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Learning from experience in sustainability

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ABSTRACT

This paper explores the apparent contradiction between the 'linearity' of most Sustainability Indicator (SI) projects, with defined outputs achieved in a set period of time, and an implied 'circularity' that goes with most sustainable development (SD) initiatives. Projects usually have clear parameters within which they are implemented, and the inclusion of elements such as the need for accountability, measurable impact and 'value for money' have grown in importance. Whether we like it or not, it could be argued that we live in a 'projectified' world. We suggest that one way of exploring this potential contradiction between 'linearity' and 'circularity' is to frame the project with a Kolb Learning Cycle heuristic. This will facilitate a rationalisation from those implementing the SI project as to why decisions are being made and for whom. If these questions are opened up to the project stakeholders, including beneficiaries, then the Kolb cycle could encourage learning and understanding by all involved. It is suggested that such learning should be a valid output of the SI project, although typically the focus is only upon the final list of SIs and how they feed into policy. Funders need to take a broader perspective by allowing for both within SI projects, even if learning is not a measurable or tangible outcome. These points are explored within the context of the wider literature and SI projects in Malta and Lebanon.

INTRODUCTION

There are many appealing aspects to sustainable development (SD), but aside from the obvious key issues of equity, morality, theory and practice perhaps the one fact that strikes us more than anything is the symbolism and imagery in the domain. It is rich with interlocking circles, systems diagrams, AMOEBA, RADAR, KITE graphs and even "dashboards". Perhaps no other sphere of development has been presented so visually, and we can delight in the time and imagination taken to construct the images we often see - including, no doubt, many at this conference.

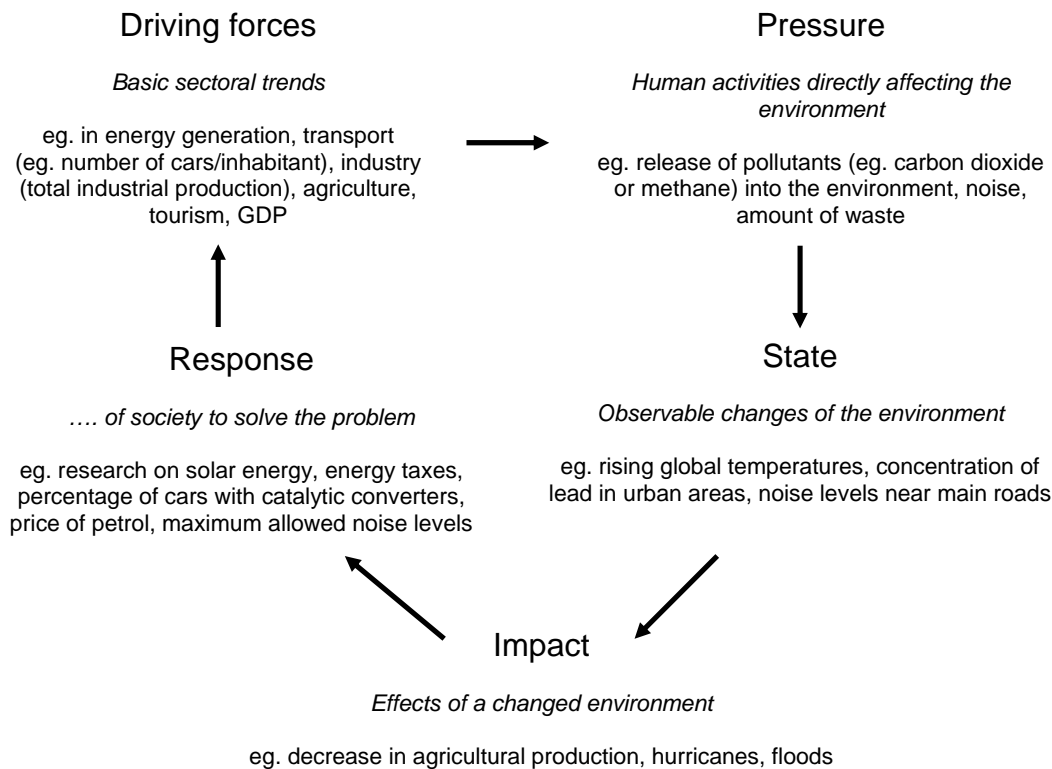
Perhaps the one essence that emerges out of the images is the circularity of SD. They express something which never ends and there is no closure to the process. We can never arrive at a defined 'end point'. People and society constantly changes and sustainability changes with it. Even if we take the most quoted definition of SD:

"Development that meets the needs of current generations without compromising the ability of future generations to meet their needs and aspirations."

