Sustainable Development:
LOOKING AT A UNIVERSITY’S RESPONSE TO THE NEEDS OF SMALL-SCALE FARMERS

"I hereby confirm that the assignment is the product of my own work and research and has been written by me and further that all sources used therein have been acknowledged."
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Part A: Literature Review: Personal Approach to Sustainability

I. Introduction
If an examination of the body of literature that explores the various conceptions of sustainability and sustainable development tells us anything, it is that the very concepts of both are highly subjective, deeply contested, and maybe even fatally flawed. Ironically, as the bodies of scientific research into our global ecological and human predicament accumulate, alongside numerous explorations in literature of the moral, ethical, political, and social dimensions of our predicament, the actual state of our planet continues to decline, to the extent that, to name but a few examples, 60% of the ecosystems are degraded\(^1\) and the poorest 20% of the global population account for only 1.3% of consumption (Swilling and Annecke 2012). We can see, in examining the accumulating bodies of science, for example, that our climate is destabilizing, and our natural resources are being depleted. We can see, in other words, that we are headed for disaster; yet we appear to be woefully unable to act constructively on this information.

Perhaps, then, it is no coincidence that the body of literature, thought and policymaking which has evolved around sustainability and sustainable development over the past 25 years, particularly since the release of the seminal *Our Common Future* report of the Brundtland Commission in 1987, holds within itself numerous unresolved conflicts, contradictions and tensions. Perhaps the most thorny and enduring of these tensions is the one which *Our Common Future* originally sought to resolve: the conflict between ecology—the need to limit human consumption and pollution so that the natural environment can sustain itself—and equity—the need for the world's billions of people living in poverty to access resources to improve their (material) quality of life.

*What* must be sustained? And how – asks Gilberto Gallopin, pinpointing the intrinsically subjective nature of sustainability (Gallopin 2003). How that question is answered will inevitably depend on the worldview and value systems of the person who gives the answer (Hattingh 2001; Gallopin 2003; Swilling and Annecke 2012; Sneddon 2006; Blewitt 2008). So what kind of a platform, then, do these concepts of sustainability and sustainable development offer us for forming policies and taking concrete actions in the real world? If there is a general lack of agreement on what sustainability or sustainable development is, and how to realise it, how can we embrace them as concepts or frameworks for moving ourselves closer towards living in a sustainable world—whatever that may mean?

\(^1\) According to the United Nations Millennium Eco-system Assessment, cited in (Swilling and Annecke 2012)
This paper will argue that complexity theory and systems thinking, supported by aspects of deep ecology, an equity perspective (found, for example, in Amartya Sen’s “Development as Freedom” ethos), ecological modernisation (a healthy dose of realpolitik) – offers the most promising way of moving past the current sustainability quagmires introduced above. Part A of this paper will examine and critique these different perspectives of sustainability, and argue that these approaches might potentially offer new tools to simultaneously navigate the ideological complexities of sustainability; address the deep structural nature of global problems that sustainability seeks to address; and at the same time engage in various ways both locally and globally; and ethically, intellectually, and pragmatically, in meaningfully advancing sustainable development as an ethos and a practice in the real world.

Part B of this paper will then examine how the ideas explored in Part A apply to the work of an organisation called the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), which is a network based in Uganda that works to strengthen the responsiveness of African universities to the needs of small-scale farmers, particularly through the support of advanced training and research programmes.

Both sections of this paper will also attempt to build a case for the need for reconciling the underlying tension held within sustainability, between those whose view of sustainable development places human needs above ecological considerations, and those who, contrastingly, prioritise the environment above human development. Wolfgang Sachs casts this as a “crisis of nature” pitted against a “crisis of justice” – “Whoever demands more agricultural land, energy, housing, services or, in general, more purchasing power for the poor, finds himself in conflict with those who would like to protect the soils, animals, forests, human health or the atmosphere” (Sachs1999: 28). Particularly as this tension relates to the lives of the rural poor, who occupy a marginalised position on the fringes of the power structures of globalisation, I will argue that this is in many ways a false tension.

There is a polarised tension between those arguing from a “natural limits of growth” perspective, and those who maintain that the problem of sustainable development can be addressed through technocratic, market-based “fixes.” (Mebratu 1998: 503). Parallel tensions perhaps run in the contrast between deep ecology, which seeks to reshape human value systems to revere nature, and shallow ecology, which focuses on addressing environmental symptoms, not cures (Blewitt 2008; Mebratu 1998).
While most of the other worldviews of sustainability tend to value one over the other, the frame of complexity and systems thinking, which takes for granted a multiplicity of viewpoints and seeks, at least to a point, not to elevate any particular value or viewpoint as the objective truth, might begin to offer us a framework for trying to reconcile the two perspectives.

II. Overlapping Strands and Streams of Thought
As has been suggested, perhaps an overarching reason for this multiplicity of viewpoints concerning sustainability and sustainable development is that how one defines both of these concepts depends heavily on one’s own values. J. Blewett suggests understanding sustainability and sustainable development as a “dialogue of values,” the phrase borrowed from Blake Ratner, which is a useful starting point, in that it reflects an attitude of openness to the variety of discourses, (Blewitt 2008: 27), while other authors like Sachs and Hattingh rather tend towards highlighting the problems raised by a diversity of views.

