainability:

- Educate the people in villages on how they can use their natural resources more efficiently so that they reduce or maintain their low carbon footprint
- Show them different ways of using less energy
- Show them different ways of reducing their carbon footprint. “

Janet: “We value your expertise and from our colleagues in Vhavenda and in West Java Ciptaglelar we are also learning about indigenous wisdom and sharing different skills to support one another. I recommend that you have a look at the literature on working with different ways of knowing. The work by Attwater (2002) and Cram and Mertens (2015) is helpful in this regard, as is the work on listening by Dobson and Eckersley (2006) as well as the work of Flanagan and Christakis (2010), Flanagan et al. (2012) on democratic dialogue to address complex issues which they have worked on for several years through global agoras and the many related programs of research they have inspired, such as the work of Yiannis Laouris with young people in Cyprus, EU and Africa.”

Rationale for Collaboration

Rudolf: “Enabling women and their families to earn a living in rural areas is Jokowi’s vision and this approach in our community of practice will help everyone. I have been actively involved in this space in Indonesia and I have been actively elected as President many times by the Indonesian diaspora to help foster the “One Village, One Enterprise” approach in Indonesia supported by Mr. Joko Widodo (Jokowi), the President of Indonesia. Together we have also worked with a number of universities, including Adelaide University, University of South Africa and Universitas Padjadjaran where I am a research fellow.”

⁴ Please find below the links to the presentation:https://drive.google.com/file/d/1IqtqBLMOybeNCEA_g-1Elb07RHH9TzM1/view?usp=sharing
https://drive.google.com/file/d/1E3K8Uvq6qm8WRq7c057lyFfld_GAHaMV/view?usp=sharing

Janet: “Yes, we are working towards comparing and contrasting approaches to social engagement to explore ways to support the most marginalized members of the community participate in social enterprise. The focus is practical on what works why and how, but most importantly it refers to the challenge to support organic circular economies that support and do not undermine habitat.”

Rudolf, “Yes our focus is on what works, why and how to support Jokowi’s presidential decree to encourage “ One Village, many enterprises” in ways that (see Rittel & Webber 1984) enhance social, economic and environmental health.”

Janet: “Complex needs and the need to do transformative research on issues that matter require scalable praxis that respond to local contexts. Our community of practice comprising a cross cultural and multidisciplinary team addresses ways to address the big issues of the day, namely poverty and food security in the context of rapid habitat loss, species displacement and urbanisation in Africa and Asia as detailed in the United Nations Urbanisation Report and the recent IPCC report. In policy terms we are inspired by Jokowi’s notion of encouraging rural villages to develop enterprises and the importance of working to support indigenous knowledge systems (IKS)⁵ In South Africa the need to protect habitat and create green employment opportunities are vital along with honouring IKS (Odora Hoppers 2013) by working in ways that empower communities:

‘The Department of Science and Innovation told the Committee that the Indigenous Knowledge Act was essentially about redress, and bringing indigenous knowledge into the main stream. It was also a transformative Act, because it addressed how indigenous communities could contribute and become part of the mainstream economy, using their own indigenous knowledge. Some of its objectives included governance and the proposal to establish an advisory panel, which would be inclusive in terms of gender and youth. There was the recognition of prior learning, to make it easier to move between formal and prior indigenous knowledge, and the implementation of an outcomes-based approach.....’

This policy could be supported by following Jokowi’s One Village One enterprise approach (2008/9) has the potential to be applied in a modified form⁶ to support green circular economies that support social and environmental justice.”

Rudolf: “The most important point it to emphasise why the research is relevant. The starting point is to emphasise that business as usual (as it is currently conducted) is indeed unsustainable. In today’s world, sustainability is an important issue. The environment is being polluted, and the natural resources are being depleted. Therefore, it is essential to find ways to reduce our carbon footprint and ensure that we are utilizing our natural resources properly. This can be done by educating the people in villages on how they can achieve sustainability.

Making a country sustainable starts from the village level. It is crucial to ensure that the people are educated, have access to clean drinking water, and have food security. If these basic needs are not met, it becomes hard for them to move forward.”

⁵ Indigenous Knowledge Systems & IKS legislation overview, <https://pmg.org.za/committee-meeting/29831/> Feb 2020.

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.

Theoretical Assumptions

Rudolf: “Wuwei, The Taoist approach is applied to motivating the participants. By working with nature, nature helps to work with the participants. The forest does not need a gardener, if we work in harmony with the laws of nature then the organic circular economy can be achieved.”

Janet: “How have you applied this philosophy to designing the new version of the software to enable protecting the commons? The research applies aspects of WSR (Gu and Zhu 2000) with Taoist wisdom, local Indigenous wisdoms and the notion of circular green economies detailed by Gunter Pauli (2010)”.

Norma: “In terms of Indigenous views our aim is to learn more from one another through this learning project and to strengthen ties of relationality between people and between people and all else that exists (where all are given equal status as far as the right to wellbeing is concerned). This paper “Perturbing possibilities in the post qualitative turn: lessons from Taoism (道) and Ubuntu,” by Wu et al (2018): is particularly helpful for our approach.”

Janet: “Yes Norma, thank you, this is a very helpful paper and I particularly like this quotation, which I would like us all to read and reflect on the paper. It helps to explain how the relational approach changes our axiology We need to appreciate and start with a sense of interbeing which then shapes our ontology (how we see the world) and how we go about understanding it epistemologically in ways that go beyond simplistic notions of measurement.

Wu et al. (2018:13) explain Taoism and Ubuntu as follows:

“Both Taoism and *Ubuntu* emphasize a relationship with natural environment, animals, and spiritual lineage (ancestors) in quest for harmony. Life and death, material and spirit are not conceived as separate, dichotomous entities but intimately tied in the oneness of the world. In order for all beings to flourish, one must think of oneself as bound up with, and engaged in, a relational ethics of intra-action and responsibility. Taoism and *Ubuntu* as marginalized forms of knowledge call us to move beyond an obsession with western theoretical canons, question the inter-linkage of knowledge, power, and geopolitics, and acknowledge the need to bring indigenous philoso-praxis to the spotlight in order to transform our intellectual one-sidedness in ‘west as method.’”

Janet continues: I looked up Pak Rudolf’s quote: “The Way never acts yet nothing is left undone”.⁷ Please would you discuss it further?

Norma: “I wonder if Rudolf and you (Janet) can connect this up with that article I sent along – about the Tao (and connection with Ubuntu). I think you probably also have other literature from sages on the Tao - I think that is what Janet was asking you to cite (and interpret). Is Diagrams 1 and 2 about universal energy, the way and the law of nature yours Rudolf? I quite like your equation that the bigger the ego the smaller the eco - this also fits the Ubuntu idea that we must not be ego-oriented but recognise that we exist in relation (and not as separate entities). But it would be good if you can maybe cite few more sages’ perspectives on the meaning of the Tao ...”

⁷ <https://www.theschooloflife.com/article/wu-wei-doing-nothing/>

Janet and Rudolf : “Yes, thanks Norma. Rudolf has drawn on several sources to create Diagrams 1 and 2 which he cites and which are discussed below in some detail. The points we make build on some of the points made by Wu et al (2018:8) who explain in the following quotation:

‘The Way, from the Taoist standpoint, is the life-sustaining force and origin of all creation, and becoming one with the Way is the means of achieving harmony with nature, self, and one another. Although a comprehensive review of Taoist belief and its many orientations is beyond the scope of this paper, we would like to delineate a few important Taoist principles in relation to post qualitative research. First, human and non-human are considered indivisible and intricately connected. The five major organs in the body (lung, liver, kidney, heart, spleen) are said to correspond to five natural elements of metal, wood, water, fire, and earth (jin mu shui huo tu 金木水火土), linking to the sun, the moon, the revolving season in the universe (Chang 1963). Humans are part of an enormously complex system of exchange where the bodies and the distinct characters of the material world are mutually dependent and constitutive. Violating the relationship will cause unhealthy signs and diseases. Thus, in the Taoist cosmology, the human-nonhuman divide is merely putative and socially constructed. Second, unlike western philosophies that orient toward metaphysics and absolute substances/forms, Taoism attends to the unending change and upholds the Way as the catalyst and sustainer of perpetual fluxes in natural and human worlds. In Greek philosophies of being, truth is constituted in immutable abstraction or determined forms that remain constant across time and space. According to Plato, for instance, an object is real only if it is either A or non-A, but cannot be both forms at the same time. Aristotle, for another instance, approaches truth as ultimately knowable through reasoning.’

Janet: Perhaps this last point about fluidity and perception is a vital consideration when working across conceptual boundaries.”

Rudolf: “Yes, as the world goes digital, the amount of data is growing exponentially. However, data generated by humans is unstructured and cannot be classified by traditional methods.”

Janet: “In the social sciences qualitative data analysis is used to analyse data and there are many different perceptions (from Asia, Africa, the Americas, Europe) on how this can (or should) be done. In so-called post qualitative studies the emphasis is on creating relationships with multiple species in context – not merely determining what that area of concern is and then trying to measure it. To scale up the analysis of complex data does indeed require looking at multiple case studies to develop themes and typologies which can be aided through appropriate data mining. But the classification is a value-driven process. What matters is a matter? Why? This approach was successfully tested (albeit on a small scale) to ensure that the perceptions of stakeholders shaped every stage of the process (for example, McIntyre-Mills 2008, McIntyre-Mills et al. 2014).”

Rudolf: “I am interested in assessing the extent to which AI (Artificial Intelligence) classification algorithms that use deep learning can be researched to assess the extent to which they can convert unstructured data into structured data, which can be then fed to DL (Deep Learning) for classification.”

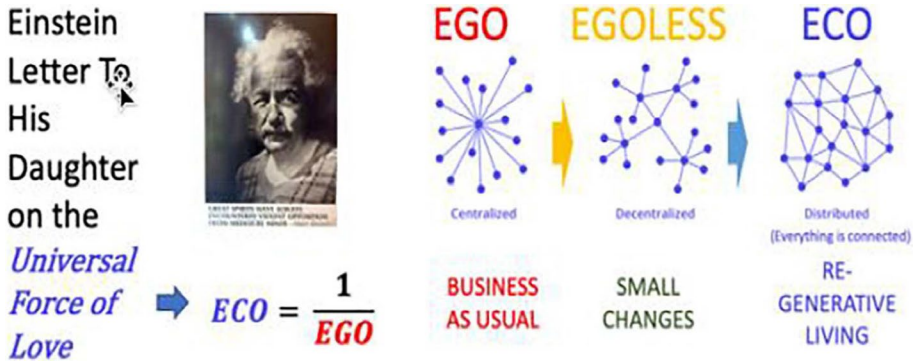


Diagram 1 Source: Adapted from Universal love https://www.huffpost.com/entry/the-truth-behind-einstein-letter-on-the-universal-force-of-love_b_7949032

Janet: “The marginalised are very often the *objects* of research which is why Donna Haraway (1991) in *Cyborgs and Simians* stresses that women and the marginalised should co-design and lead research to ensure that technological designs serve not only social and environmental justice but also the rights of multiple species (Haraway 2016) and not just the interests of powerful elites, so this community of practice responds to her message that we should “stay with the trouble,” she was referring to the growing threats we all face as a result of growing populations and dwindling habitats. Amartya Sen and Martha Nussbaum addressed this wicked problem by suggesting that a way forward is through growing the capabilities of women (including literacy and numeracy) so that they have more agency and are able to make decisions. Demographic transitions occur when women can make decisions in the home, workplace and as policy makers in government. This is why a gender mainstreaming approach has been so important in our research conversations and in the ongoing focus group discussions in Tshidzivhe and some of the initial joint research in Ciptagelar (Widianingsih et al. 2022).”

Mphathe: “We need to stop blocking the migration routes of animals and the way we cage animals; we also disrupt the flow of rivers. everything is living like a human being. When we dam rivers sometimes we are only thinking of ourselves and not other species. Animals have to have water. People only care if they have water for their garden and do not care for the water that the forest needs and the animals need. We propose a Wild Law Act. We need a harmonious co-existence. At the meeting many nations met. Venda, Xhosa and many others all concerned about the safety of wild life. We need to consider the safety of this generation and the next when making decisions. Here in Venda we do not fence the animals. I share the Warthog totem and I am linked to the big and the small animals. We do not cage animals and we protect all like pets. As a child I was called by my praise names. When I was sick a Makhadzi called my praise name with the rising sun asking for me to become well.... I am wearing a leopard skin, this is a skin from tribal ancestors, a relic, we do not kill leopards for skins today.... It must be old and handed down to be a sacred relic. I do not know when the leopard was killed... Animals are sacred – they are our clan members... We are no longer subject to colonisation and religion must not disconnect us from nature. The sacred forest is where we say our prayers....”

Janet: “Yes, Mphathe, the forest is your sacred habitat for the clan and your totems.”

Pat: “I was reminded from what Janet and Mphathe were saying that we did indeed have religious interference and that the indigenous stories we were told were always about people and animals in their environment. The totem was a way to build a moral culture. As children we were called by our totems. As I am an elephant, I was told: elephants do not do that. So you stop and do the right thing. Indigenous people have a close relationship with their animals.... Totems remind the clan how to relate to one another. I do not see people clinging to that. Now with our writing we are doing in this group we are reminding people. Also Mphatheleni has been moving around to many communities to establish a seed bank.”

Janet: “Yes, this is a vital aspect which we need to discuss in more depth in our joint paper on earth jurisprudence: addressing food, habitat and multispecies relationships, which we discuss in relation to social, economic and environmental challenges linked with the pandemic.”

Janet to Rudolf: “The gap in the literature which this joint research builds upon addresses the work of Shiva (2020a, b), Ostrom (1992), Elkington (1994), Stiglitz et al (2010), McIntyre-Mills (2017a, b, 2018) on how to motivate local people to work *with nature* to protect the common good by enabling them to move away from business as usual, to embrace more sustainable and re-generative approaches by mapping and modelling social, economic, and environmental accounting and accountability.”