WCED (1987)

it is apparent that 'needs' and 'aspirations' are subjective not objective, and as such are open to constant reinterpretation – even reinvention. SD imagery often reflects this by using the circle. Even in linear diagrams it is implied (if often not clearly stated) that at the 'end' of the line there is an arrow that comes back to somewhere near the beginning. This is perhaps best typified by considering the classical pressure-state-impact-response classification of Sustainability Indicators (SIs) as set out in Figure 1. It is implied that the process never ends as change will always be present in a society. For example, the advent of new technologies and strategies will open up new threats and possibilities, and desirable impacts may alter as society values and structure changes.

Figure 1. Classical Pressure-state-impact-response (PSIR) model for indicators of sustainable development (after Jesinghaus, 1999).



The circle is a useful device when presenting the SD process, but as simple and logical as it is, we have wondered about the extent to which it is achieved in practice. After all, we live in a world where there is increasing pressure for resources, ever greater demands for accountability and 'value for money' and yet we all want to see maximum return for lowest cost. The conventional means to achieve this sense of accountability is via discrete, costed and closed periods of spend and exertion – the project. It is by the means of the project that agencies manage the vast majority of their work and appear credible to the donors who make their interventions possible. In short, the environment in which we as researchers and practitioners are trying to do SD is often 'projectified'. However, there are contradictions to closure and discreet areas of spend. For example, when we have arrived at the end of a project, when the outputs have been delivered and the money has finished is there really scope for going back to the start? Will funders agree to constantly update the SIs we may develop in Figure 1 - for ever? Will local agencies pick up the process, has this been planned for and costed?

In this paper we will explore this apparent contradiction between the linearity of SD projects, with a defined end point, and the circularity that the very concept of SD requires – the contradiction between boundless need and discreet closure. We suggest a way of 'rounding the line', and test these ideas with 2 Blue Plan¹ projects of which we have experience: CAMP in Malta and Lebanon.

DIMENSIONS TO SUSTAINABILITY: A NEW SYNTHESIS

We suggest that one way to explore this contradiction between linearity and circularity is to draw upon the Kolb learning cycle (Kolb 1984). Others have drawn a parallel between SD and the Kolb Cycle (Hutchcroft, 1996) and explored SD as an essentially learning process (Meppem and Gill, 1998). Here

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we will consider the nature of the surface of reality represented by a total of 12 mindsets existing at four different aspects (reflection, connection, modelling and doing) of the learning cycle (with 3 dimensions at each of these). Please note that we are not arguing that the four points of the cycle and the three dimensions within each of these that we have used are exclusive, definitive or definite. Rather we are using this approach to demonstrate that SIs can arise from a range of different epistemological understandings of SD and used as a means to represent 'truth'. We are purposely using the device to explore this diversity rather than seeking to set out a 'truth' as we see it. Our suggested 3 dimensions for each of the 4 nodes will now be explored.

REFLECTION

Reflection is when the important aspects of learning are assimilated and either stored for subsequent action or dismissed as irrelevant. We have considered it in terms of the three continua of:

1. *Type of focus*: ideal to pragmatic.
2. *Approach to change*: functional to dysfunctional.
3. *Thinking*: reductionist to systemic.

In our experience of the literature SIs are almost always considered to be *pragmatic* measures with *functional* approaches to aspects of *reductionist* elements of wider reality. *Pragmatic* is represented in the choice of SIs which relate to small step change rather than perhaps a more ideal but substantial change. Time and resources available could well be the limiting factor here. The *functional* is seen in the focus on teams of applied 'experts' working to a project script. *Reductionist* refers to the way in which SIs are often seen in relative isolation – pointing at specific isolated and of necessity, fragmented issues of concern - rather than consider in depth how they interact and influence each other. Even with SIs in a PSIR framework (Figure 1) there may be little consideration of such linkages (De Kruijf and van Vuuren 1998). We would argue that tendencies towards reducing complexity to a single index or category (e.g. the sustainability barometer) is one extreme, while allowing for a host of individual indicators with a range of interpretation represents the other.

CONNECTING

In the second aspect of the Cycle we consider the continuum relating to connecting. Connecting means linking personal and team reflection on experience to experiences from related areas and from others working in these fields. In this case we have selected the three scales of:

1. *Relating to the world*: anthropological to cosmological
2. *Approach to science*: pure to applied
3. *Social interaction*: control to partnership

Our own experience of the processes which go in the development of SIs is that they tend to arise as a function of concern for mankind first (*anthropological*) and the environment second (i.e. weak sustainability). They are also seen as an outcome of *applied* (rather than pure) *science* and an endeavour to allow experts and others to *control* social processes. More recently there has been a move towards the use of indicators as learning tools (the 'reactive' indicators of Moffatt, 1994), but for the most part they have been seen in a proactive sense as aids to policy development.