Yet these problems must also be grappled with. On the one hand, Our Common Future has served as an extraordinary foundation for building dialogues around sustainability and sustainable development that encompass the views of many actors who rarely gather around the same table, including eco-feminists, bureaucrats, political power-brokers, and captains of industry (Sneddon 2006; Swilling and Annecke 2012). Designed more to “maximize consensus rather than clarity,” according to Wolfgang Sachs, the document strove to gather the adherents of the two divergent poles of environment vs. development under a common umbrella (Sachs: 28).

As a result, the dialogues around sustainability carry a wide range of political, economic, spiritual and ethical values and ideologies, ranging from the deeply personal reflections on the interconnectedness of ecology and democracy by the Nobel Laureate Prof. Wangari Mathai, to the rational, capitalist-driven ethos of ecological modernization (Korhonen 2008). They are also reflected in how we define our relationship with nature—for example, in whether we see humanity as fundamentally a part of nature, or as somehow distinct from it (Harding 2006).

Yet at the same time, as consciousness of the sheer scale of the global crisis grows, and scientific evidence of it mounts, for example in the seven seminal and multilateral documents addressing such key sustainability issues as climate change, biodiversity and food insecurity discussed by Swilling and Annecke, our responses and coping mechanisms are looking woefully inadequate (Mebratu 1998). In other words, there has been a groundbreaking sort of progress on the one hand in response to the challenges of sustainability; yet stagnation and numbing complacency on the other, as
discourses around sustainability fall prey to vested interests, lack of political will, and the unquestioned ideologies of the powerful (Mebratu 1998; Sachs 1999; Sneddon 2006; Hattingh 2001).

In some cases, for example in business and even arguably in South Africa’s Constitution and environmental policies, Johann Hattingh argues that the sustainability discourse has been watered down, twisted in order to serve vested interests in perpetuating unsustainable practices (Hattingh 2001). That anyone can lay claim to their own definition of sustainability keeps a door open for greenwashing, and at the same time raises the dilemma that in the real world, just as it is the proverbial winning side that writes the history books, it is often the powerful whose definitions of sustainability stick (Hattingh 2001; Sachs 1999; Swilling and Annecke 2012; Sneddon 2006).

III. “Natural Limits of Growth” as an Ethical Dilemma
Ethically, there is much at stake in how sustainability and sustainable development are defined. The concept of “natural limits of growth” stemmed from Malthus and his view that population increases would outstrip the availability and productivity of the land, and has since become embedded within sustainability thinking (Mebratu: 499). If one accepts that the world’s resources are finite, and that there is a ceiling to the level of human exploitation that the planetary life support system will sustain, then the ethical question must follow: who has a right to use these resources, and how should the various rights and needs of those competing for resources be prioritised?

Deeply embedded within the discourse of sustainable development are the ideas of justice and equity not only amongst the current global population, but also from one generation to the next (Gallopin 2003; Hattingh 2001).

If we accept that the aims of sustainability and sustainable development should be to support greater inter- and intra-generational justice; greater equity for the poor; enhanced protection of the natural resources and life; and stronger protection of the natural systems and processes that enable life—then it would seem that implicit in this is an acceptance that “structural adjustments” will have to be made, meaning less consumption for the rich and the poor alike (Hattingh 2001).

According to Hattingh: “the goal of human survival will in certain circumstances clash with considerations of both quality of life and integrity of nature” (Hattingh:) Likewise, the attainment of any one goal of sustainability mentioned above may negate the realisation of another: inter-generational justice now may forestall intra-generational justice in the future, and greater
protections of nature for its own sake might undermine human quality of life, or perhaps even survival (Hattingh).

As the reports discussed by Swilling and Annecke, and referred to earlier in this paper, gather evidence that we are indeed bumping up against the biophysical constraints on our growth—evidence suggesting, for example, that nearly a quarter of land used for agriculture is degraded, and that we are reaching a point of diminishing returns as the oil, minerals and other non-renewable resources become both costlier to extract, and lower in quality (Swilling and Annecke 2012: 43, 45)—we are confronted with real constraints on growth that will make it not just ecologically destructive for the global poor and emerging middle class to follow the same dirty path of growth as the rich world, but practically impossible.

It is not hard to sympathise with the developing world perspective that poorer countries should be just as entitled as those already industrialised to follow the same path of development—in short, that the developing world should not have to pay for the “sins” of the developed world by foregoing development for the sake of the environment. As Sachs delineates in detail, it tends to be forgotten that the rich world amassed its wealth over 500 years of extracting labour and raw materials (and thereby considerable wealth) from the rest of the world, and now represents itself as the “stronghold of excellence,” and the global South as the “stronghold of incompetence” (Sachs 1999: 35).

