

# Assessing the Sustainability of Redeveloped Sites in Practice: The RAF process

K. Padiaditi, W. Wehrmeyer & K. Burningham

*Centre for Environmental Strategy, University of Surrey, Guildford, GU2 7XH*

## ABSTRACT

This paper describes the Redevelopment Assessment Framework (RAF) designed to assess and monitor the long term sustainability of brownfield redevelopment projects. It begins by summarising the results of a review of existing sustainability assessment literature and interviews with practitioners and agency representatives, confirming that there are currently no tools directly applicable to Brownfield redevelopment projects, especially not one which evaluates the sustainability of development projects throughout their land use life-cycle. The characteristics of the RAF are then outlined and each stage of the process explained. The framework has been implemented in a pilot case study which is briefly described before the paper evaluates the model's usability and effect based on feedback from pilot study participants. To conclude, the benefits of the RAF are summarised and recommendations are made with regard to its potential for wider application in the future and its ability to change current sustainability measurement practice.

## INTRODUCTION

The paper summarises a review of existing theory and practice in the use of sustainability indicators for brownfield regeneration, highlighting the shortcomings of existing tools and pointing to areas where new approaches are needed. Based on this, the paper outlines the features of the new Redevelopment Assessment Framework (RAF), followed by a description of a pilot case where the RAF was implemented. The final section of the paper provides a brief overview of how participants of that pilot case evaluated the RAF process in practice and concludes by considering the future potential of the RAF and the actions necessary for its nationwide adoption.

## BACKGROUND: THE LIMITATIONS OF EXISTING SUSTAINABILITY ASSESSMENT TOOLS

A review of current theory and practice regarding the use of sustainability indicators was carried out, which involved both a review of existing literature and interviews with relevant stakeholders (e.g. developers, LA officers, consultants, indicator tool developers) involved in, and thus experienced with, the brownfield regeneration process. The theoretical review concluded that despite the plethora of existing sustainability assessment and monitoring tools, there are none directly applicable to brownfield redevelopment projects, and in particular there is a lack of indicators to assess the sustainability of reclamation processes. In addition there are no tools capable of assessing the sustainability of a redevelopment project throughout its life-cycle (meaning from its conception and design to construction and its operation) (Padiaditi et al. 2005). Most tools that do exist focus on building performance and environmental issues either during construction or in the future land use and thus fail to consider the site holistically across its life-cycle and to evaluate the wider implications and socio-economic effects of a development. Risk communication and participation in decision making is paramount with regard to the acceptability and sustainability of brownfield redevelopment projects (Padiaditi et al. 2005a). Additionally, existing sustainability tools tend to have top down pre-determined indicators which result in limited ownership by users and fail to involve the public who will be affected by the development proposals.

Interviews with stakeholders as well as a survey of 987 developers<sup>1</sup> revealed low levels of use (and knowledge) of existing sustainability indicator tools. Main reasons for this were lack of time, resources and expertise. Interviewees also noted the general lack of a structured process to carry out sustainability assessments, even when making development control and planning application decisions. All interviewees identified the general problems of communication between, and even within, the development industry and the public sector, and described how lack of communication often leads to extended project expenditure as well as delays. Many commented on the lack of integration of indicator tools with the planning and development process. Developers interviewed

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<sup>1</sup> The survey had a 9.5% response rate and was conducted in conjunction with Reading University.

were not opposed to sustainability assessment and monitoring in principle, and many welcomed the idea on the basis that it would provide a structured level playing field for the assessment of planning applications. Additionally, LA officers pointed out that their powers to require or undertake such assessments would be limited and sporadic without their integration into existing planning processes.

The review therefore concluded with (a) the need for an effective and practical sustainability assessment framework for brownfield regeneration projects and (b) that such a framework should have these broad functions or design features: A simple, structured, not resource intensive, process is needed which is integrated within existing planning and development processes. It must perform its function, namely to assess and monitor the sustainability of redevelopment projects throughout their life-cycle, thus considering environmental, social and economic factors. The framework must be flexible and allow contextualisation and a participatory approach is needed both to increase communication between stakeholders and to ensure that public perceptions of risk are taken into account. Not much, then.

## **THE REDEVELOPMENT ASSESSMENT FRAMEWORK (RAF)<sup>2</sup>**

The overall aim of the RAF is to inform stakeholders about the sustainability performance of a site across its life-cycle in a way that it is practical and integrated with existing Brownfield Redevelopment Project (BRP) processes. The RAF is a process to facilitate the development of site-specific sustainability indicators in a participatory manner and thus to involve all significant stakeholders in the BRP process. It is directed mainly at large or complex developments, which would require an Environmental Impact Assessment (EIA) or a Statement of Community Involvement and should be started as early on as possible in the design phase of a development. Starting the RAF at the pre-application phase of a development is vital as at this point in the development's life-cycle decisions are made which will affect future sustainability. However, a balance needs to be struck between starting the RAF early and having sufficient clarity and certainty about what the future site and its land use should look like.

Furthermore, in order to ensure long term monitoring is carried out the RAF makes use of S106 agreements and therefore these need to be included in the planning application. As illustrated in Figure 1, the RAF consists of a simple procedure divided into 6 Phases, through which site-specific indicators can be developed and requires the total of 2 half days of participants' time.