MODELLING

The third, modelling or experimenting aspect of the cycle relates to the:

1. *Indicator methodology*: explicit or implicit
2. *Engagement with stakeholders*: inclusive or exclusive
3. *Type of indicator*: qualitative or quantitative

In our experience it would appear that the conventional form of most sustainability indicators relates to a minimalist dialogue with stakeholders (*exclusive*), seeking *quantification* and developing *explicit* indicators (defined and replicable methodology).

DOING

In considering the ‘doing’ or ‘acting’ aspect of the cycle we have applied the three scales of:

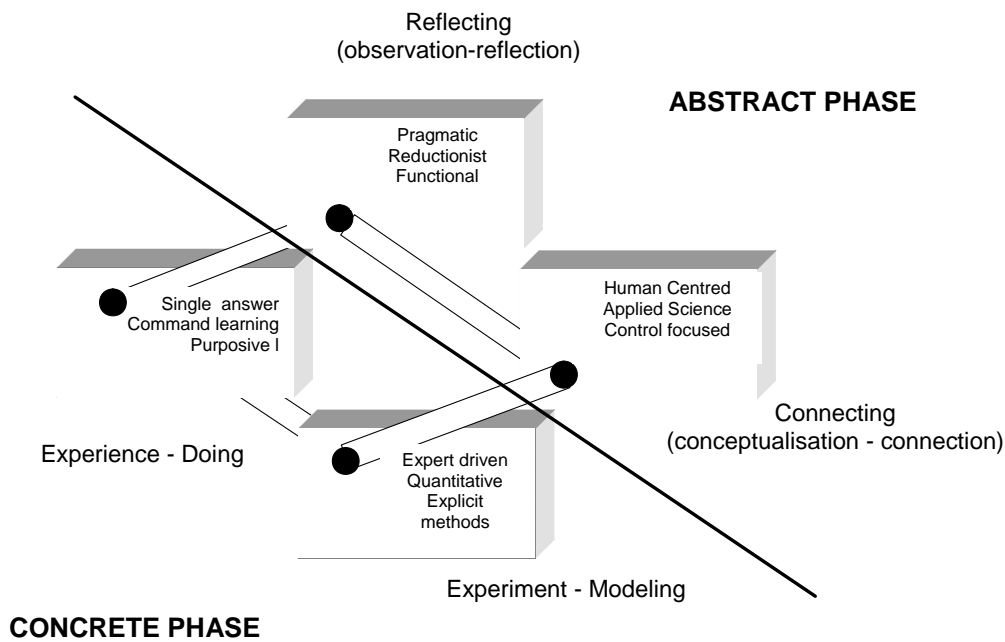
1. *Outcome*: singularity to diversity
2. *Approach to learning*: command to autonomy
3. *Project approach*: purposive to purposeful

Again, working purely from our of the literature relating to SI projects (and hosts of related projects), the conventional wisdom indicates that most such projects are focused on single outcomes at any one point in space and time as specified by the Project Blueprint. Projects also tend towards instruction and command as outcomes of learning as opposed to emergence and autonomy. Key concerns are usually with achievement, accountability and getting the most impact from the resources allocated. That is, they are directive and purposive rather than self-organising and purposeful.

TRAVELLING THROUGH THE MULTI-DIMENSIONAL SPACE OF SUSTAINABLE DEVELOPMENT

Taking the Kolb Cycle as a whole the dimensions combine as shown in Figure 2.

Figure 2. An Activity Sequence Diagram of Kolb’s learning cycle (building from Kolb, 1984). There are two phases and four elements of the cycle. The concrete phase represents the practice – the doing – while the abstract represents the ‘thinking’. These have been expressed in conventional Sustainability Indicator experience within a typical project mindset.



In Figure 2 the 3 dimensions at each of the four nodes are represented as a box. We would suggest that all SI projects can be mapped through the four boxes of Figure 2, but the location through which the project 'passes' at each point may be different for different projects. In effect, certain combinations of the coordinates at each node can be joined to form a pathway or 'wormhole' through the cycle. We would also contend that movement through one set of coordinates at one point in the cycle will tend to predetermine the exact coordinates for movement through other nodes. Certain types of reflection may well prejudice resulting connection and this in effect will have impact on modeling and doing. It is also possible that the wormhole can change shape by becoming broader at one point in the cycle (wide range of viewpoint) and narrowing at others (narrow set of viewpoint). Indeed the sustainability wormhole could split into smaller wormholes and pass through a number of separate coordinates at one point in the cycle before merging to pass through one location at the next point. All sorts of possibilities exist. We could also see each point as presenting a set of issues for discussion. Why a particular set of coordinates in that space is selected above all other possibilities could be analysed and reasoned rather than passing through a pre-determined wormhole at speed and without questioning.