Yet in reality, Northern practices of extracting resources from and exporting pollution and waste to the developing world continue—the latter, for instance, in the Clean Development Mechanism of the Kyoto Protocol, as will be discussed further in Section B.

IV. Underpinnings of Sustainability

Mebratu, meanwhile, sees a broader sweep of history and asserts that “ecological factors” have been central drivers of all the processes of societal transformation, rise and collapse, from ancient history to modern times, including the agricultural as well as the industrial revolutions (Mebratu 1998: 517). Mebratu’s broad sweep of history (quoting Donella Meadows) as increasing population density put pressure on the hunter gatherer lifestyle, driving the agricultural revolution as a response, and triggering unforeseeable processes and cultural value shifts which led to human concepts of land ownership, wealth, trade and eventually patriarchy and divorce from nature, or the “subjugation of ‘nature’” (Mebratu 1998: 495)
While he, too, argues that most definitions of sustainability are fundamentally flawed due to the narrow, interest-driven ways in which the concept tends to be framed, he offers a framework for understanding the (in his view limited) contributions of each approach, which interestingly hinges on the notion that different groups approach sustainability from the different foundations, which are either technocratic, ideological or intellectual (Mebratu 1998: 504).

He groups the various conceptions of sustainability into three categories—institutional, ideological, and academic—which are useful for the purposes of this paper, for clarifying and delineating the theoretical or structural underpinnings of the different perspectives which will be examined shortly (Mebratu 1998: 504).

The institutional thrust, which includes the perspectives of political, non-governmental, and business interests alike (including, for example, the WCED), is concerned with the equitable provision of needs, and advances strong institutional leadership as a mechanism of delivery. The ideological viewpoint, in contrast, looks to shifting value systems as the locus for addressing sustainability (this could equally be patriarchy for the eco-feminists, or capitalism for the eco-socialists). The academic viewpoint, meanwhile, which includes deep ecology, environmental economics and social ecology, emerges from the frame of reference of academic disciplines, and therefore generally exhibits “conceptual shortcomings of one type or another that are related to their reductionist epistemological foundations and reflected in their solution frameworks” (Mebratu 1998: 512).

V. Deep Ecology
Deep Ecology rests on the idea of Gaia, the Earth, as a self-sustaining, self-regulating, self-organising living system to which all of life, including humanity, is inextricably linked. This viewpoint seems also to share a natural affinity for both holistic or systems science, which understands the world as a living natural system, and complexity thinking, which also sees a fundamental interrelatedness within systems (Harding 2006; Macy and Young-Brown 1998).

From the perspective of equity between the so-called developed and developing worlds, deep ecology is, I would argue, most useful because it turns away from the traditional Western drive to “master” the world, and replaces that with an ethos of living as part of a larger living system (Macy and Young-Brown 1998: 39). In science, for example:

(Life scientists) discovered that these wholes—be they cells, bodies, ecosystems, or even the
planet itself—are not just a heap of disjunct parts, but are dynamically organized and intricately balanced “systems,” interdependent in every movement, every function, every exchange of energy and information (Macy and Young-Brown 2998: 40).

While the deep ecology perspective, that we must realign our value systems, has decidedly Western roots, and came about as a response to the destructive consequences of the unchecked rationalism and reductionism of Western civilisation, its tenets arguably and ironically bring the Western mind more in sync with the value systems of other parts of the world which never embraced Western-style reductionism in the first place (Blewitt, Harding).

Yet deep ecology remains problematic from an equity perspective, in that it is frequently accused of sidestepping human development needs, and is susceptible to becoming a form of cultural imperialism, for instance as Western conservationists seek to apply their values in the developing world (Blewitt:2008). Blewitt, for instance, relates the view of Indian critic of deep ecology, Ramachandra Guha, who criticises a tendency of Western conservationists to overlook the environmental problems that affect the poor, such as soil erosion and lack of water (Blewitt 2008: 32). In Sachs's crisis of nature versus justice scenario, for instance, deep ecology favours nature and sidesteps justice (Sachs 1999:).

The astronaut’s view posited by Sachs, however, implies a changed relationship to the Earth, and a new way of thinking which sees the planet not as a resource to be harnessed for the economy, but as our life-support system in the barren vastness of space. Yet according to Sachs, this perspective does begin to seek a reconciliation with justice, as it accepts the necessity of coming to a new “balance of power” between the North and South in order to promote a global political environment in which the Earth’s systems can be regulated on a planetary rather than local scale (Sachs 1999: 37)

In conclusion, deep ecology offers a key value statement that affirms the intrinsic value of life and nature itself, quite apart from the reductionism and economics-driven practices of the “real world.” This life-affirming attitude is invaluable, yet it also poses the risk of being employed with arrogance, so must also be combined with an attitude of self-awareness and respect for human development needs.