Akwasi: “Thank you colleagues totems are one of the ways that people maintain balance between the community and environment, but now we must think of how this is changing. The mountains are now bare where once our totemic animals used to live. the environment is being destroyed as a result of a growing population. This is happening in many parts of Africa where once the sacred forests were protected in west Africa the nomadic tribes are destroying the very forests that were the habitat of their totems. Where once species used to co-exist, they now burn the wood from the forests for charcoal, which is the most popular form of energy. Mphathe is saying that the game parks are also an encroachment on these forests, but we need the parks to protect the animals or they will go extinct and we need to remember that some of the Christian groups not only banned stories of totems but also using herbs, but this is not what Christianity should be doing...”.

Janet: “Thankyou Akwasi, yes, the universal life force can be regarded with awe and respect in many different ways by different cultures and religions. I liked the slide which Pak Rudolf showed to make this point.⁸

Research Context and Background

Janet: “The project builds on a body of work originally funded by local government, an ARC linkage grant and several smaller grants, it has successfully re-developed two older prototypes linked with research to address complex health housing and social inclusion needs (McIntyre-Mills 2008) and mitigation and adaptation to climate change (McIntyre-Mills et al. 2014; McIntyre-Mills 2017a, b) by address-

⁸ https://drive.google.com/file/d/1aDuQ-Yz9zhDibbCWwcbC__zrTGHq9TU/view?usp=sharing

ing social and environmental justice concerns in line with the UN SDG (2017) and UNDRIP (2007, 2008).”

Rudolf: “Yes, if we want to serve the common good we need to be motivated by this universal force. We are all connected. Waves of energy connect us with others. Some researchers have shown that water is changed when different kinds of music are played.”

Janet: “So communicating in harmony can make a real difference and I like your references to the way harmony can be co-created using *angklung* and its potential for group harmony when each person makes a small contribution to the group (link to Rudolf’s slides on https://www.wirasoftfoundation.org/en_GB/web/ecovillage/). I also like the reference to water memory as a possible example of relationality which fits with some of the latest theories on quantum physics and as we stressed (McIntyre-Mills et al. 2022b) it also fits with some of the points made by David Bohm in conversation with the Dalai Lama⁹ and in the Dalai Lama’s (2005) book in which he that reality is fluid. He cites the physicist David Bohm, the psychologist Richard Davidson and the astrophysicist Paul Davies, for example, on the importance of perception and how it helps to shape reality. So I agree with many spiritual leaders in many religions who have made similar points, such as Hildegard Von Bingen:

“We shall awaken from our dullness and rise vigorously toward justice. If we fall in love with creation deeper and deeper, we will respond to its endangerment with passion.” Hildegard of Bingen¹⁰.

By considering the consequences of our decisions for all sentient beings in this generation and the next, we can make better social and economic decisions that protect the environment.¹¹ By engaging in careful questioning and systemic reflection, we can make better decisions. This is why the 12 questions (derived from West Churchman’s Design of Inquiring Systems Approach) are so important in helping to ensure that the boundaries of a project are drawn effectively (also see the work of Gerald Midgely on this point, Refs and link to video). The capability to support a life worth living (Nussbaum 2006, 2011) requires extending our solidarity with other sentient beings, simply because they are sentient (McIntyre-Mills 2021a, b, c).”

What is the Project About?

Janet: “The focus of the research is to support the development of a circular green economy by using a digital engagement platform to enable rural villagers to create job opportunities by exploring how they can use local talents and resources in ways that support the 17 UNSD goals, but we focus on creating partnerships to achieve a circular green economy and building upon local knowledge. Participatory action research drawing on Wadsworth (2010) will inform ways of mapping the protection of living

⁹ <https://www.infinitepotential.com/>

¹⁰ <https://quotestats.com/topic/quotes-about-hildegard-of-bingen/>

¹¹ C. West Churchman (1971) explains that ‘decision’ is derived from the Latin ‘to cut’. Thus policy decisions need to be made carefully in ways that protect the wellbeing of all living systems of which we are just one strand. West Churchman writes about ‘the enemies within’, these are our values, which paradoxically make us human. We need to be aware that “religion, morality, politics and aesthetics” can make us agree or disagree. But we need to understand that values are often the filter through which we see the world.

systems . This is the related work which Wirawan will follow up in his planned PhD research in Indonesia.”

Rudolf: “Yes, the research in Indonesia which will help to inform our community of practice aims to explore the following:

- To what extent can participation in the social, economic and environmental decision making process via on line engagement help participants to develop a greater understanding of a) the potential of a circular economy in relation to products/services/ skills that they identify and b) support their ability to earn a living whilst supporting their wellbeing?
- What are the perceptions on the engagement process to map social, economic and environmental decisions and to what extent has it motivated changes that are in line with the UN SDG? “

Janet: “We are researching side by side with our colleagues in Venda and Indonesia (who are also engaged in joint research) on a new form of education to support learning and growing a future through a green circular economy, to cite a summary of our joint project: ‘This is a social enterprise project in South Africa (set up as a community engagement project in 2021), is supported by a team of academics at the University of South Africa (Unisa) linking with an organisation called *Dzomo La Mupo* in Venda (an organisation founded by Mphatheleni Makaulule), This project is linked with a wider community of practice (COP). The COP includes colleagues in Indonesia (from the Universitas Padjadjaran) and the University of Adelaide and that connects with local community. This learning approach supports social inclusion and green, re-generative entrepreneurship. The Tshidzivhe Project and Bamboo co-operative (Venda) has been set up as part of an action research project led by Patricia Lethole and supported by training on an ecological calendar facilitated by Mphathe Makaululu.’

We are all working together (and applying ubuntu) as part of a community of practice on Indigenous knowledge systems as a means of motivating creative engagement towards achieving the UN SD goals and assessing the extent to which the commons can be protected by learning more from indigenous communities and leaders about how to achieve low and zero carbon living. Distributed governance and leadership can be facilitated by the principle of subsidiarity which requires working at the local level and engaging with people, the wider aim is as follows:

‘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 whether an online community of practice (supported also by in-person focus group participation) enables participants to learn more about community co-operatives in terms of potentials and pitfalls, bearing in mind the UN Sustainable Development Goals (SDGs). The SDGs identified by the participants as particularly relevant are: Goal 1 (No poverty); Goal 2 (Zero hunger); Goal 5 (Gender equality); Goal 8 (Decent work); Goal 12 (Responsible production and consumption) and Goal 17 (Partnerships). Overall, the intention is to explore the extent to which social enterprise can help to re-generate social, economic and environmental wellbeing. We also aim to consider

with participants 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 Vandana Shiva’s concept of Ecovillages which are aimed at activating Sustainable Development.’

The project will be used to enable capacity building and the development of an organic circular economy to be tested in Indonesia as part of a PhD research project by the first author. Rudolf Wirawan and I have been working since 2014 on extending two prototypes. The software is being developed and tested initially with communities with whom we work in a community of practice. We are working with PGSA¹² an organic farmers organisation and the community has successfully formed a co-operative. The protection of forests and organic agriculture go hand in hand and to that end in South Africa we have registered with PGSA to help us learn more about organic farming methods and perhaps to achieve certification for some of the farmers. The community of practice is supported by a network based on sharing different kinds of knowledge in a respectful manner so that we learn from one another.

Our hope is that the learnings will later be scaled up through an eco-village website and associated pathways to wellbeing software to map transformation from ‘business as usual’ and to help people to think through the implications of their decisions so that they take steps towards supporting wellbeing stocks (Stiglitz et al 2010) and re-generative living (Wahl 2016) so that they care for multiple species. In Indonesia the ‘One village, one product’ (OVAP, Morihiro Hiramatsu—Governor of Oita prefecture 1979; Yogyakarta 2014) applied by President Jokowi in 2008–2009 has also been inspirational. Our commitment is to continue to work successfully to support and scale up the PGSA mission on organic farming as well as justice for farm (and other) animals and to operate in accordance with the principles set out in the ecocide law (Higgins et al 2013) which stresses that peace depends on supporting a liveable habitat for all species to live undisturbed lives. It is admirable that many of these principles are already in practice in both of these communities. So far we have applied the first prototype on complex needs funded by an ARC and several small grants. The old version was well received when we worked with users at various NGOs, including a job club, a women’s shelter and when it was scaled up for local government engagement on climate change and shown in a range of contexts locally and internationally. The next iteration applied decision making and problem solving to mitigating and adapting to climate change and was funded by local government resulting in invitations to demonstrate its potential. Both versions were well received when working with the participants but the user interface had remained a challenge as it required training people how to use it. This was regarded as quite useful as we used it to teach some basic computing skills, but for engagement with the community it was not ideal as it relied on a university server, software that had to be repaired and monitored. It worked best when team members used it to enter the data which they collected through face to face research conversations.”

Rudolf, “Yes the engagement can be supported by a distributive network which looks like this. I know that we have found that the letter written by Einstein to his daughter is a fake, but the idea that centralized systems of control need to move towards decentralized and distributive models that support regenerative living is an approach that has been supported by many religions and in many philosophies. I have summed it up in a Diagram 1:

¹² <https://www.pgssa.org.za/>

Janet: “Unfortunately no one knows the origin of the letter. The argument nevertheless has been made by many great spiritual leaders and it is a value that indeed ought to underpin transformative research for re-generation. The heart of new economics is the need to support living systems in such a way that the concept of profit as the economic bottom line in old style accounting and accountability is set aside and instead the focus is on understanding that wellbeing and so-called wellbeing stocks (Stiglitz et al 2010c, a, b) depend on supporting a living systems of which we are a strand. Our colleagues in Venda call this Mupo. Mphathe Makaulule¹³ explains Mupo as follows:

‘The word Mupo describes the origin of creation, the creation of the whole Universe. When we look at nature, we see Mupo. When we look at the sky, we see Mupo. Mupo means all that is not man-made. Mupo gives everybody a space: men have their own space, children have their own space, women have their own space. Our role as women is to accompany all—from family, clan, community — to go back to that order. That is where we come to the name Makhadzi. Makhadzi is the name for VhaVenda women elders, but it literally means ‘the space of a woman’s role.’

Mphathe: “All creatures and all living things have rights and the need for their own space. Each of her emails ends with this quotation from Thomas Berry:

‘We cannot have well people in a sick planet, if we poison the soil, we die, if we alter the climate we affect natural conditions, every component of the Earth has three right... birds has birds rights, rivers have rivers rights...’

Janet: “This is a very profound quotation and the work of Thomas Berry¹⁴ on earth jurisprudence¹⁵ complements the work of Higgins et al. (2013) on their bill for an Ecocide Law. The role of the Makhadzi is very important for empowering women and protecting nature.”

Enid: “Yes, the empowerment of women and communities involves creating opportunities for those who are powerless so that they can gain the experience and confidence needed to influence decisions that affect their lives. We believe women to be nurturers of families, when empowered they are able to support the whole community not their only immediate families only. As the saying goes you educate a man you educate an individual but if you educate a woman you educate the whole family (Ghanaian proverb). As a hand that rocks the cradle, ideally a woman cares, nurtures and protects. Empowering these women in our project will also inspire women in terms of what women can and cannot do. People will start adapting to the fact that everyone is equal and so are opportunities in life. This will help accelerate the unlocking of women’s potential, boost their self-esteem and eventually will mobilize the support of crucial stakeholders within their areas of residence. These stakeholders can then use their resources to help more women.

When a woman is empowered she is able to transfer the skills to other women and also to take care of the young ones by feeding them well and ensuring that emotionally and physically their family and community are healthy and sound. A study

¹³ <https://www.culturalsurvival.org/publications/cultural—survival—quarterly/there-no-longer-time-mphatheleni-makaulule-agency->

¹⁴ <https://www.coursera.org/lecture/thomas-berry/thomas-berry-a-scholar-of-world-cultures-JsSSv>

¹⁵ <https://www.rainforestinfo.org.au/deep-eco/earth%20jurisprudence/Earth%20Justice.htm>

based on a Comprehensive Health Project, conducted in India on empowerment of women on agriculture, environmental factors and other health issue revealed that when women are financially independent from their husbands their mental health improves. The women in the project further acknowledged that the opportunity to independently earn money resulted in a range of positive changes at both the individual and family levels such as sense of competence and control, and consequently for their mental health. (Kermode et al. 2007).

Women's Economic empowerment is defined as increasing the opportunities available to women which includes creating a flexible work environment to help harmonize work responsibilities within the family, accepting the involvement of women in many fields, and creating an appropriate legislative environment to achieve the participation of females in activities related to the economy (Safi & Tarawneh, 2018; Saqr & Shehata, 2009).

Though women were economically disempowered, they were able to share the little they have with the environment which is inclusive of non- living and living things. Because women are empathetic and passionate in nature, they believe in a context of sharing is caring in a collective way not individually, their generosity can be beneficial to the community which is inclusive of non-living and living as mentioned above. This corroborates with Ethiopian proverbs which indicates that “where a women rules, streams run uphill.” The implication is that women are connected and relate to the environment and they use their possessions for the benefits of many. As a result, their connectedness and relating to the environment multiply the benefits. This is evident in Non-Government organisations, where women are at the forefront ensuring that orphans and the societies which are affected by poverty benefit through their little act of gratitude. If women are empowered, they will be a motivation to others no matter how old you are and despite your circumstances. It will also break the cycle for the upcoming generations because they will now have mothers, aunts and sisters who are reaching for their dreams and have solid knowledge to share.”

Rudolf: “Yes, we need to extend opportunities and power, this is what I mean when I say that we need to develop a distributive network approach will help to support the sustainable development goals through working with people who have been excluded as a result of a narrow business mindset. This approach to the commons need to help people move from a centralised (ego) to distributed (eco) approach as depicted in the above diagram. The purpose of our transformative research will be to explore to what extent Regenerative Living can be supported through a distributive network.