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MAPPING THE UNKNOWN AND UNDERSTANDING OUR DESTINY

In order to help map any particular SI project onto Figure 2 we have developed a 12 point questionnaire linked to the 4 X 3 dimensions (Table 1). Depending on the outcomes of the questions, various project patterns arise which we have clustered into four distinct types (Table 2). These types may also be thought of as lenses for viewing and understanding the world processes we are engaged with. Others – notably Richard Bawden (Bawden 1997) have used similar devices – in Bawden's case referring to them as a conceptual 'window on the world'. The 12 questions could be asked of the SI project team members before the project begins, and the definition of types could then be informative in terms of indicating the manner in which the project might develop. Alternatively, the questions (or variants) could be applied during the life of the project with stakeholders included throughout and reflective learning and practice a key outcome of the project and not just an emergent surprise.

EXAMPLE: MALTA AND LEBANON

What follows is purely demonstrative at this stage of a process requiring further refinement and subsequent development. In the light of the discussion presented so far, we have applied the questionnaire in Table 1 to two projects with which we have been involved in Malta and Lebanon (Table 3). This analysis is, of course, subjective, but the result is indicative of our experience of the projects. It can be seen that both Malta and Lebanon were experienced by us as providing overarching tendencies to holism and an organisational focus. Technocentric and environmentalist foci are less evident.

What does this tell us? The implications are that the projects are organised on wide ranging and diverse perceptions taking into account the multiple perspectives of stakeholders, towards organisational goals for developing the SD debate and its futurity in country and maybe less to do with what one might refer to as conventional and narrow environmental concerns. But these are our views. As a next step it would be interesting to conduct wider interviews with a range of project stakeholders, including those meant to ultimately benefit, to gain further inference of the overall tendencies of the projects. More widely it would be interesting to conduct a questionnaire analysis of the perceptions of stakeholders in a wide range of such SI projects. Such questionnaires might provide compelling information on the effectiveness of the SI project globally – especially if related to a review of the published outcomes of these projects.

DISCUSSION

All of the foregoing presents a picture of multiple-dimensionality in SI development, and given that SIs are but a practical tool that helps solidify ideas, in SD itself. Yet perhaps the most noticeable outcome of our work in Malta and Lebanon was the joy that the participants showed in learning about SD through SIs. Others have had a similar experience (Kline, 2000). However, in our view the typical SI project mindset as set out in Figure 2 typically focuses far more on SI lists and implications for policy

as valid outcomes rather than on stakeholder learning. In other words, it is the end of the loop that matters and not the experience of passing through the cycle. We suggest that this is a pity as SIs provide us with a way of discussing important and contested issues; they provide a valuable common currency of debate and exploration. In that sense we are in tune with Meter (1999) who suggests combining community and expert SIs. The difference is in our emphasis on the learning process in getting to these, where all (including the expert) take part as equals and not as passive recipients of the privileged knowledge of others. Neither would we necessarily expect the community (or stakeholders) to use the indicators in the sense that the project would mean the word. The main point is that the learning framework helps keep “*contesting actors together*” and “*provides them with a platform for fruitful debate*” (Kasemir et al., 1999).

We realise that this may seem unpalatable for some funders as such discussions may not appear to be productive in terms of generating tangible outcomes, and could perhaps even be seen as inimical in deflecting attention from the end point and maybe even call into question the project process. But maybe it is time to question the projectified world order?

How is what we propose different from other foci on learning for sustainability? Meppem and Gill (1998) provide a case that is very similar to our own, and we agree with much that they say. Where we differ is perhaps in their rejection of goal-orientated decision making:

“There is a need to be cautious of prescriptive goal-orientated decision making which makes assumptions about the ability of policy makers and resource managers to control systems under their jurisdiction...”

The new role for policy makers is to facilitate learning and seek leverage points with which to direct progress towards integrated economic, ecological and sociocultural approaches for all human activity.....

This describes a move away from a culturally inappropriate, exclusive epistemology of positive and normative definitions to a process that facilitates reflective insight and the genuine sharing of ideas.”