VI. Social Equity
In critiquing “Social Equity” as an approach to sustainability and sustainable development, I am basically looking at the other (anthropocentric) side of the coin, and creating a category for looking
at the development needs of the global poor, from the more anthropocentric point of view. Social ecology, for example, takes a critical view of deep ecology. Anarchist writer Murray Bookchin, quoted in Blewitt, argues that ecological problems are rooted in the exploitative and hierarchical structures of society, i.e. corporate greed, and that the solution to poverty in the developing world lies in changing this model (Blewitt 2006: 34).

But the obvious question is how—particularly if we accept Sneddon’s position that the sustainability discourse has become stuck, due in part to the failures of multilateralism, as neoliberalist dogma has served on the one hand to weaken those multilateral structures such as the United Nations which would provide a natural platform for dialogue and action towards sustainability, and on the other to strengthen the position of the World Trade Organisation, which represents the “commodification” of the environment (Sneddon et al 2006: 256).

Globalisation, Sneddon argues, has “contributed to a global increase in economic inequality and environmental deterioration by concentrating power in the hands of those who benefit from unsustainable forms of growth and resource use (Woods, 1999; Borghesi and Vercelli, 2003)” (Sneddon et al 2006: 257).

The result is that a privileged few enjoy an excess of consumption, while the rest must make do with less, in a context of diminishing resources (Hayward, referenced in Swilling and Annecke 2012: 38). Swilling and Annecke argue that poverty is inextricably linked to inequality—a connection which troublingly gets obscured as institutions predominately cast poverty in quantitative terms, for example through the focus on the Millennium Development Goals of halving poverty by 2015, as do the “power relations that preserve the global structures of inequality that ensure the continuation of poverty” (Swilling and Annecke 2012: 38).

Examining World Bank data and reports, Swilling and Annecke point out that once the data is more thoroughly parsed, for example by removing China’s break-away growth from the equation, Sub-Saharan Africa emerges as the only part of the world to see a rise rather than a decline in the percentage of the population who are either “very poor” ($1/day) or “poor” ($2/day) between 1981 and 2001 (Swilling and Annecke 2012: 39). Over a roughly similar time period, the authors report that consumption in Africa fell by 20 percent, according to the 1998 Human Development Report of the United Nations Development Programme (Swilling and Annecke 2012: 39). The authors suggest a direct connection between rising poverty and declining consumption, which may also be linked directly to environmental factors, such as the finding of the International Assessment of Agricultural
Knowledge, Science and Technology for Development report suggesting that a staggering 2.6 billion people may be negatively impacted, for example by rising food prices, by the degradation of natural resources such as soil and water due to agriculture (Swilling and Annecke 2012: 43).

This evidence of interconnectedness presents a profound ethical and moral imperative to act, as it begins to paint a clear picture of human suffering caused by environmental degradation resulting from the actions of a privileged few. The imperative, as stated by Sneddon, is then essentially to rewrite the story of sustainability as an “empowering tale” – and to engage the power structures to push a robust version of sustainability onto the global stage, through civil society action if need be (Sneddon et al 2006: 260).

This can be achieved, Sneddon argues, through the embrace of pluralism and transdisciplinarity, particularly amongst academics from fields such as ecological economics and political ecology, who are developing the intellectual tools, for example finding ways of quantifying ecological values in economic terms, which will enable the “more cohesive and politically effective interpretations of” sustainable development (Sneddon et al 2006: 261).

Amartya Sen’s “development as freedom” ethos, with its emphasis on dignity, human rights and social justice above more materialist development indicators, offers a useful framework for beginning to approach the question of justice for the global poor. This is not to argue that material growth is suddenly unimportant—it is rather a way of expanding the development debate beyond the narrow confines of material wealth (Sneddon et al 2006: 262). This expansion creates the possibility of enriching the narrative of the global poor to the outside world, so that issues of sustainable development are also seen in terms of justice, rights and freedoms as fundamental human concerns to which anyone could relate.

What must be sustained, Gallopin argues, is “the process of improvement of the human condition (or better, of the socio-ecological system to which humans pertain)” (Gallopin 2003: 20). “While demographic growth and material economic growth must eventually stabilize, cultural, psychological and spiritual growth is not constrained by physical limits” (Gallopin 2003: 27).

Gallopin’s suggested way forward for developing countries: a phase of inclusive material economic growth followed by a transition to non-material economic growth, presents itself as a reasonable compromise which would enable more equitable development for poor countries, while limiting the harmful consequences of this development for the global environment. Yet the problems of how this would be realised in the face of existing global power structures, and the actual material limits to
this growth, remain unresolved.

VII. Ecological Modernization

Ecological Modernization is perhaps most useful in its realpolitick acknowledgment of the global power structures that be. As an ally and extension of capitalism, its resolution to use those structures in working towards greater environmental sustainability, for example through the triple bottom line, reflect a greater will on the part of some businesses at least to operate more sustainably, which I see as a positive thing on the whole, despite the possibility it opens up for legitimizing business as usual beneath a thin green veneer.

While the global financial crisis has ripped some large holes in the assumptions that underpin neoliberal capitalism as an ideology, capitalism is of course the way the vast majority of the world continues to do business, and as such it must be acknowledged and harnessed as far as possible as a driver of sustainability.