The following diagram stressed further the relationship between ego/eco, and the related consequences determine by the nature. I think that the universal force of love (which many religions support) have understood this. As depicted in the diagram which I constructed I suggest that sine¹⁶waves with a higher amplitude may be linked with hectic lifestyles focused on individual survival and competition and those who are engaged in mediation and slower lifestyles have more time to connect with others. For example, most indigenous people have a direct connection to nature (Fig. 1).¹⁷ I have read the saying “We Don't Own the Land. The Land Owns Us.”, Bob Randall.”¹⁸

¹⁶ <https://betterexplained.com/articles/intuitive-understanding-of-sine-waves/>

¹⁷ <https://www.youtube.com/watch?v=w0sWIVR1hXw>

¹⁸ <https://www.youtube.com/watch?v=w0sWIVR1hXw>

As depicted in the above diagram of sine¹⁹waves, the higher the amplitude, the higher will the ego grow, ...the life in this stage is predictably always hectic to extremely hectic, there will be always war and peace interchange all the time. On the other hand, when the amplitude is low, life is much more relaxed and spiritual. For example, I think that ideally indigenous people have a direct connection to nature.²⁰ I have read the saying “ We Don’t Own the Land. The Land Owns Us” by Bob Randall.²¹ The research by Prof Masuru Emoto,²² suggests that water not only has feeling, but water also has memory (Emato 2017).²³ The above diagram on the left, depicted the difference between positive and negative messages applied to water. This may explain, one of the ways that indigenous people connect with the nature. It has been dismissed as ‘psuedoscience’ and criticised for its lack of rigour, but it does nevertheless raise some interesting questions.”

Janet: “Luc Montagnier (2014),²⁴ Nobel Laureate (a virologist) later also decided to revisit the controversial work of Jacques Benveniste and he also makes a similar point that water retains memory and stresses that although his work is controversial it is important to try to understand the nature of life. Research by botanists (Rayner 2017, Gagliano et al. 2–18) and animal researchers (De Waal 2009; Meijer 2016) stress that communication is not species specific. Emoto is suggesting that communication may in fact span organic and inorganic life and this is a notion accepted by many indigenous people. I agree with you that people who meditate are able to control their emotions and to relate better to other people. Certainly Mahayana Buddhism, for example also stresses the need to consider others, including all sentient beings in all aspects of daily life.

The rituals associated with many religions have focused on blessings and music, singing and chants that support “healing energy”, the work of Masuru Emoto which you mention is interesting as it appears to show how sound waves influence water, which of course the body is made out of and water is one of the most common elements. I think communication with plants and animals possibly also works on the same lines. But I am not a natural scientist nor a botanist nor a zoologist. I do know from my own experience that some people emanate positive energy (most of the time) to which we respond and certainly animals respond to this as well. For instance in Chapter 1 of *Transformative Education for Re-generation and Wellbeing* (2022 in press with Springer), I explain that:

‘Re-generative narratives draw on spirituality and First Nations. David Abram explains in his foreword to an edited edition by Kaza (2020) on the work of Joanna Macy (Macy 2015; Macy et al. 2014),²⁵ that the notion of ‘interbeing’ can be understood very simply and directly when we comprehend that the air we breathe in, is the air plants breath out. We could add to this, that we are what we eat and what we consider constitutes food. By understanding the way in which living systems relate dynamically is the first step towards understanding mutual causation and the importance of dialogue in what

¹⁹ <https://betterexplained.com/articles/intuitive-understanding-of-sine-waves/>

²⁰ <https://www.creativespirits.info/aboriginalculture/land/meaning-of-land-to-aboriginal-people>

²¹ <https://www.youtube.com/watch?v=w0sWIVR1hXw>

²² https://www.youtube.com/watch?v=P78VZzaHDVA&ab_channel=GOYSTube

²³ Dr Masaru Emoto Hado Water Crystals Full Documentary 2017. https://www.youtube.com/watch?v=5O8LPnlh_sM&ab_channel=JacquelineDemontague

²⁴ <https://www.youtube.com/watch?v=R8VYUsVOic0>

²⁵ Joanna Macey discusses Buddhism and systems theory and underlines the similarities.

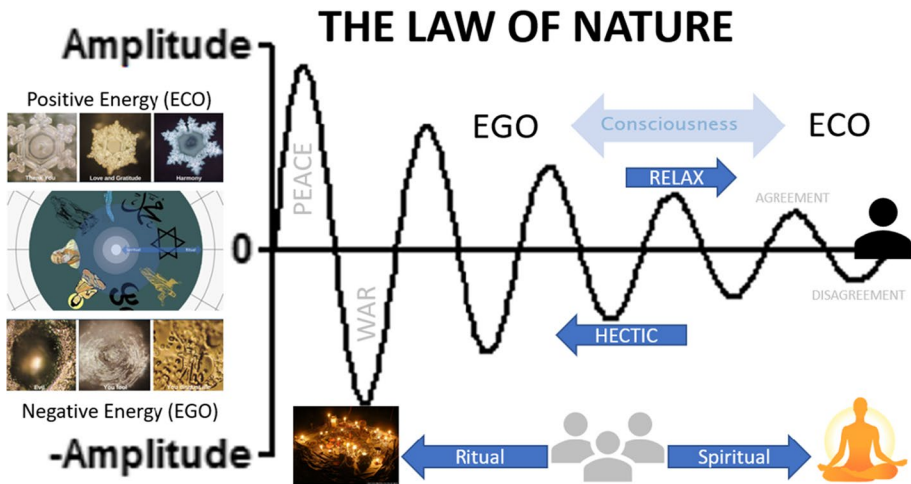


Fig. 1 The law of nature. Source: adapted by Wirawan from Wu Wai Philosophy and the sources detailed below and in a slide presentation (Please find below the links to the presentation https://drive.google.com/file/d/1IqtqBLMOybeNCEA_g-1E1b07RHH9TzM1/view?usp=sharing). Some of the images were created by Rudolf Wirawan and some were taken from <https://www.subpng.com/png-hoq83a/>; <https://wallpapers.afari.com/w/EdqRXb>; <https://www.linkedin.com/pulse/effect-words-water-rocky-detwiler/>; and https://www.graphpad.com/guides/prism/latest/curve-fitting/reg_damped_sine_wave.htm

Bohm (2002) describes as a ‘participatory universe’ which he explains in conversation with HH the Bohm and Dalai Lama (2018). By participatory universe he means that our thinking shapes the world we live in. If we compartmentalise human beings into body and mind we separate thinking from being. Anger, anxiety and depression impact our physical health. Our emotions have a direct effect on physical molecules in the body as explained by Candace Pert (1999) in her book “The Molecules of Emotion”. In fact the way we think can influence our physical health...’

Just as our thinking effects our physical health, it also effects the health of other species and the natural world, because our thinking shapes who and what we value. Our thoughts shape the landscape – as Indigenous first nations understand. If voters do not understand that our shared global future depends on limiting climate change to 1.5 degrees Celsius, then protecting forests will not be prioritised. For example, voters who support mining profits and cattle pastures to support the beef industry voted for the Brazilian President Bolsonaro at the expense of the Amazon.”

In this chapter I also cite the concept of ‘Interbeing’, the concept applied by a Vietnamese Buddhist monk Tiep Hien during the Vietnam War has been taught more widely by Thich Nhat Hanh.²⁶

Rudolf: “ In Fig. 2 below, I explain that the circle depicts the Universal Force of Love. If the middle point of the circle represents the Universal Force of Love, then there will be 360 points in a circle. Let’s assume the point in a circle is a view (religion or believe), then the only way to find the Universal Force of Love is by moving towards the middle point and as a result there will be only one view (for all religions or believes), which is LOVE and the concept of LOVE will be understood not only by human, but animal and plant as well. On the other hand, if the points X and Y are moving away from the central point, the different view

²⁶ <https://uplift.love/thich-nhat-hanhs-14-principles-of-engaged-buddhism/also>

between points X and Y will be bigger. As a result, the further we move away from the central point, the view's differences will be getting bigger and it is prone to conflict, especially if this is triggered by the 1% Elite as explained in her book *Oneness vs the 1%* by Vandana Shiva (2020a, b). agree the idea of a universal force of love can be seen in many ways. “

For the ecovillage approach, we use two approaches to arrive at the middle point. The first is to use Ecovillage Pathways to move from EGO to ECO. The second is to use blockchain technology to ensure that truth, honesty, and integrity are automatically maintained.

Janet: “Thank you, we need to find what unites us as human animals (even if we have some cultural differences) as we all depend on a shared habitat with other species for our survival. Humanity needs to relearn or *re-member* that we depend on others. The notion of *ubuntu* is expressed very well as follows (Romm and Lethole 2021:111):

‘the *Vhavenda* (according to Patricia’s insider account) as potentially implying a close relationship of humans with one another and with the rest of the natural world (not seen as separate from human existence), as reflected in their choice of totems and management of trees in their environment. These practices can be seen to express a sense of inter-dependence, and interrelatedness between humans and ecological systems, where human living and non-human living are not isolated from each other. However, we also pointed out that although this is the interpretation we would like to draw out, the cultural symbolism does not mean that everyone feels this sense of “cosmic unity”.

They explain that this contribution aims “at advocating and activating the potential of this (Ubuntu-inspired) orientation for embracing a non-anthropocentric ethics.”

Mphathe: “I spoke at the Council on Wild Life this week council and stressed the need to protect spaces for people and animals ... we need to protect their habitat. The wild leopards are threatened when we lose the forest and when traffickers and hunters seek skins and trophies .”

Rosa, the representative from PGS (Participatory Guarantee Systems) discussed their vision for organic farming and how she could help support the organic farmers in Venda:

“I am an urban farmer and concerned about food security and moving away from harsh chemicals and fertiliser that actually destroys the soil. We will not have healthy food if we do not have healthy soil. We must protect nature and protect the soil ... We are fighting with what god created ... we are now crying, what is happening?

Rosa also emphasised that:

“Grazing for all animals is needed” and stressed that in her opinion fences prevent some small farmers accessing grazing

Akwasi: “The commons will need to be protected so that some do not overgraze at the expense of others. In our work together we met Maxwell who stressed many of these points. I will quote from our joint chapter, in which Maxwell, a community facilitator stresses the need for free ranging grazing and the avoidance of food lots and confinement of cattle. He works with the Tygerkloof School and teaches farming to the learners and to the community. Maxwell stresses:

“Grass is indeed best for cattle. Healthy cattle need healthy grass and carnivores who eat their meat will be healthier. Cattle manure is a good fertilizer, but overgrazing by introduced species has been a problem in many places, particularly Australia. Kangaroos are better suited to local conditions Others argue that sheep and cattle are part of the ecological problem in Australia because they graze the grass too low and in fact, agriculture and food sustainability would be better served if those who feel

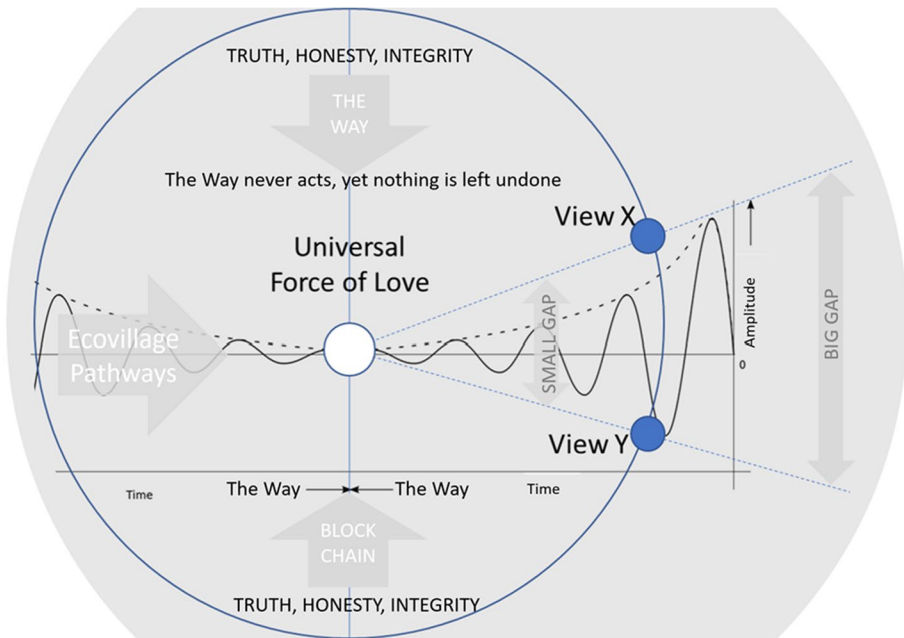


Fig. 2 An hypothesis. Source: Rudolf Wirawan adapted from Taoist philosophy

they must eat meat relied on the local indigenous kangaroos. These local ruminants are better suited to fertilising the soil.” (cited in McIntyre-Mills 2022 et al. 628).

Janet “Yes, it is worthwhile revisiting our scoping visit to Tygerkloof. Maxwell is doing very important work which needs to be scaled up in South Africa. In the same chapter we stress that Tim Flannery (2005, 2012) made similar points on species extinction (associated with over grazing and the lack of stewardship) by colonial governments and we continue by explaining that the work which inspired Maxwell, namely by Alan Savory (2014, 2018) is also based on stressing that grazing by all ruminants helps with fertilisation, but that it is also vital for the wellbeing of grazing animals. One thing is clear and that is that Savory’s ideas appeal greatly to the meat industry, but we need to reduce meat consumption, so in fact we need to be careful about options that try to continue to focus on food production for growing cities that is simply unsustainable. In the same chapter (2022: 628) we stress that “feedlots are indeed harmful for the health of everyone (see Ketcham, 2017) as the feedlots use antibiotics which exacerbate the problem of antibiotic resistance. This is yet another case of a misdirected system (Ackoff and Pourdenand 2001).