Meppam and Gill (1998)

However, we live in a world that demands ever increasing accountability from those providing resources to those expected to use them let alone those meant to benefit. Hence our framework does not negate or diminish the desire of funders for the ‘end product’, but we suggest that more discussion on the road to getting there could be highly advantageous. It is perhaps worth stressing again that we are not suggesting that funders abandon a focus on eventual outcomes. It is important that SIs feed into policy and this should include an assessment of performance on the part of implementing agencies (Brugmann, 1997b; Guy and Kibert, 1998). Learning in itself does not necessarily lead to change (Brugmann, 1997a), but it was noticeable in the Malta project that no frustration set in amongst participants, even though the eventual usage of the SIs is, at the time of writing, uncertain.

What we suggest is open to a host of potential criticisms that usually surround participative approaches in SD. Unequal power relations still exist (Kasemir et al., 1999), and ultimately much depends upon the prevailing mindset of the funding agency and the skill of the facilitator and the specific tools he/she applies.

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Table 1. Types of question that could be asked to identify a tendency towards the extremes within the 4 nodes of the Kolb Learning Cycle in Figure 2.

No.	Node	Dimension	Type of question that can be asked	If yes then:
1	Reflection	<i>Type of focus</i>	When I reflect on my experience I am interested in lessons that provide me with wide ranging and general guidance	ideal
2		<i>Approach to change</i>	I am only interested in change which arises from an obvious need	functional
3		<i>Thinking</i>	My SIs need to reflect the whole and not just parts of the context	systemic
4	Connecting	<i>Relating to the world</i>	My focus is determined by the needs of mankind first	anthropological
5		<i>Approach to science</i>	I'm more interested in applying SIs than questioning the meaning of SD or understanding the context	applied science
6		<i>Social interaction</i>	We need to bring people together to consider how we will do SD and develop indicators	partnership
7	Modelling	<i>Indicator methodology</i>	Indicators can often arise from people's experiences rather than scientific observations	implicit
8		<i>Engagement with stakeholders</i>	I like to have a wide and diverse team to work with for all aspects of project work	internal
9		<i>Type of indicator</i>	SIs are often unquantifiable	qualitative
10	Doing	<i>Outcome</i>	Projects are at their best when they focus narrowly on limited outcomes	single
11		<i>Approach to learning</i>	Indicators teach us what we need to do	command
12		<i>Project approach</i>	A project works best when its goals are set by the project team themselves	purposeful

Table 2. Tendencies and types in sustainable development indicator projects.

Type of question that can be asked	Type of SI project			
	Holistic	Technocentric	Organisational	Environmental
When I reflect on my experience I am interested in lessons that provide me with wide ranging and general guidance	Y	N	N	Y
I am only interested in change which arises from an obvious need	N	Y	Y	Y
My SIs need to reflect the whole and not just parts of the context	Y	N	Y	Y
My focus is determined by the needs of mankind first	N	Y	N	N
I'm more interested in applying SIs than questioning the meaning of SD or understanding the context	Y	N	N	N
We need to bring people together to consider how we will do SD and develop indicators	Y	N	Y	N
Indicators can often arise from people's experiences rather than scientific observations	Y	N	N	N
I like to have a wide and diverse team to work with for all aspects of project work	Y	N	Y	N
SIs are often unquantifiable	Y	N	Y	N
Projects are at their best when they focus narrowly on limited outcomes	N	Y	Y	N
Indicators teach us what we need to do	N	Y	N	Y
A project works best when its goals are set by the project team themselves	Y	N	Y	N

Table 3. Observed tendencies and types in sustainable development indicator projects in Malta and Lebanon.

Type of question that can be asked	Type of SI project			
	Holistic	Technocentric	Organisational	Environmental
When I reflect on my experience I am interested in lessons that provide me with wide ranging and general guidance	Y	N	N	Y
I am only interested in change which arises from an obvious need	N	Y	Y	Y
My SIs need to reflect the whole and not just parts of the context	Y	N	Y	Y
My focus is determined by the needs of mankind first	N	Y	N	N
I'm more interested in applying SIs than questioning the meaning of SD or understanding the context	Y	N	N	N
We need to bring people together to consider how we will do SD and develop indicators	Y	N	Y	N
Indicators can often arise from people's experiences rather than scientific observations	Y	N	N	N
I like to have a wide and diverse team to work with for all aspects of project work	Y	N	Y	N
SIs are often unquantifiable	Y	N	Y	N
Projects are at their best when they focus narrowly on limited outcomes	N	Y	Y	N
Indicators teach us what we need to do	N	Y	N	Y
A project works best when its goals are set by the project team themselves	Y	N	Y	N
Total highlighted in each category	10	2	7	4