The Ecological Modernization position of putting a monetary value on natural resources, for example, begins to address the problem that the price of materials such as petroleum do not always reflect the ecological costs accrued in delivering the product to the end user. As Korhonen states: “The environmental difficulties firmly wedded into the globalization culture include the geographical separation of raw material extraction, production and end consumption” (Korhonen 2008: 1335).

From the perspective of developing countries, this is problematic because it reinforces their position as suppliers of raw materials (such as coffee in Uganda), which can undermine the vibrancy of local economies, while keeping farmers dependent on foreign markets where abundance of supply often drives down prices.

Ultimately, however, it seems that the greatest promise of Ecological Modernization for the developing world lies in the rise of new social entrepreneurship models, which are increasingly allowing the rural poor to access clean technologies such as solar lanterns, enabling some small-scale “leap-frogging” towards Gallopin’s conception of non-material economic growth, along with the social benefits of an improved quality of life, to occur. This will be discussed further in Section B.

VIII. Complexity Theory and Systems Thinking
In light of critiques that most definitions of sustainability are limited by a narrow and interest-driven perspective (Mebratu 1998), it would seem that the best way forward would be to integrate aspects of the various definitions of sustainability, such as those discussed above, into a new, more encompassing whole.

According to Gallopin, not only must the various dimensions of social, economic, ecological, political and cultural factors be integrated into the concept of sustainability, but also, simultaneously, the “constructive articulation of the top-down approaches to development with the bottom-up or grassroots initiatives;” the local and global relationships and interactions; as well as the need for “intra-generational as well as inter-generational equity” (Gallopin 2003: 5).

Complexity theory is the only frame of reference which seeks to consciously step outside of any particular ideological framework, rather than starting from a point of advocating for any particular position. This is not to argue that complexity theory somehow transcends ideology—indeed I would argue that it may be just as ideological as any other position—but rather that it makes room for the (doubtless uncomfortable) coexistence of many different perspectives. Complexity strives to walk the tensions of the various paradoxes and contradictions of complex life, rather than reducing them (Cilliers 2008).

This is what makes complexity a useful framework, firstly for reconciling the tension between ecocentric and anthropocentric views of sustainability. Beyond this tension, however, the deepest problems of our age are highly complex and structural. Such problems as climate change, food security, diminishing biodiversity, and peak oil all involve interactions between numerous factors on multiple levels. Their root causes and manifestations occur in many ways, at the local and global levels, for which an engagement from a more limited point of view is insufficient (Cilliers 2008).

This is perhaps one reason why it is so difficult to definitively quantify or characterise the “big issues” like climate change, or the current global economic crisis. These are not straightforward, linear processes. Climate change, for example, is the result of highly complex interactions, the results of which are highly variable and well nigh impossible to separate from overlapping trends that might be distinct from climate change. If the rainy season is drier than normal, is this due to climate change or natural seasonal variation—or perhaps a combination of both?

In a world structured to see processes as linear, and to draw straightforward conclusions that trace clear, direct linkages between cause and effect, the profound uncertainties of a process like climate
change lend ammunition to sceptics and deniers—a problem I have often observed in the media, as a journalist.

IX. Conclusion

The complexity mindset is already beginning to manifest in various ways, such as in the interdisciplinarity in the academic discourse on sustainability called for by Sneddon, and in the rise of holistic sciences described by Macy and Young-Brown. This perspective has helped us to see beyond a dualistic way of thinking (Mebratu).

Swilling and Annecke likewise describe a Second Copernican revolution, which resulted from our ability which evolved, garnered through science, to “see the planet as a vast living organism; as a complex system which we imperfectly understand in ways that are inseparable from our engagement with it as agents of change” (Swilling and Annecke 2012: 28).

Just as science has provided us with the tools to begin to understand the Earth and the natural world as complex and dynamic systems, Gallopin suggests that the only longterm option sustainability is to approach it as a “socio-ecological system” in which society and nature are seen as inextricably linked and interdependent. Within such a framework, we are not compelled to choose human needs or environmental preservation. The paradigm shift implies a new sense of the continuity and open-endedness of processes. We choose both, and then new political, moral, or cultural challenges present themselves, and we continue to engage.
Part B: Looking at a University’s Response to the Needs of Small-Scale Farmers

I. Introduction
Now I will shift gears, after the theoretical discussions of the previous section, to look at how complexity theory and systems thinking apply to the practical, real world case of an organisation working to strengthen the capacities of universities across Eastern and Southern Africa to respond to the needs of small-scale farmers.

The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) is an organisation which aims to strengthen the quality of agricultural research and training amongst 29 member universities from the Common Market for Eastern and Southern Africa region. This paper will particularly focus on two communities of small-scale farmers with which RUFORUM researchers engage.

The organisation occupies a unique niche not only within national and regional higher education systems, but also within the frameworks of regional and local agricultural research systems and governance structures. With its specific emphasis on agricultural research and training within higher education, RUFORUM also engages from a unique perspective with issues of post-conflict reconstruction, food insecurity, and poverty reduction, which pose some of the region’s most pressing development challenges.