Hardin (1968) in *Tragedy of the Commons* cautions that over grazing will occur if the commons are not protected. Vandana Shiva (2012a,b, 2020a, b) and Elinor Ostrom however disagree and argue that many local communities have found successful ways to protect the commons. Our goal is finding out more about these principles and to try to scale them up with other communities:

“A plea for a relational approach to protecting living systems is developed in *Planetary Passport* (McIntyre-Mills, 2017a, b) and *Balancing Individualism and Collectivism* (McIntyre et al. 2018). The critical heuristics approach is vital to address the ‘banality of evil’ which now passes as commonplace governance. Today the markets

are open but conceptual and spatial (geographical) borders are closed. This is the paradox that is not addressed in the name of ‘border protection’. The case is made (drawing on Shiva 1988, 2002, 2012a, 2012b) that sharing resources in common does not lead inevitably to the tragedy of the commons (Hardin 1968) if the right design conditions prevail (Ostrom, 2008) and reciprocity, trust and ongoing monitoring by engaged local people occurs from below in line with post national conventions to protect people and the planet (Held, 2004). Human capabilities can be extended through indigenous *ways of knowing and being*. These ways respect the interdependency of living systems....”(McIntyre-Mills 2021a, b, c:165).

This requires protecting and re-generating stocks for the future (Stiglitz, et al. 2010) but re-framing not only economics but our relationships. The work of Joseph Stiglitz builds on the work of John Elkington (1994, 1997) which he extend to include many aspects to support a viable future. It is interesting to note that Joseph Stiglitz was once the chief or deputy chief of the World Bank, but he disapproved of narrow decisions that privileged profit at the expense of the wellbeing of current and future generations Stiglitz et al, 2010). Stiglitz explained in *mismeasuring our lives* that we need a web of factors that act as indicators of wellbeing, defined as Stiglitz et al. 2011: 15 use a multidimensional measure of wellbeing spanning:

“Material living standards (income, consumption and wealth), 2. Health, 3. Education, 4. Personal activities including work, 5. Political voice and governance, 6.

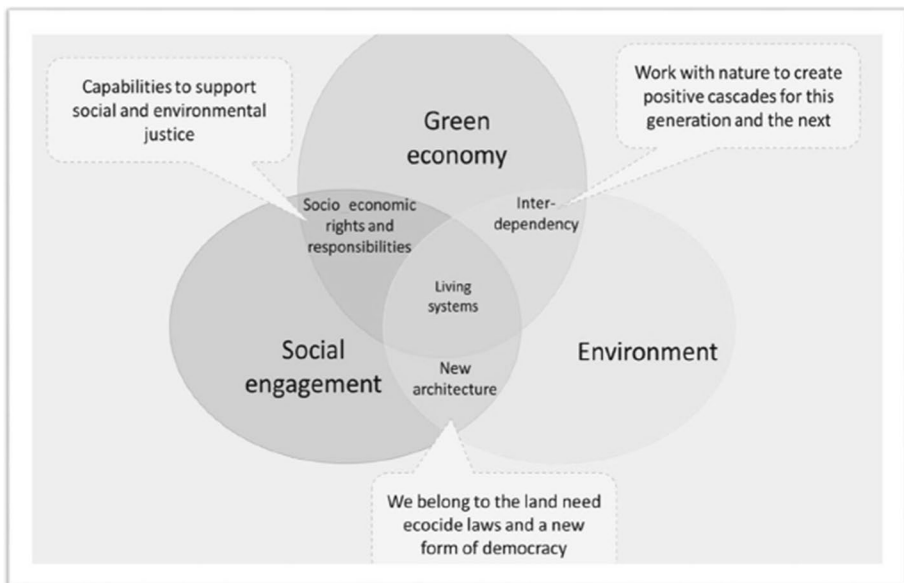


Diagram 2 Wellbeing depends on living systems and interbeing. Sources: McIntyre-Mills and Wirawan (2021) From Polarisation to Multispecies Relationships this research makes a contribution to the field by advocating an ecology of mind (Bateson 1972) based on an understanding that economic indicators are not separate from environmental indicators. Irawan, Agus Bambang, 2015 ‘Reframing approaches to performance accounting in Indonesia’. Irawan and McIntyre-Mills 2014. ‘Application of Critical Systems Thinking to Performance Auditing Practice at the Indonesian Supreme Audit Institution: Issues and Challenges’, *Systems Research and Behavioral Science Journal*

Social connections and relationships, 7. Environment (present and future conditions), 8. Insecurity, of an economy as well as a physical nature.”

Janet continues: This approach builds on the legacy of Elkington’s (1997) *Cannibals with forks* which was inspirational and helped to reframe accounting and accountability. In policy terms it is important that the United Nations Local Agenda 21 adopted the triple bottom line approach which in turn helped to make people aware of the implications of their choices on the environment. This was back in 1990’s as the world began to wake up to the pressing dangers outlined in the Club of Rome Report “Beyond the Limits (Meadows and Randers 1992). It is interesting (and very relevant to note) that C. West Churchman and Aleco Christakis were part of this meeting. They stressed that although they agreed with the modelling, the process of modelling needed to engage and involve the public. Christakis and his colleagues developed an approach called Structured Dialogue which enables participation in so-called Global Agoras, on the implications of decisions (Christakis and Bausch, 2006; Flanagan and Bausch, 2010) The systemic pragmatism of West Churchman’s Design of Inquiring Systems is based on asking questions and the structured dialogue approach helps to engage members of the public to think about their decisions. I was privileged to work with West Churchman’s colleague John P. van Gigch and to be introduced to the work of Christakis and his colleagues through attending the International Systems Sciences and participating in a demonstration of the cogniscope in Crete with his colleagues Harris and Wasilewski (2004). This thinking and practice inspired the pathways to wellbeing approach together with John Roddick, Denise de Vries, Ann Roach, Doug Morgan and members of Neporendi and a number of NGOs in South Australia. It was supported by an Australian Linkage Council Grant and several other grants which allowed for two iterations of the prototype to be tested on projects on 1. Complex Health Housing and Social Inclusion (McIntyre-Mills 2008) and 2. Mitigation and Adaptation to Climate Change (McIntyre-Mills et al 2014).

Methodology and praxis

Janet: “Perhaps at this stage you can explain how Taoism / wuwei is applied in our project? I think we can agree that Taoism has much in common with indigenous notions of oneness with nature. The approach in pathways to wellbeing is informed by indigenous ideas of oneness with nature, Mupo or interbeing²⁷ (Abram in Kaza 2020). It is also known as natural inclusion (Rayner 2010) as it enables a dynamic interactive process that enables people to think through the consequences of their choices and the impact of these choices on wellbeing by considering 1. What they have in material and non material terms, 2 what they need, 3 what they are prepared to add /discard from their lives (changes which they contract to make in terms of actions and changes in their thinking. They also detail what services they will use from some prompted suggestions or services they will offer to others) 4. Turning points for the better and worse, 5 Barriers to achieving change.

²⁷ In his foreword to an edited edition (Kaza 2020) on the work of Joanna Macey, David Abram explains that the notion of ‘interbeing’ can be understood very simply and directly when we comprehend that the air we breathe in, is the air plants breath out. We could add to this, that we are what we eat and what we consider constitutes food. See Kaza, S. 2020 A wild love for the world: Joanna Macey and the work of our time. Shambhala. Boulder. Also see:

Macey, J. 2015. Mutual Causality in Buddhism and General Systems Theory <https://www.sunypress.edu/p-1176-mutual-causality-in-buddhism-an.aspx>

Nichol (1997:311–313) who is *not indigenous* explains how a member of the Karnai Nation who is a skilled software designer used animation to tell stories for future generations about how we human beings are related to nature ‘rivers, trees, and crows; stones and sand; wind and time...’. This is a very different approach to computing as it emphasizes our link with nature, rather than disconnecting from nature. This approach resonates with my own experience of trying to design with indigenous people, namely the members of Neporendi in South Australia. Nichol (1997: 311) refers to Gregory Bateson’s ‘ecology of mind’ and emphasises the positive and negative aspects and cautions us about the pathologies of assuming that algorithms can predict based on simple binary logic that is de-linked from embodied warm human beings. This is the greatest challenge. His daughter Nora Bateson therefore refers to the need to always work with people to generate warm data, based on stories.

- To what extent can we draw on the potential of big data guided by ongoing interactions with indigenous leaders who care about protecting the lungs of the planet in many parts of the world?
- If we spend too much time in front of computers and strive to saturate ourselves in cyberspace it will have consequences (Gergen 1991, Greenfield 2008, 2015). Nichols also cites several authors such as David Bohm to explain that if we rely on the ‘apertures’ created by binary logic to shape patterns that are fed to us as algorithms, we will become increasingly misinformed about the world.

This is not to deny the place for computing, but we should use them as tools that we design for specific purposes and remain in touch with the environment and the flesh and blood people with whom we relate:

Nichols (1997: 349–350) cites several authors who draw on Hume to explain that our memories are based on *our senses and our experiences over time and that our perceptions shape who we are as a result of habituated memories. So re-remembering is drawing on these stored perceptions that were grounded in felt experience.*

Donna Haraway insisted, those who are marginalised need to be the designers, not the object of other people’s designs.”

Enid: “That is so true. I like this quote that ‘Donna Haraway insisted, those who are marginalised need to be the designers, not the object of other people’s designs’, which is what I believe with our project we are working towards.”

Janet: “Yes, If purposeful designs are created to protect living systems this could be a positive ecology of mind.

- If purposeful designs are created to protect the life chances of some (rather than others) then this is a negative consequence of an ecology of mind. Nichols (1997: 345) refers to the way in which the *system can select or ‘sieve’* what is regarded as relevant for a particular purpose through ‘high speed Venn Diagrams’ that determine the way we see the world.
- If the designs are to protect water, food and energy security then we need to ensure that the programs consider the issues of where the boundaries are drawn and why.”

Rudolf: “To achieve sustainability, we do need indicators. We can do this in various

ways—from environmental indicators such as water quality and air quality to social indicators like education levels and poverty rates. Then, once we know what’s going on, we can act upon it or do something to achieve it.”

Janet: “Yes, developing a *priori norms* and a *posteriori indicators* are indeed a starting point which we address *together with members of the community*. I thank you for making it possible to build the third prototype to enable the social, economic and environmental decision making to support the circular economy as detailed in the slides that you showed us this week as part of your higher degree studies and as part of your role in the community of practice (see links detailed by Rudolf Wirawati at the Wirasoft website²⁸ and zoom²⁹ links”).

Rudolf, “Yes, together we can grow in the right way. The triple bottom line was first introduced by John Elkington. The triple bottom line is a way of measuring the success of an organization, not just on its economic performance but also on the social and environmental impacts it has (Diagram 3).”

Janet: “The United Nations protocols could be scaled up as a Global Covenant (Held, 2004) supported by an International Ecocide Law (Higgins 2012, 2018) that could ensure individuals, organisations and nation states can be held to account if the environmental fabric is destroyed. In Planetary passport the case was made that democracy needs to find new ways to engage people to think about their rights and responsibilities to their immediate family, their neighbourhood and the wider region by enabling them to think about different scenarios for the future and making informed decisions by enabling them to think through the implications of choosing one or another scenarios, such as ‘business as usual’, ‘making small adjustments’ or ‘living sustainably and well’. Participants are asked to consider a) What they perceive they need to **add** to their lives to make a difference to mitigating or adapting to climate change, b) What they perceive they need to **discard** from their lives to make a difference to mitigating or adapting to climate change c) What they perceive are the **turning points** for the better or worse, what the barriers are and what services make a difference.

Telling a story and thinking about what we have and what we need and what we are prepared to add or discard from life is part of stepping into another conceptual space. The evaluation of the level of importance of multiple and a simultaneously important issue is important by reflecting on one’s life in terms of different scenarios and the consequences of these choices, for oneself and others in one’s community and environment, for example:

Box 1

-
- *I have* the following things in my life – understanding of human rights, respect for biodiversity, fear for the future/ hope for the future, a confidence, or lack of confidence, loss of home due to natural or other disaster, no family/ community support, responsibility to care for others and very high levels of stress
 - *I need* in my life – a home, a sense of safety, a place near public transport and hope for the future
 - *I will add* to my life – more community supports from a range of services and /or more community engagement to lobby for resources, more connection to nature
 - *I will discard* from my life – a sense of hopelessness, a sense of entitlement, excessive consumption
-

²⁸ Website: https://www.wirasoftfoundation.org/en_GB/web/ecovillage/venda

²⁹ Zoom: https://protect-au.mimecast.com/s/nHYjCMwGz2IzR5A4hw_1VU?domain=drive.google.com
https://www.wirasoftfoundation.org/en_GB/web/ecovillage/

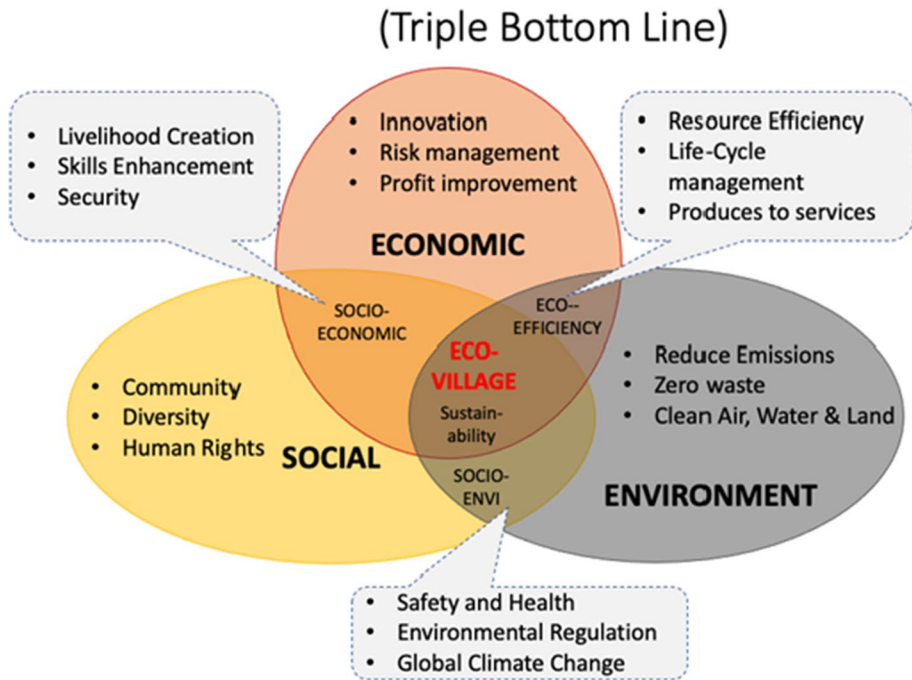


Diagram 3: Extending the triple bottom line. Sources: The logic of the design (Source: Drawing on De Vries in McIntyre-Mills et al. 2008 and 2011) draws faithfully on the design from Pathways to Wellbeing as summarised and demonstrated (see <https://wirasoft.com/pathways-video/pathways-demo.html> pathway DEMO_1: Janet McIntyre: Free Download, Borrow, and Streaming: Internet Archive https://link.springer.com/chapter/10.1007/978-981-33-6884-2_15)

- Self-reflection on *the turning points* for the better or worse – hope that consumption can be replaced with greater sense of attachment to others and the environment *Consideration of the barriers* that currently exist and consideration of what could be done to transform society and our relationship to the environment

Sources: McIntyre-Mills et al. 2014, McIntyre-Mills 2017a, b, McIntyre-Mills 2018

Rudolf: yes, the questions what do I/we have, need, what are we willing to add or discard, turning points for the better and worse are in line with the Taoist approach as detailed in Diagrams 4 and 5:

Janet: Our meeting was fortuitous as the software prototype needed to be made safer for users. It had been co-developed, tested and applied in several participatory action research case studies to address a) complex health, housing and social inclusion and b) mitigating and adapting climate change. It was co-created through a cross cultural and multidisciplinary team needed to be rescued as it was not tamper proof and it relied on freely available software that was not sustainable or reliable for scaling up the research *as it could be hacked.*”

Rudolf: “Yes, Trust is one of the most critical factors when applying the prototype to support and enable people to create green sustainable businesses. It can be challenging to build trust, but it’s not impossible. Blockchain for business can help companies boost their bottom line and build trust with potential customers.”