RUFORUM also straddles the worlds of both the power-brokers of globalisation, such as the World Bank; and of small-scale African farmers, who, even though they form the backbone of most Sub-Saharan African economies, can count themselves among the most marginalised inhabitants of an ever-more globalised world.

In short, the organisation sits in the midst of multiple overlapping strands and spheres of interest, which span from the extremely local yet widely applicable concerns of individual farmers, to the players of the global development community.

My relationship with RUFORUM began in 2009, when I visited the organisation’s Secretariat based at Makerere University in Uganda as a journalist, and I have since then worked intermittently with the organisation, quite intensively over the past four months or so, in order to document the various aspects of its work.
In Section A of this paper, I argued for the need for an inclusive vision of sustainability and sustainable development which would transcend the limitations of narrow ideologies. I believe that concern is relevant to my argument here, because RUFORUM's practices will inevitably filter into development (sustainable and otherwise) practices on the ground, given that it is so heavily engaged with rural farmers who are quite pivotal to national development strategies across the region.

The organisation’s motivating drive is to act in ways that will improve food security and the lot of small farmers—and in working toward this aim, it has pursued avenues that many sustainable development practitioners might find objectionable—most notably, biotechnology. Nevertheless, the organisation professes to be working in whatever manner will best serve the interests of small farmers.

II. A Crisis in Higher Education, and a Crisis in Agriculture

The organisation was created more than a decade ago, as a response to two separate crises: one within African agriculture, and the other within African higher education. In a way, both crises can trace their roots to a post-colonial history of political calamity—in Uganda’s case, the brutal dictatorship of Idi Amin during the 1970s, which was followed by further decades of austerity measures and structural adjustment policies of the government and the World Bank—all of which drove universities like Makerere to the verge of bankruptcy and diminished their capacities to fulfil the core functions of a university, namely training, research and, perhaps more arguably, service to communities. (Lindow 2011).

Indeed, many scholars argue that universities have an important role to play in national and regional development, particularly as part of a “pact,” or triangular relationship that exists amongst the government, private and NGO sectors, and higher education, and basically ensures that all three sectors are in alignment, for example so that universities produce research and graduates with skills that are in line with the needs of the economy and society (Lindow 2011: 32).

This capacity for providing advanced training and research remains a huge gap within African higher education, and is one of many complex reasons why the continent perpetually struggles with professional skills shortages exacerbated by “brain drain,” and fails to contribute substantially both in terms of research and in global policy arenas. According to the Thomson Reuters Global Research Report: Africa (April 2010), for example, the entire African continent produced roughly the same number of research papers per year as the Netherlands (Lindow 2011: 2).
As a counterweight to the critique of Wolfgang Sachs and many others that the global power structures (and sources of competence, technical and otherwise) are heavily concentrated in the North, and that consequently African nations negotiate from a point of weakness with organisations such as the WTO where the agricultural trade and subsidy regimes are set, RUFORUM’s strategy over the past decade has been to devise ways of facilitating high-calibre postgraduate training to occur within African universities, so that the continent will begin to produce its own cadres of scientists equipped to contribute towards economic and social development (the relationship between ecology and development will be addressed shortly) (Ekwamu 2011: personal interview).

Adipala Ekwamu, a professor of plant pathology who trained at Ohio State University in the United States, and is now Executive Secretary of RUFORUM, has described a historical pattern in which African researchers obtained scholarships to do their doctoral training abroad, and very often would remain overseas, contributing their brain power elsewhere and leaving Africa bereft of scholars.

As a network comprised of different member universities, RUFORUM has facilitated the creation of new master’s and PhD programmes, focused on specific areas where the capacity to train already exists within the network of universities. For example, Makerere already had strength in plant breeding—which researchers argue that breeding disease-resistant varieties is a huge unmet need in a region where farmers regularly lose half their harvest. So a programme was established there, which is open to students from any of its member universities across the region, and has also trained plant breeders from South Sudan and Rwanda, both post-conflict nations where shortages of scientists are even more dire.

III. Ecology and Human Needs
The constant tension which runs through the sustainability discourse, discussed in Section A, between the “nature first” perspective of deep ecology, and the “people first” perspective of the social equity positions is something very real and tangible in a place called Kiboga, a rural district a couple of hours’ drive from Kampala, which I visited during my first trip to RUFORUM in 2009.

All of the manifold social, environmental and structural problems of small-scale agriculture are felt keenly here. The small farmers, and the governmental agricultural extension worker who served the community, a recent graduate of a RUFORUM-sponsored Master’s programme in plant breeding, described for me the effects of crop diseases, soil exhaustion, and changing weather patterns, possibly due to climate change.
We visited a small cooperative of about 40 female farmers, whose communal banana crop had been destroyed early that morning, when a freak cyclone suddenly ripped through the plantation. Surveying the damage with members of the group, we waded through slashed ribbons of banana leaves jumbled on the ground, and large unripe bunches of bananas that lay decapitated on the ground.

Some of the problems were also rooted in human activity. Market access was a problem, for example, as small farmers lacking their own transportation saw few options other than to sell their produce at cut-throat rates to middlemen, and remained trapped in a low-income cycle.

A scarcity of land was exacerbating tensions between the sedentary crop farmers in the area and local pastoralists whose animals needed grazing land, explained Simon Byabagambi, the extension officer. Pointing to a distant hillside that was covered in monoculture swathes of bananas and maize, he explained that the local forest cover was rapidly succumbing to slash-and-burn agriculture, a symptom of the added pressures on the land from a growing population, which was in turn exacerbating ongoing cycles of drought (Lindow 2009).

Nor is this community immune to the forces of the outside world. Small-scale farmers in another area of the country, for example, were evicted from their land in order to make way for a Dutch reforestation project around the perimeter of Mt. Elgon National Park, a project which harnessed funds through the Clean Development Mechanism of the Kyoto Protocol, as reported by Stephan Faris in *Fortune* (Faris 2007).

What these scenes illustrate to me is that when it comes to the poorest of the poor, whose livelihoods depend directly on the land and the natural environment, the aims of human development and environmental sustainability are not at all at odds—but in fact go hand in hand. The real challenge of sustainability, write Swilling and Annecke, is about “eradicating poverty, and doing this in a way that rebuilds the eco-systems and natural resources on which we depend for our collective survival” (Swilling and Annecke 2012: 46).

Indeed, this turned out to be what Simon Byabagambi was working towards. Working as a cooperative, for example, the women who had lost their banana crop have also been able to save money and pool their resources to invest in necessities to share, such as a cow to provide both milk and manure. On another small-holding we visited, farmer Milly Nakasaana described how she had
been able to increase both her yields and her profits by planting a variety of different crops, and using a variety of cropping and pest control techniques, from planting tobacco near her hot peppers in order to drive the pests away, to packing the ground with compost to retain soil moisture.

She had even recently surmounted a major hurdle facing small-scale farmers, and obtained a bank loan which enabled her to start her own business growing maize flour (Lindow 2009).

IV. Learning that Works Both Ways
Researchers and students from RUFORUM have also learned much from farmers. In another community called Bukedea, researchers have a nearly 20-year relationship with a community which back then had been just emerging from a devastating clash between rebel forces and the government, in which the local population had been herded into refugee camps. Led by a small group of women determined to work together in order to rebuild their community and re-establish farming and food security, the community worked with Ekwamu and other researchers who held experimental new varieties of cow peas and ground nuts.

V. Demographic Transitions
Now, almost 20 years later, Ekwamu’s colleagues in RUFORUM are re-engaging with the community, which has since evolved into a rapidly-growing network of 2,500 farmers from a much wider community, who are tightly organised into collective groups of 25 members each, and are now pursuing a panoply of strategies aimed at educating themselves, for example about agricultural research that emerges from the region, through radio listening groups, and also commercialising their products. Their first venture involves processing organic sunflower oil.

RUFORUM researchers now are eager to strengthen collaborations with this community as a potential site of transdisciplinary research, as well as learnings that may filter back to the universities and into the agriculture curricula of universities. For Ekwamu, the relationship provides a deep sense of fulfillment, because it essentially encapsulates RUFORUM’s mission of working to mutual benefit with small-scale farmers.

“There was strong leadership coming from the group. These were short-term projects, but the group pushed us to a higher level, and put in place the mechanisms for the uptake of new technologies, such as the new varieties of cowpeas. For them it was about survival,” he says (Ekwamu 2012: personal interview).
Now, the situation in Bukedea is very different, and in many ways far more complicated. Immediate survival needs are no longer an issue, and the group faces a number of questions, ranging from questions of leadership to economic strategy. With such a large group, there is strength in numbers to embark on new commercial ventures such as the sunflower oil; yet each step of the way poses new hurdles, and new barriers of entry into the market. Now the group is embroiled in the frustrating slow and costly process of obtaining organic certification for the oil, so that it can be marketed.

Meanwhile, larger demographic transitions are introducing new tensions. Eighty percent of Uganda’s population is rural, yet the bulk of the nation’s food supply is produced by women and the elderly, who often don’t hold tenure to their land (Lindow 2012). A massive wave of urban migration is meanwhile underway, as young people leave with hopes of finding jobs in the cities. The community elders are all too aware of these trends, and visiting the community one feels their sense of urgency in trying to create a sustainable future in Bukedea.

Yet agricultural productivity is failing to keep up with one of the world’s fastest-growing populations, while new market forces such as the return of peace to neighboring South Sudan are upsetting local markets, causing shortages and price hikes (Lindow 2012).

For both the community and the university researchers now, the question is how can they create a relationship that is mutually beneficial—that harnesses the knowledge of RUFORUM for the benefit of the community, and does likewise for the researchers.

VI. Ebalangite

Ebalangite is a local traditional herb, revered by the elders for its healthy property. Lucy Aloka, an elder who says she is nearly 100 years old, declares that she drinks Ebalangite daily, and she credits the herb, which is brewed as a tea, with giving her the strength and life force to continue working in her fields in spite of her age.