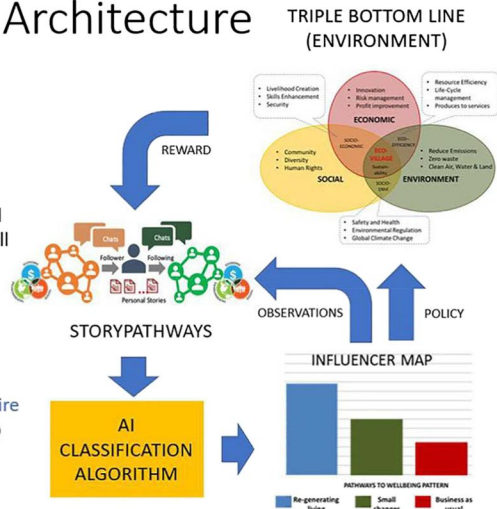
Ecovillage Pathways Architecture (HOW)

ACTION

1. Do something that you love
2. Focus on something the commons need
3. Implement something that pays you well

WELLBEING

1. Seek simplicity (What you have)
2. Grasp the essential (What you need)
3. Overcome selfishness and Wasteful desire (What you are prepared to add/discard)
4. What are the turning points (REWARD)
5. What are the barriers (OBSERVATIONS)



Seek simplicity, Grasp the essential, Overcome selfishness and Wasteful desire

--Tao

Diagram 4 Pathways to wellbeing. Extended by Rudolf Wirawan

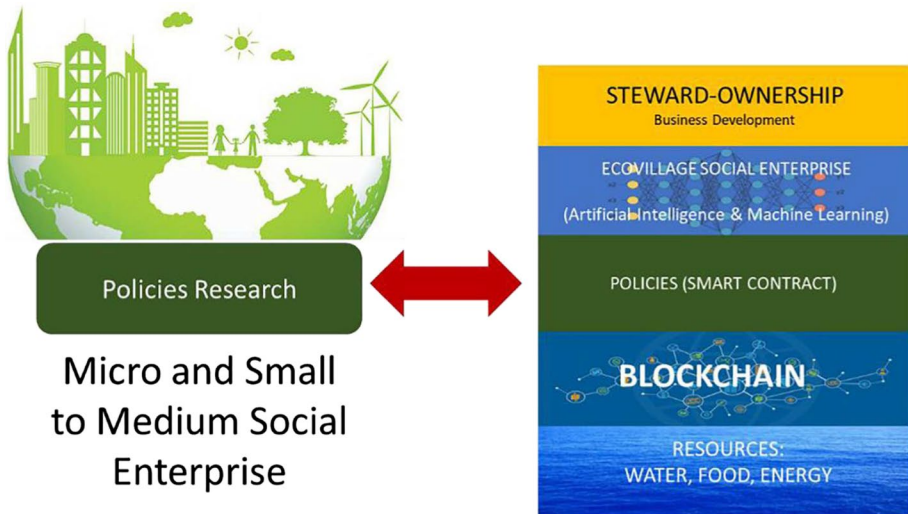


Diagram 5 Stewardship. Created by Rudolf Wirawan

Janet: “Block chain could perhaps help map pathways that hopefully cannot be corrupted, so there are indeed many applications.”

Rudolf: “Blockchain is a shared ledger that members can only access with permission. The blockchain makes it possible to track transactions and ensure they are accurate. Blockchain has a lot of benefits for businesses, including reducing fraud, while building trust (see links to all my slides and joint publications to date³⁰). The first step is telling their

³⁰ https://drive.google.com/file/d/1aDuQ-Yz9zhDibbCWwbcC_zrTGHqp9TU/view?usp=sharing

personal story and they are encouraged to start with what they have and what they need, what resources they are trying to get and the related barrier they have encountered. Managing resources is one of the essential tasks in any business. Without proper resource management, the company will not be able to achieve its goals. There are various ways to manage resources and one of them is to register all resources in an immutable database. This way, you can track all your company's assets and know their current location at any time.

Blockchain is not just a way of recording resources. It also uses smart contracts to alter the resources. The blockchain is a distributed database that can record transactions and store data. So, it can be used to store anything of value, including information and data. Smart contracts are computer programs that implement specific policies. A smart contract will execute the computer program without bias. Policies can be changed by the parties involved and are enforced automatically by the contract code. The primary use is to provide a legal framework for transactions that would otherwise be difficult or impossible to do. For example, it is common for one country's laws to conflict with those in another country in international trade. In these cases, a policy could be used to automate certain transactions to happen seamlessly across borders. I explain it as follows in Diagram 5:

Janet: “Axiologically we all agree that our idea of transformative research is to protect the commons. Ontologically your approach, shaped by Taoism is about how you relate to others and the environment. From the many links (including your video showing your skill as a Tai chi expert) and your painting based on fluid brush strokes, you see energy, waves and flow as the bases of Taoism and communication that is based on achieving harmony at a personal and interpersonal level. This in turn shapes epistemology or how you undertake research. Did you see the article which Norma shared with us which explains how new forms of relationality also imbue research? New forms of (post) qualitative research acknowledge the way in which relating to one another in context can actually change situations. Deleuze and Guattari (see Bogue 1989) agree that emotions, relationships between participants in a research project matter as positive or negative engagement will either help the project to flourish or wither.”

The Transformative Research Approach

Janet: “Let us detail the way in which we explore the area of concern (Table 1):

Janet continues:

“The research process involves working side by side with community members using face to face training plus on line engagement to find key patterns in the data which are used to inform the construction of scenarios (see McIntyre-Mills 2008, McIntyre-Mills et al. 2014, 2022a, 2022c)³¹ that are considered by the participants as detailed.

Rudolf, Let us sum it up as follows in Diagram 6 below:

³¹ 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 the focus is on: the “Health of all species, Ecology to support multiple species and diversity, Fairness to support social and environmental wellbeing and

Footnote 31 (continued)

justice—including gender rights, rights for the marginalised 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 2021a, b, McIntyre-Mills 2022 and McIntyre-Mills et al 2011: 19, 24–27) which is updated below as follows:

A) 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 2021a, b, c 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 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. Each local area enables each resident to be heard. The concerns that they raise about living in the hills or on the plains or near the coast are given careful considera-

tion 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 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.

B. 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.

C. 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 latest IPCC reports (2021) 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.”.

Table 1 Ostrom's 8 principles^a for managing the commons and processes for addressing each principle

Principles	Process using mixed methods
<ul style="list-style-type: none"> • 1. Define clear group boundaries^b • 2. Match rules governing use of common goods to local needs and conditions^c • 3. Ensure that those affected by the rules can participate in modifying the rules^d • 4. Make sure the rule-making rights of community members are respected by outside authorities^c 	<ul style="list-style-type: none"> • The neighbourhood/village/council area is the boundary as detailed above; the villages form the boundary supported by the governance system detailed in Box 1 • Stories and facilitated metalogues are the basis for developing shared narratives to underpin contracts to protect local needs and conditions as detailed above by Makaulule • Village level policy engagement can inform story pathways and pathways to wellbeing software • 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
Working towards the next steps	
<ul style="list-style-type: none"> • 5. Develop a system, carried out by community members, for monitoring members' behaviour^f • 6. Use graduated sanctions for rule violators^g • Provide accessible, low-cost means for dispute resolution^h • 8. Build responsibility for governing the common resource in nested tiers from the lowest level up to the entire interconnected system.ⁱⁱ 	<ul style="list-style-type: none"> • The logic of the design draws faithfully on the design from Pathways to Wellbeing as summarised and demonstrated (see https://wirasoft.com/pathways-video/pathways-demo.html pathway_DEMO_1: janet McIntyre: Free Download, Borrow, and Streaming: Internet Archive https://link.springer.com/chapter/10.1007/978-981-33-6884-2_15 • Influence map based on analysis using Qualtrics and SPSS (Wirawan and McIntyre-Mills et al, in preparation) • 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) • Work through problem solving using face to face negotiations and pathways to wellbeing • Local councils and provincial /state level governments need to support the local areas through the platform of integrated engagement in line with the principle of subsidiarity and Ashby's rule (see in McIntyre-Mills 2017a, b, Wirawan and McIntyre-Mills et al in preparation)

Source: adapted from McIntyre-Mills et al. (2022c) (Ecocentric living: a way forward towards zero carbon. A conversation about Indigenous law and leadership based on custodianship and praxis. *Submitted to Systemic Praxis and Action Research*

^a<https://earthbound.report/2018/01/15/elinor-ostroms-8-rules-for-managing-the-commons>

^bPrinciple 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"

^cPrincipal 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

^dPrinciple 3."Participatory decision-making is vital. There are all kinds of ways to make it happen, but peo-

Table 1 (continued)

ple 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”

^ePrinciple 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

^fPrinciple 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”

^gPrinciple 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”

^hPrinciple 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”

ⁱPrinciple 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”

Janet: “The key characteristics of “Business as usual”, “Regenerative Living” and “Everyday small steps” are as follows involve our values which shape our designs. These are the key characteristics to be considered when classifying the three scenarios:

- Business as usual is shaped by values that support profit and loss at the expense of the environment.
- Regenerative living requires taking social, economic and environmental decisions that support social and environmental justice through a circular green economy that supports multiple species.
- Small steps everyday need to support social, economic and environmental re-generation and sustainability”.

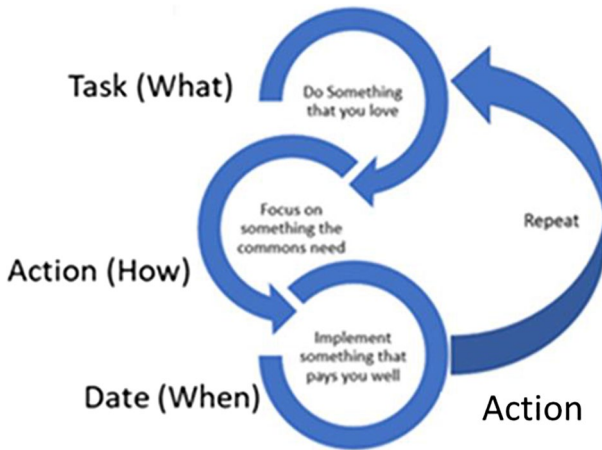
Rudolf: “Sustainability is an essential task because it helps us see where we are today and what we need to do to achieve it. There are many ways of measuring sustainability, but the most accurate and straightforward way is to measure the person affected by the three dimensions which can be achieved through expressing their feeling in the form of a story.

Janet: “Yes, in the original version of the software storytelling and sharing through pictures was very important It does indeed enable people to express complex needs as a web of factors that can be analysed to develop pathways to welling away from a life in chaos, taking steps towards wellbeing or taking steps away from business as usual towards wellbeing by regenerating and sustaining a new way of life.”

Rudolf: “Please see the following Diagram 7 on how the design process could support stewardship³²:

The above diagram depicts the collaboration between Eco Team Leaders and the communities. We can build it into the Venda website, https://www.wirasoftfoundation.org/en_GB/web/ecovillage/venda. The team leader will guide the communities by creating contents and resources to Liferay Portal, the community platform. The Team leader will assign an eco-buddy to a village, which is comprised of a community leader and the villages. The community leader and the eco buddy will assist the villages to create stories, which is based on the following questions:

³² https://www.youtube.com/watch?v=Z2Uy_ODDiZo



1. What you have?
2. What you need?
3. What are you prepared to add/discard?
4. What are the turning points?
5. What are the barriers?

For everyone, the eco buddy will follow the following process to guide the community:

1. Do Something that you love (WHAT)
2. Focus on something the commons need (HOW)
3. Implement something that pays you well (WHEN)
4. Repeat

I will also explain the chat box function and voice recognition in more detail.

Computer-based chatbots could be used to act as eco-buddy to help personalize user's experience. Chatbots collect customer data from interactions. This data can be used by real support eco-buddy to use the information to personalize customer interactions. Customer information can be delivered to eco-buddy in real time when talking to villages via mobile phone, allowing eco-buddy to provide relevant solutions based on their current needs and previous interactions as depicted in the above diagram. To help villages, who can't write, they can use a speech recognition system to tell their story and the system will convert it into text. The tools used to implement the Ecovillage Pathways are the following: Liferay Portal DXP EE³³, Obsidian³⁴, Storypathways (developed in house), Hyperledger Fabric³⁵, Natural Language Processing (NLP³⁶) and Deep Learning (DL³⁷), Qualtrics³⁸, SPSS³⁹.

³³ <https://www.liferay.com/en-AU/products/dxp>

³⁴ <https://obsidian.md/>

³⁵ <https://www.hyperledger.org/use/fabric>

³⁶ https://www.google.com.au/books/edition/Natural_Language_Processing_with_Python/KGibfiiPI4C?hl=en&gbpv=1&printsec=frontcover

³⁷ <https://www.oreilly.com/library/view/deep-learning-with/9781617296864/>

³⁸ <https://www.qualtrics.com/au/>

³⁹ <https://www.ibm.com/au-en/products/spss-statistics>

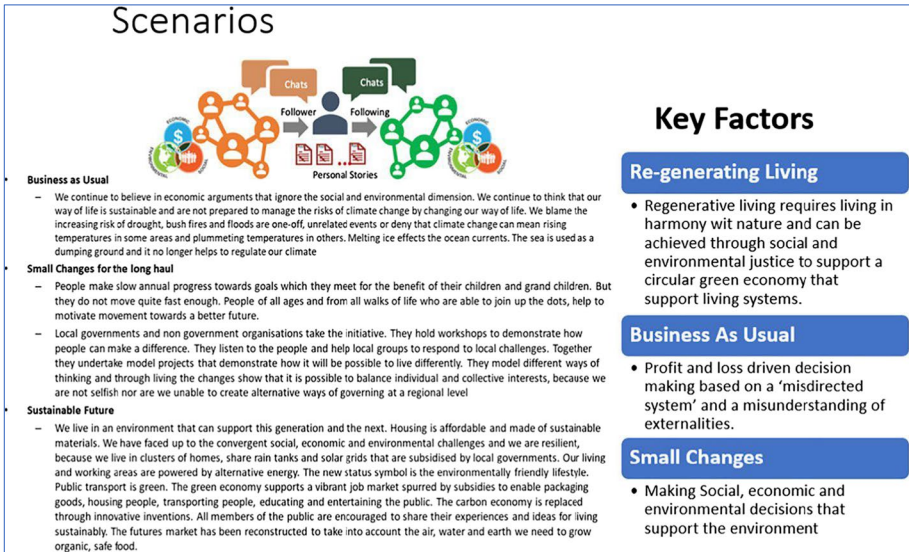


Diagram 6 Key patterns, scenarios and engagement

Janet: “Please tell us a bit more about the Wuwei approach and how it would make a contribution as a distributed system it holds so much potential (see Al-Saqaf and Seidler 2017). Please elaborate on the slides and record by Zoom.⁴⁰ This will help to share your ideas and link them to the summary on Ostrom’s 8 principles and please show us the demonstration that you recorded.”

Rudolf: “The wuwei approach will be applied to encourage communities to market their organic goods by means of a track and tracing system. As depicted in the above diagram, with the help of AI and Blockchain, it is possible to monitor all transactions automatically, and the AI system will alert personnel if something is suspicious. AI can detect frauds and other illegal activities such as money laundering. It can also be used to detect credit card fraud. For example, for food safety and quality assurance system, the following blockchain system can be used to trace the product from farm to consumer. Rudolf: This is how I would map the approach to research. I can explain best by sharing a summary in Diagram 8:

A blockchain application is comprised of three entities: Asset, Transaction and Participation. The asset to be tracked can be anything of value, and each asset modification is done by a transaction (Smart Contract), which the participant executes. In the above diagram, the asset is coffee. For the transaction, it could be tagging, sensing, digital ledger, reading recognition technology (QR Code), and for the participation, it can be a farm, distributor, processing, retailer, and consumer. The following Diagram 9 depicts the potential tracing of a product. In this case, we are dealing with coffee, which can be traced from Planting, Farm Inspection to brewing. The tracing is done by scanning the related QR code using any mobile device. The QR Code could document the history of the coffee from seed to cup, such as the type of the coffee, where it comes from, how it is processed, etc.

⁴⁰ <https://drive.google.com/file/d/1dk9K9bd5P1FriyoWcf2bYQHnfygvitA/view>

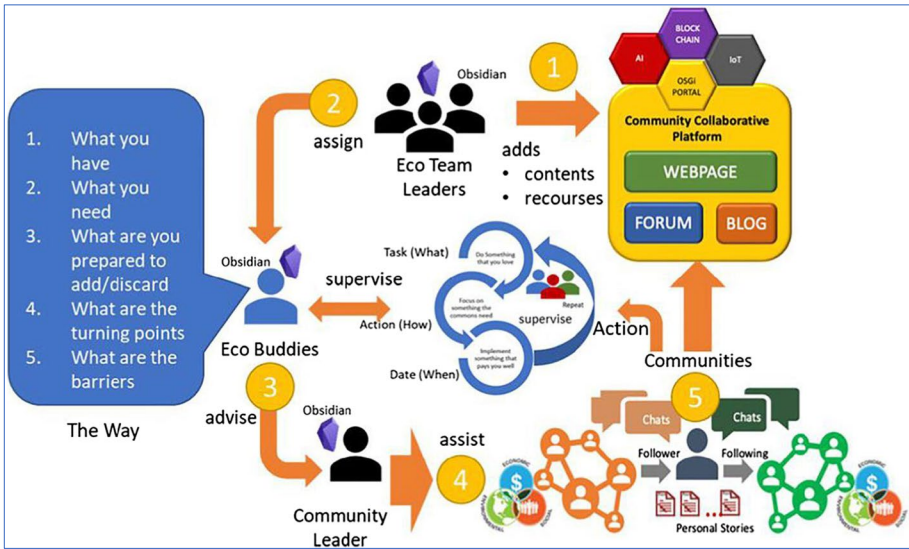


Diagram 7: This is a high level conceptual design by Wirawan building on the Pathways to Wellbeing Design

Rudolf continues: “The top layer is business development based on Steward-Ownership⁴¹. Steward-ownership is a form of business ownership that ensures the company remains in the hands of its owners. It does so by providing that no one can buy out an owner’s interest without their consent and that all owners have an equal say in how their company is run.

The main idea behind steward-owned businesses is to ensure that the company always stays in the hands of those who created it and are passionate about it. Steward ownership is a new and innovative legal structure that more and more business owners are adopting. It can be used to create a unique, tailored entity that is specifically designed to meet the needs of the business and its owners. Steward-ownership is based on two core principles: Stewardship of the company, which means that the company’s assets are protected from any personal liability; and Ownership of the company, which means that each owner has voting rights in company decisions. With this type of ownership structure, no outside shareholders have control over important decisions. The decision-making process is streamlined, as it relies on a majority vote among the owners (they don’t need to reach an agreement or consensus).”

Janet: “ Thank you, so we are applying our vision as to how to address a shared concern, namely how to support a circular green economy.”

Rudolf: “Now see how it builds on the original design and logic in the composite Diagram 10 below:

⁴¹ [What’s steward-ownership?—Purpose \(purpose-economy.org\).](https://purpose-economy.org/)

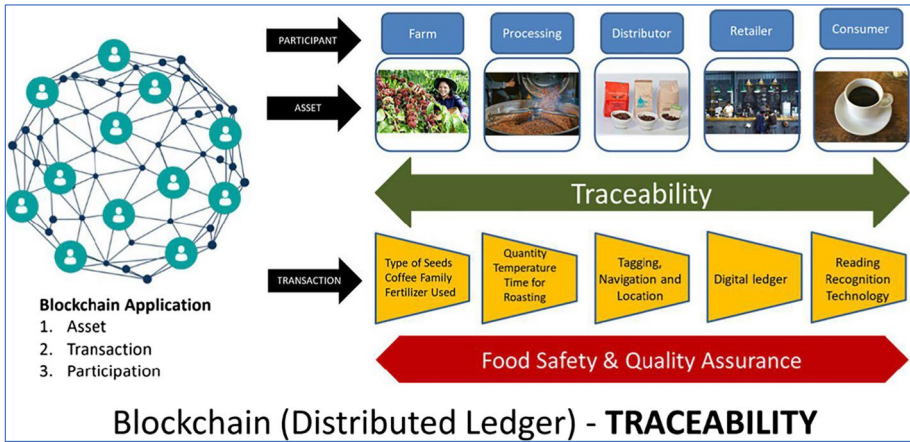
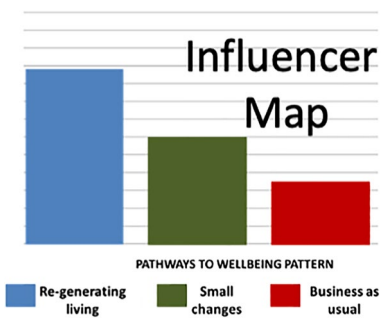


Diagram 8 Traceability. could be addressed as follows according to Wirawan who draws on the following sources (Some data are from <https://www.citypng.com/photo/10896/blockchain-technology-crypto-png>; <https://bibitbunga.com/perbedaan-kopi-arabika-dan-robusta/>; <https://www.businessinsider.com/acrylamide-in-coffee-does-it-causecancer-2018-3>; <https://www.joyridecoffee.com/blog/uncategorized/the-year-of-sulawesi-renaissance-in-indonesian-coffee>; <https://www.cekindo.com/blog/smallbusiness-ideas-vietnam-coffee-shop>)

New Steps

A new form of praxis is needed to support earning, learning and growing a future. Our axiological approach strives to resource 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:



Diagrams 10 and 11 are on stewardship, management of the commons and scaling up ways to manage the relationships across multiple species and find a way to balance individual and collective needs.



Diagram 9 Wirawan draws on several sources: Diagram 9 draws on the following: Journey of Coffee—Blockchain Supply Chain (Some data are from https://www.youtube.com/watch?v=YO9rA_TygBk&t=4s&ab_channel=AbhishekSingh; <https://youtu.be/uV3oTLBG180?t=55>)

Rudolf: The pathways to wellbeing architecture is detailed in the following diagrams (see links to zoom an slides⁴²) for technical details. The gathered data will be used to generate a classification pattern, which in turn produces the Influencer Map, which is comprises of three measurements (Business as Usual, Small Changes and Re-generating Living) as bar charts. Using this Influencer Map, a policymaker can design policies to influence the TBL. (see McIntyre and Wirawan 2021 in press in ‘From Polarisation to Multispecies Relationships’).

The behaviour process can be used to continuously monitor and maintain the ecovillage balance. The above map is generated from the collected stories and chat data. Since ML has the capability of learning from a given data and making a decision based on the learned data, it can also be used to guide the individual user in a village to achieve their own goal independently from each other but still following the overall core policies assigned to the village. This feature will not be included in this research study but could be extended to assist the village people in Indonesia for future research. The following Diagram 12 shows the overall architecture of how it will be applied in the village context and how it can be scaled up:

The above diagram shows the iterative process in managing and monitoring the circular economy to address the SDGs. We use a mixed methods to enable the integration of qualitative and quantitative methods to support the research.”

Janet: “Thank you for sharing the design.⁴³ Now let us discuss how it will be applied in our community of practice.”

⁴² https://drive.google.com/file/d/1aDuQ-Yz9zhDibbCWwcbC__zrTGHqp9TU/view?usp=sharing
Please find below the links to the presentation:

https://drive.google.com/file/d/1IqtqBLMOybeNCEA_g-1Elb07RHH9TzM1/view?usp=sharing
https://drive.google.com/file/d/1E3K8Uvq6qm8WRq7c0571yFfId_GAHaMV/view?usp=sharing

⁴³ https://drive.google.com/file/d/1aDuQ-Yz9zhDibbCWwcbC__zrTGHqp9TU/view?usp=sharing

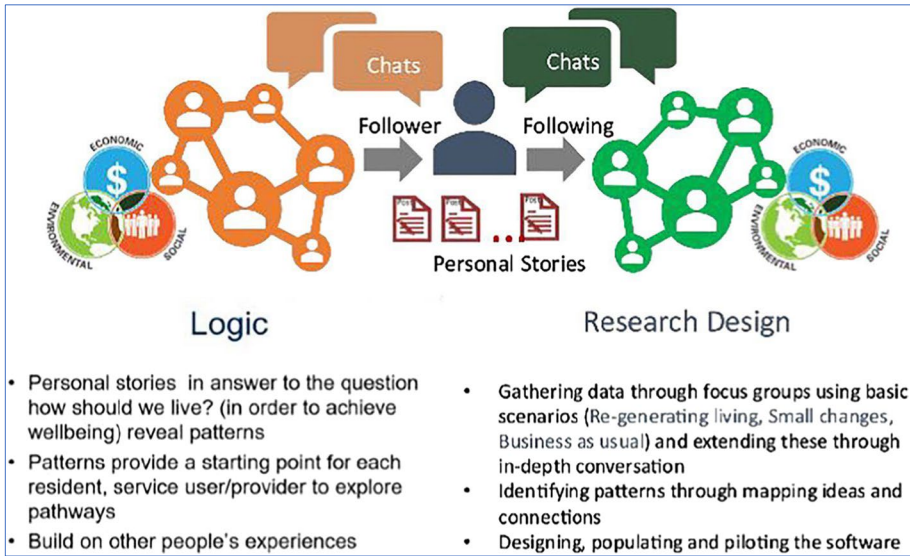


Diagram 10 The design journey. Sources: McIntyre-Mills and Wirawan (2021) From Polarisation to Multispecies Relationships. The above design is adapted from the following Pathways to Wellbeing Architecture and publications: 1. User-centric Design to address complex needs (McIntyre-Mills 2008) Published by Nova Science. New York. Appendix on software designed by De Vries. The book is an output of an Australian Linkage Grant. 2. Identity, Democracy and Sustainability (McIntyre-Mills and De Vries 2011) 0.3. The transformation from Wall Street to Wellbeing: Joining Up the Dots Through Participatory Democracy and Governance to Mitigate the Causes and Adapt to the Effects of Climate Change (McIntyre-Mills et al. 2014). Created by Rudolf Wirawan