Sitting in the shade of a mango tree, the elders lament that their children and grandchildren are moving away from the community, and that they do not seem to appreciate the importance of Ebalangite, which in the discussion sort of becomes a proxy for all of the traditional values and knowledge that seems like it will be lost with this generation.

The predicament recalls the discussion from Part A of Social Equity, and particularly of Amartya
Sen’s “Development as Freedom” stance, which reminds us of the value of culture, which cannot really be quantified. In light of the story of the Bukedea community, it raises the question, assuming that a Western-style path of development were followed, then what would be lost in the process? The elders also report that their children who have lost touch with the traditional ways are beginning to eat fast food and are developing health problems such as diabetes and heart disease that were previously unheard of in the community.

If we accept the premise that a certain type of thinking got us into our ecological predicaments, and that other forms of thinking are needed to extract ourselves from these problems, it makes sense from a logical point of view to return to traditional knowledge as a basis.

During the meeting, the elders also expressed their hopes that RUFORUM researchers would study and document the properties of Ebalangite. For them, it is about preserving their natural and cultural heritage for their children. One elder, Stephen Oroni, put it very simply, saying: “We want our local life to survive, as it is dying now” (Lindow 2012).

The question of collaboration between indigenous communities and researchers of course raises thorny ethical dilemmas, such as who would control the rights to benefit commercially from the knowledge of herbs that have commercial potential. Although legal precedents and frameworks are emerging in various areas of the world for dealing with such dilemmas, this is an area of strong emergence in Africa, and more research is needed into the specific African contexts.

This becomes important as the question is asked of how communities can pursue a path of development that brings a higher quality of life, yet avoids the same disastrous outcomes, such as pollution, degradation of local soils, rivers and other natural resources; and obesity and sedentary lifestyles, that have afflicted the West. For example the Ebalengite could have commercial potential. So how can this potential be developed in a way that will contribute towards the development of the community.

What legal and policy structures are in place to guard against commercial exploitation that does not benefit the community? And indeed, who has the right to ‘ownership’ of natural resources?

One issue, of course, that does raise a red flag is the asymmetrical power relations that exist between a community like Bukedea, which stands, as noted by Sachs, in many ways outside of the fold of globalisation and the access that provides to power, information and opportunity. While this
is, at the same time changing, for example as farmers create their own audio-based network for distributing information that is relevant to their needs—essentially the researchers themselves, as well as a number of local NGO's, are the community’s strongest link to the world beyond the local community.

Furthermore, Bukedea faces tough questions concerning its own power structures and directions, in a new era characterised more by new opportunity than basic survival—yet against the backdrop of deep future uncertainties.

At the same time, if we accept that the Bukedea community lies on the margins of the global economy, it can also be argued that this marginalisation could represent a sort of freedom from the straitjacket of dirty development that the massive infrastructures that grease the wheels of the global economy have imposed (Swilling and Annecke 2012).

While powerful interests are vested in maintaining the dirty status quo infrastructure in energy, transport, urban infrastructure and even indeed agriculture itself that perpetuates unsustainability, members of the Bukedea community might enjoy an opportunity for experimental, distributed (and ultimately hopefully more sustainable) new forms of development to take hold that eschew the need for dirty and large new infrastructures, replacing these for example with solar-powered lighting and cell phone chargers, and biogas cookers, at the household level.

As a means of economic survival as well as food security, the creation and realisation of vibrant local small-scale agriculture then becomes a fundamental platform from which to launch this more organic and self-organising form of development. In both Bukedea and Kiboga, for example, neighbors and communities have organised themselves into groups, which share in both the work and the profits of their labour, are able to pool their resources to the benefit of all. These groups still face many problems and obstacles to development, ranging from a lack of access to finance to pests and crop diseases which habitually claim around half of a farmer’s crop (Lindow 2011).

Yet as farmers grow more prosperous, the opportunities open up for new forms of low carbon growth to take hold on the margins, just outside of the fold of globalisation.

VII. Conclusion
In my view, by virtue of its multiple simultaneous relationships and engagements, and its vast stores of knowledge and capacities, and organisation such as RUFORUM holds considerable potential to
create and hold the spaces for advancing sustainability and sustainable development discourse and practice, using a broad and multi-faceted framework of complexity. As has been argued, the organisation provides a critical link between many of the most important actors who are, collectively and in different ways, shaping the future of agriculture across Southern and Eastern Africa.

The communities in both Kiboga and Bukedea both face profound future uncertainties, and challenges posed simultaneously as a result of their being marginalised from and encroached upon by the structures of globalisation. As a well-intentioned intermediary from the globalised world, RUFORUM links these communities to the global fold, but in ways that could have unintended outcomes. The future challenge for both RUFORUM and the communities will be to engage with one another in ways which leave open the possibility of future choices, rather than locking either community into a particular path of development, which could in unforeseen ways serve to strip the community of autonomy.
Bibliography