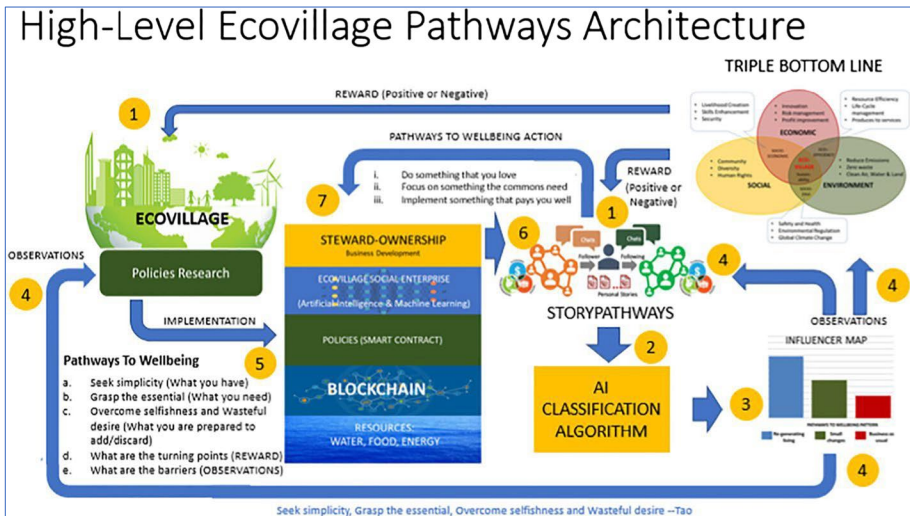


Diagram 11 The conceptual design draws on and integrates several sources including Elkington's (1997) Triple Bottom Line, Pathways to Wellbeing which builds on the work of Stiglitz et al. 2010 (see McIntyre-Mills et al. 2014) and suggests a way to enable mapping and tracking pathways as follows: (Some data are from <https://www.retreadingbusiness.com/latestnews/posts/2019/july/sustainability-is-not-retreading/>)

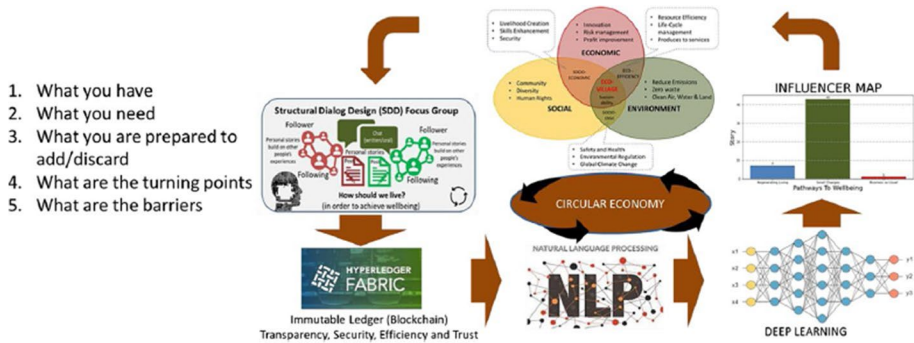


Diagram 12 (see McIntyre and Wirawan 2021 in ‘From Polarisation to Multispecies Relationships’, Springer)

Core Themes

Janet: “ We can sum up as follows:

- Human beings need to protect biodiversity and this involves co-creating shared goals to protect food, energy and water security. Even though demographic variables make a difference to the way we see the world we all share the need for nourishing food, clean water and renewable energy.
- Data collected in terms of haves, needs, what people are willing to add or discard, turning points for the better and worse, and barriers then analysed in terms of social, economic and environmental categories, which in turn are used to create
- Scenarios are then used to prompt people to think further in terms of haves, needs, turning points for the better and worse and barriers.
- Then data can be analysed in terms of SPSS and Qualtrics, and then you are going to use AI program.”

Rudolf: “Yes, agreed, so this is The Ecovillage Pathways Design, which draws on the three scenarios and explores the stories to classify thinking and action in terms of:

Re-generative Living The concern for environmental damage is increasing, and we are all trying to do our part. The world is changing, and it will never be the same again. It is time to take a stand and think about what we can do now to ensure that our children’s future will be better than ours. Some people have already started a way of living that is sustainable. They are trying their best not to generate waste, they buy things that are a low impact on the environment, and they care about what happens in the world around them.

Small Changes If we want to make a difference, we need to do something. We can’t just sit back and hope that the issue will be resolved by itself. We should start by changing our daily habits such as using less paper, recycling more, driving less, etc. We should also start thinking about more drastic changes like not eating meat, reducing our electricity usage, etc.

Business as usual Businesses and industries are not concerned about the environmental damage they cause. The only goal is to make money and grow, no matter the cost.

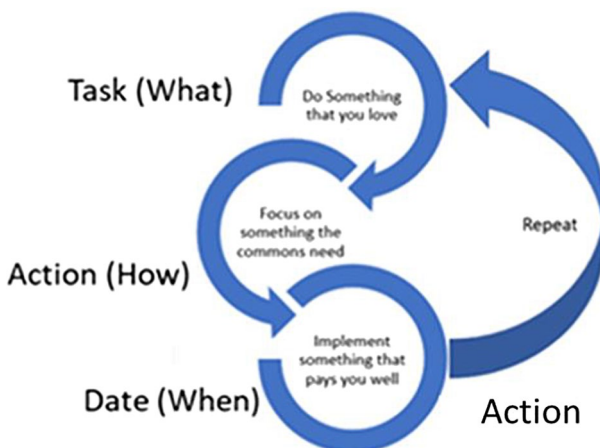
However, how we produce goods and services significantly impacts the environment. For example, as we have increased our production of plastics, it has led to an increase in plastic pollution in the environment.

As a result of the AI classification is the Influencer Map. This map is generated by evaluating the whole stories in the database associated with a village. As a result, it will reflect the status of the TBL of the village. Since this map is generated dynamically, based on the stories found in the village's database, it can be used as a barometer for the status of the TBL for the village, therefore it can be used as a guide in making policies changes in line with the circular economy as depicted below.

As shown in the above diagram, the Circular Economy is an economic system where there is no waste produced. It is a sustainable model where nothing is thrown away or wasted. The circular economy ensures that everything we buy can be used again, repaired, recycled, or composted at the end of its life. Due to the changes in the policies in the village, it will affect the TBL of the village. In turn, the people will express their feeling regarding the social life, the economy, and the environment in stories. The following diagram depicts the overall design for the Ecovillage Pathways. It is divided into two parts. The first part is the indicators of wellbeing, which shows the AI classification of unstructured data (story) into structured data (variables). Finally, it produces an influencer map (top right corner, steps 6–12). This is shown in Diagram 13 below”:

In supporting the community, a team leader can assign one or more eco-buddies (3) to assist the community in a village. Usually, the eco-buddy will first communicate with the community leader (4), which will involve the whole community in the village (5). In line with the Pathways to Wellbeing⁴⁴ process, it will start with the following questions to be addressed by the villages: What do you have?, What do you need?, What are you prepared to add/discard?, What are the turning points?, What are the barriers?

Guided by the above questions, the villagers can start writing stories reflecting on their own life in the village. Using the existing resources available to the villages, the eco-buddy will assist the villages in achieving their goal by first questioning the What, then the How, and finally the When, as depicted in the following resource activity diagram:



⁴⁴ <https://link.springer.com/book/10.1007/978-3-319-58014-2?noAccess=true>

Task (what): Do something that you love, Action (How): Focus on something the commons need, Date (When):

Implement something that pays you well, Repeats: Go to Step 1.

In the above diagram, there are two resource activities: supervised and the other is unsupervised. To familiarise with the resource activity, the beginner in the community will primarily be guided by the eco-buddy; hence the term supervised. However, the community can also do it by themselves if they feel comfortable doing it by themselves, hence the term unsupervised.

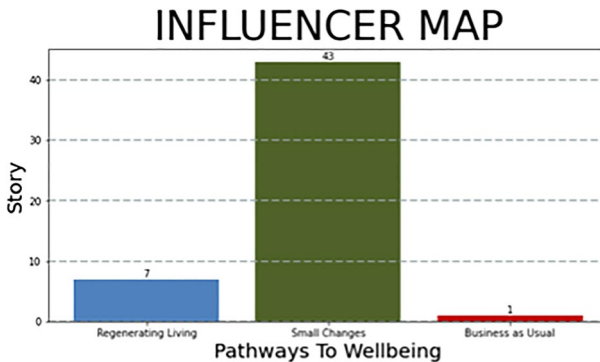
Since the process will be done iteratively and, in each iteration, it will change the Influencer Map and affect the TBL (12). Considering the circular economy in each iteration will affect one or more of the seventeen (17) goals defined by the United Nations Sustainability Goals.

Janet: “I am glad that the new prototype based on testing and 51 stories from our engagement with members of our community of practice is in progress and we will discuss how the coding by social scientists and members of the community of practice compares with the way the AI process has grouped the stories. We can then learn from the process. During our meeting on Friday 6th⁴⁵ there was some initial confusion as to what the following graph meant.”

Rudolf: “This is the graph based on responses to the 5 questions posed so far in South Africa. The key factors are identified and used as a basis for classifying the stories that are entered as depicted in the following diagram (Diagram 14).

For the story classification, we are using the following criteria:

1. Regenerative Living



⁴⁵ The protection of forests and organic agriculture go hand in hand and to that end in South Africa we have registered with PGSA, an organic farmer’s organisation to help us learn more about organic farming methods and perhaps to achieve certification for some of the farmers. The community of practice is supported by a network based on sharing knowledge and supporting local communities. Our hope is that the learnings will be scaled up through an eco-village website and associated pathways to wellbeing software to map transformation from ‘business as usual’ and to help people to think through the implications of their decisions so that they take steps towards supporting wellbeing stocks (Stiglitz et al. 2010) and regenerative living (Wahl 2016) so that they care for multiple species. In Indonesia the ‘One village, one product’ (OVAP, Morihiko Hiramatsu—Governor of Oita prefecture, 1979; Yogyakarta, 2014) was applied by President Jokowi in 2008–2009 has also been inspirational. It is hoped that we will be continue to work successfully to support and scale up the PGSA mission on organic farming as well as justice for farm (and other) animals and to operate in accordance with the principles set out in the ecocide law (Higgins et al. 2013) which stresses that peace depends on supporting a liveable habitat for all species to live undisturbed lives. It is admirable that many of these principles are already in practice in both of these communities. So far we have applied the first prototype on complex needs funded by an ARC and several small grants.

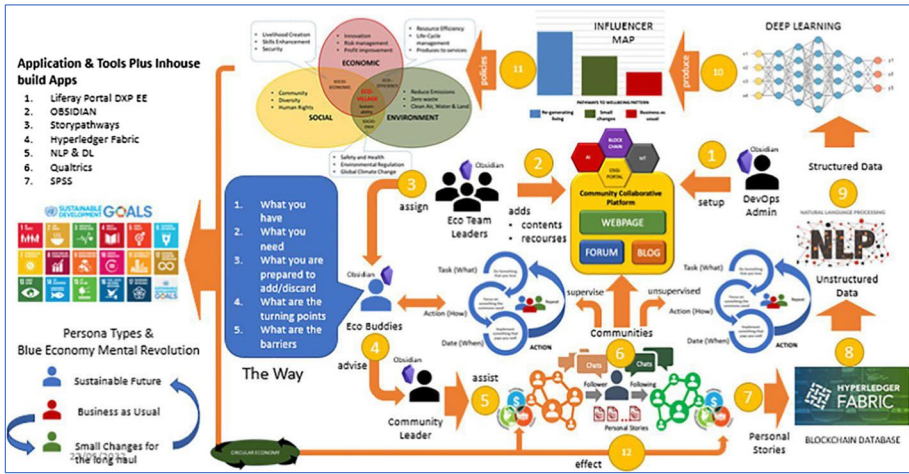


Diagram 13 Mapping to influence decisions. Source : Conceptual map compiled by Wirawan (2022). Some data are from <https://www.hyperledger.org/blog/2021/01/11/blockchain-technology-for-healthcare-data-management>; <https://venturebeat.com/ai/nlp-parses-text-data-to-drive-value-in-the-enterprise/>; <https://towar-dsdatascience.com/meta-learning-learning-to-learn-a0365a6a44f0>; <https://www.un.org/development/desa/disabilities/about-us/sustainable-development-goals-sdgs-and-disability.html>

2. Small Changes
3. Business as usual

Based on the stories entered by the community in South Africa, we received the following results:

- Regenerative Living: 7
- Small Changes: 43
- Business as Usual: 1

As depicted in the above graph, most of the participants are taking small steps toward regenerative living, and only one participant said they supported business as usual.

The above Influencer Map from South Africa can be interpreted as follow:

- The influencer map result indicates that the village is moving in the right direction.
- Further encouragement will help to increase the regenerative living activities

Using the above Influencer Map, the authority can further encourage the villages to move from Small Changes to Regenerating Living faster by encouraging the villages to start a co-op, grow bamboo, eco-tourist, etc. in line with the circular economy.

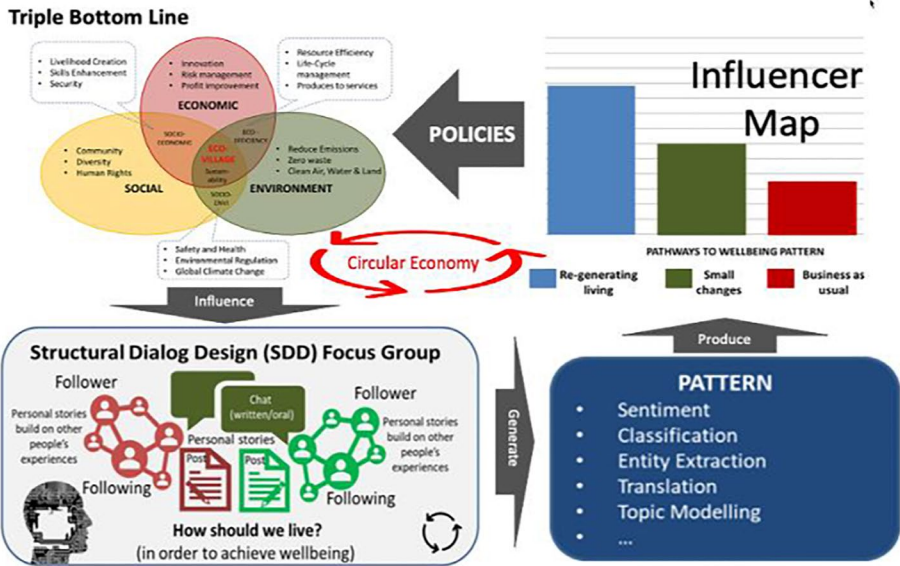


Diagram 14 Diagram compiled by Wirawan (2022)

Persona Types & Blue Economy Mental Revolution



The Influencer Map also shows the attitude of the villages as depicted in the diagram on the left. The Ecovillage Pathways process could guide villages to move from Business as Usual to Small Changes and finally to Regenerative Living.

Therefore, the Ecovillage Pathways is not just measuring the Triple Bottom Line of a village, it could also guide the villages to change their attitude in making their village sustainable.

In doing so, we are hoping that other villages will follow and learn from the sustainable village in their own neighbourhood, and with the time, the province where the villages exist will be able to satisfy the seventeen goals of the UNSDGs.

Norma: We need to know more about the coding process.

Rudolf: The classification is based on recognition of key characteristics which I will detail below:

Storypathways Classification Process

Rudolf: “To understand the role of the classification in the Ecovillage Pathways program, it is easier to compare it with the grading process of the green bean coffee into three different grading (S, M, L) using filter screens, therefore, there will be no modification of the bean at all. Suppose each bean represents one story, and the filter screens represent the classification algorithm. In that case, each type of screen (S, M, L) represents the classifications of Regenerating Living, Small Changes and Business as Usual and as the case for the coffee beans, there will be no manipulation of the story at all. As a result, 51 kg of coffee beans produces 7 kg of small size, 43 kg of medium size, and 1 kg of large size. Correspondingly, for the Storypathways, from 51 stories, it produces seven (7) “regenerating Living”, forty-three (43) “small changes”, and one (1) “business as usual” stories. This is detailed in Diagram 15.

The story classification process used in the Ecovillage Pathways is the Natural Language Processing (NLP) and Deep Learning (DL), which is part of the Artificial Intelligence (AI). NLP is used to convert the story from an unstructured into a structure data. In the diagram on the left, shows the flow of the classification process, starting with stories in the Storypathways processed by the NLP to convert the unstructured data into structure data. The structured data is feed into DL to be classified into three classifications to produce the Influencer Map.

In the coding process for Ecovillage Pathways, we use the zero-shot learning (ZSL⁴⁶) classification. A ZSL classification is a type of classification task that has not been previously used to build the model. In other words, there are no training data for this particular classification task. The main goal of a zero-shot classifier is to classify images or text that it has never seen before.

In this case, the model needs to be capable of generalizing its knowledge to new tasks without having any prior knowledge about them. Some may say that it is impossible for a machine to classify an image that it has never seen before, but research shows otherwise. The key idea behind this type of classification is the use of transfer learning, where knowledge from one set of tasks can be transferred and applied to another set of tasks.⁴⁷

Finally, Diagram 16 shows the overall high-level view of the Ecovillage Pathways process.

It starts with a very simple A->B->C process as follows: (A) Storypathways follows by (B) Story classification to produce the Influencer Map indicator (C). With the Influencer Map indicator, we can use it to balance the TBL and the loop continues endlessly and the villages need only do two things:

1. Write stories
2. Response to survey

⁴⁶ <https://www.kdnuggets.com/2021/04/zero-shot-learning.html>

⁴⁷ <https://arxiv.org/pdf/2005.14165.pdf>

IT knowledge is not required, other than word processing skills using the mobile phone or laptop to enter the data. It is very important to ensure that the energy applied to the Ecovillage Pathway is continuing, as the **eco**-energy has always to balance the **ego**-energy as depicted below.

Janet: “Beans need to be classified according to size, shape, taste. I think machine learning would make mistakes with classification some of the time. This is even more difficult to achieve when we are dealing with perceptions and emotions, because this is what the stories are providing – an indicator of how people perceive the world. But I believe that AI needs to be owned, designed and used by the marginalised, so that *they can be the designers*, rather than the objects of other people’s designs. So in principle I think it is worth working on this to try to ensure that people are not left behind because they are regarded as the objects of someone else’s research. Artificial intelligence can be seen as a black box from which they are permanently excluded. It can also be used as a way of wielding algorithms in ways that benefit the powerful, rather than empowering the powerless.

Janet: “Designs are potentially good or bad, depending on the values that shape them. So if our research is about empowering the marginalised, we need to see how we can carry the project forward in ways that support social and environmental well-being and justice. This requires avoiding so-called ‘green washing’ by using ‘green terminology’ as a cloak for ‘business as usual’ based on profit, rather than protecting or re-generating the social and environmental fabric. Who owns the platform is another important issue. We are trying to ensure that it is owned by the University of Adelaide to ensure that the platform is freely available to protect the commons.

I need to emphasise that the data analysis can only occur when we have completed *the data collection* as we only have stories from 16 participants so far of whom 14 are female and 2 are male. The stories gathered so far are from these participants and from members of the community of practice who have been testing the process, but nevertheless it does provide a good starting point for demonstrating that the prototype is indeed workable. So to sum up, we are in the process of gathering more focus group data. The 51 stories that Rudolf is referring to are mostly based on our testing process and do not refer to 51 people. This exercise is to demonstrate that the engagement platform is working. When we have completed the data collection the discussion needs to begin with looking carefully at the way the data was entered into the Qualtrics and SPSS program. I am looking forward to taking the project to the next step, namely exploring the graphs with the members of our community of practice to assess how the logic for coding and the extent to which AI is mapping the perceptions accurately. So far what we have achieved is very significant in a number of ways. The community of practice actively engaged in empowering one another and the community through multiple means: face to face focus groups and ongoing participatory action research by Mphathe, Pat, Enid and the members of the community. Our supportive emails, Zooms and collaborative joint publications and regular WhatsApp and are a testimony to self-organisation as well as the insightful distributed leadership based on a deep wisdom of the importance of living systems and a demonstration of what can be achieved through setting aside personal egos. This is a very exciting start to scaling up the engagement process with a community led by the

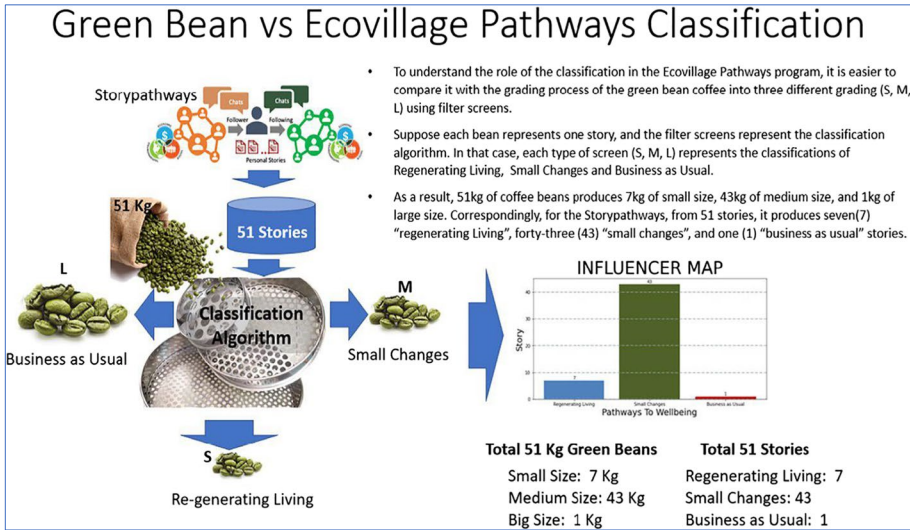


Diagram 15 Source: Diagram compiled by Wirawan (2022). Some data are from <https://id.aliexpress.com/i/4000998290721.html?gatewayAdapt=glo2idn>; <https://www.nicepng.com/ourpic/u2q8y3q8t4o0r5q8-green-coffee-beans-green-bean-coffee-png/>; https://favpng.com/png_view/green-coffee-bean-green-coffee-extract-energy-drink-coffee-bean-png/Rj3NMuam

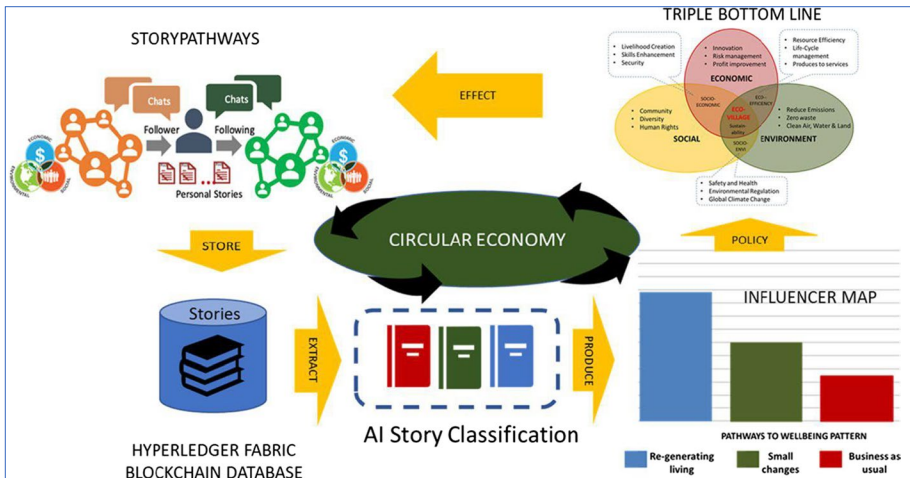


Diagram 16 Some data are from https://commons.wikimedia.org/wiki/File:OOjs_UI_icon_journal-ltr-progressive.svg

Makhadzi (women leaders) with a sense of sacred duty to protect Mupo and I understand that our next step will also involve testing its viability in Indonesia. Mphathe: “Now the Makhadzis are more important than ever because our sacred sites, the Phiphidi waterfall and the Thathe forest, are being threatened and destroyed. ... We are trying to fight them but it is difficult.... I am working with the Makhadzis,

Chiefs, and the VhaVenda people who form a community organisation called Dzomo la Mupo.⁴⁸

Mphathe continues:

“This means ‘Voices from the Earth’, and the community are just that. They are the voices of Nature, of the land, of the people, of our culture and they are standing up to the bullies who are trying to take this away from them..... There are 24 rivers flowing out of the Thathe Holy Forest. If you cut it down, what then? That’s the end of the farming system in Venda. Rituals aren’t empty things. They’re the Earth wisdom of hundreds of generations of wise people, especially Makhadzis.”

Akwasi: “I think broadly this is about right as the majority of people in the community are at that stage in terms of learning about how to engage in a circular economy and what that means for setting up regenerative projects in a creative manner that is sustainable. This involves learning new forms of enterprise. We should endeavour to support computing to advance the living conditions of our people as much as possible while we simultaneously pursue social, economic and environmental sustainability. The conversation is quite interesting and relevant to the our project.”

Patricia Lethole: “We also need to do more work on empowering women. The empowerment of women is important for their emancipation and will increase their knowledge base in making informed decision without fear when the project develop. The engagement during the focus group discussion showed that the women still feel as subordinates to the men in the community. They indicated that “Lekgotla” committee in the village, which is comprised by mainly men, takes decision for women without their input. This was an eye opener to us and young women in the project, that men are still in charge in the villages. The elderly women in the group, voiced their concerns about how oppressed they feel which requires more training and engagement with the group. It is also suggested that we find out about their qualification so that what when we conduct training, we should be accommodative, concrete and work from their frame of reference.”

Rudolf: “Let us remember the following African Proverb⁴⁹: If you educate a man you educate an individual, but if you educate a woman you educate a family (nation).” – Fanti (Ghana) Proverb.Currently I am working on community education to enable computer literacy which could also help this project.⁵⁰”

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⁴⁸ <http://earthlorefoundation.org/justice/legal-action/>

⁴⁹ This well-known saying is attributed to the Ghanaian scholar Dr. James Emmanuel Kwegyir-Aggrey (1875–1927),

⁵⁰ https://www.wirasoffoundation.org/en_GB/web/elibrary/programming

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Authors and Affiliations

Rudolf Wirawan^{1,2,3}  · Janet J. McIntyre-Mills^{4,5}  · Mphatheleni Makaulule^{6,7} · Patricia Vhahangwele Lethole⁴ · Enid Pitsoane⁴ · Akwasi Arko-Achemfuor⁸ · Norma R. A. Romm⁸ 

✉ Janet J. McIntyre-Mills
janet.mcintyre@adelaide.edu.au

Rudolf Wirawan
Rudolf.Wirawan@adelaide.edu.au

Mphatheleni Makaulule
mupofood@gmail.com

Patricia Vhahangwele Lethole
lethovp@unisa.ac.za

Enid Pitsoane
tllhabem@unisa.ac.za

Akwasi Arko-Achemfuor
aachea@unisa.ac.za

Norma R. A. Romm
norma.romm@gmail.com

¹ Darmstadt, Germany

² NSW, Redfern, Australia

³ Adelaide Business School, University of Adelaide, Adelaide, SA, Australia

⁴ Pretoria, South Africa

⁵ Adelaide University, Adelaide, Australia

⁶ University of Venda, Thohoyandou, South Africa

⁷ Dzomo la Mupo, Vuwani, Limpopo Province 0952, South Africa

⁸ College of Education, University of South Africa, Pretoria, South Africa