Figure 1 shows the first three Phases covering the preparatory stages, to be undertaken by the lead partner, in most cases the developer or hired consultant, and include information gathering and team building to enable the subsequent RAF process. In Phase 1 the lead partner is required to identify all relevant stakeholders involved in the BRP and makes an informed decision based on the significance of each stakeholder to the BRP process as to who to involve in developing the sustainability indicators. There are no definite rules for stakeholder selection<sup>3</sup>, some sites require a more complex, diverse or politically sensitive composition than others. However, 12-14 individuals may work best in terms of group dynamics as it permits wider and deeper exploration in the later Phases, but smaller or larger numbers are possible, as appropriate. While some degree of subjectivity is inevitably involved in this identification process, the use of a systematic checklist and a specified agreement protocol for all relevant stakeholders aims to minimise this (See Padiaditi et al. 2006).

To further mitigate against bias, a community survey and possibly wider community consultation is proposed in Phase 2, questioning residents and businesses neighbouring the site about their concerns and aspirations with regard to the proposed development. This information is then used in Phase 4 of the RAF. Such surveys are feasible, as pre application consultation is now required for many developments through the Planning and Compulsory Purchase Act (2004) and the survey can form part of that, thus not resulting in unreasonable expenditure or organisation.

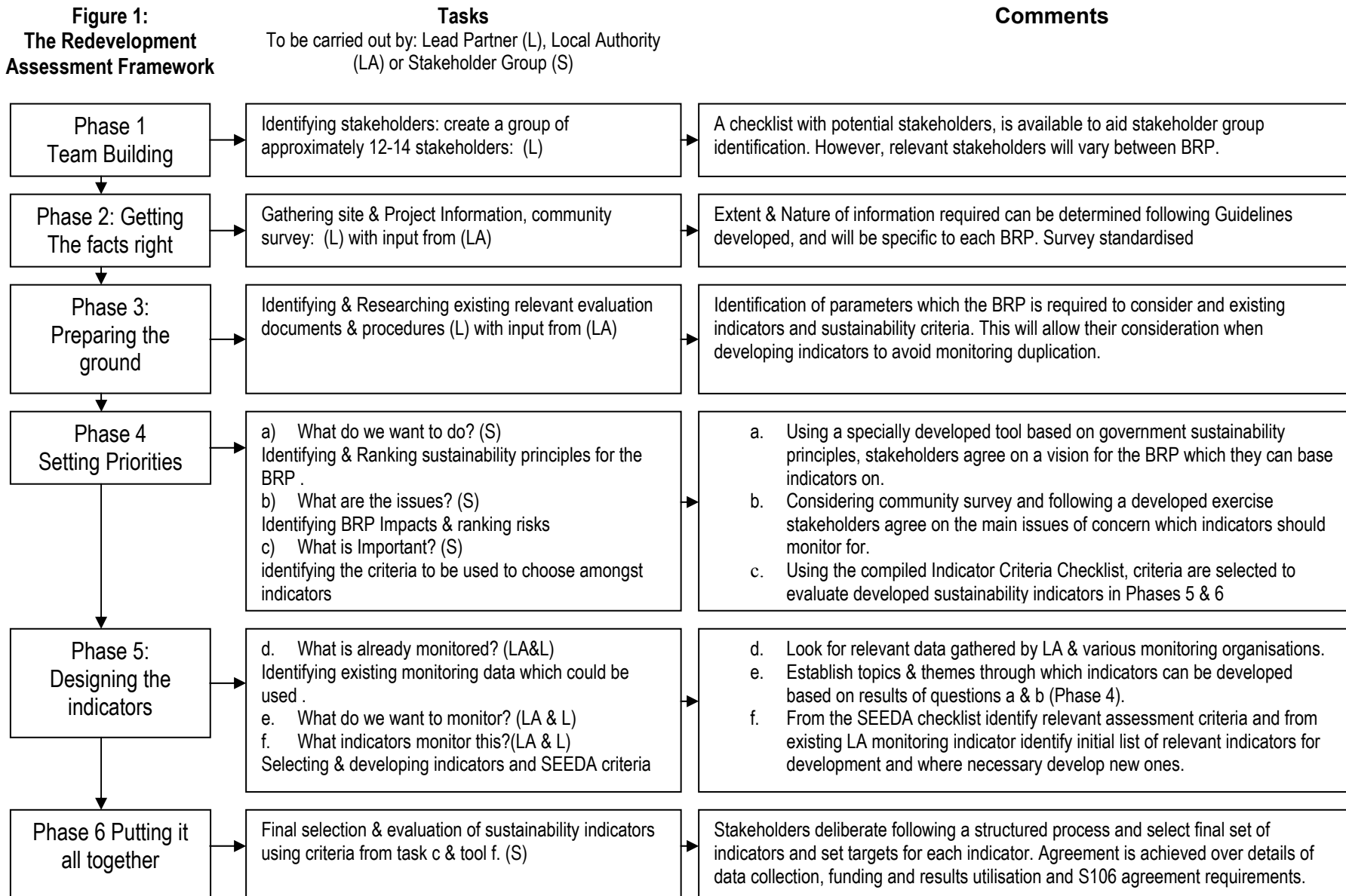
In Phase 2, again the lead partner gathers project and site specific information which is then presented in non-technical form to all relevant stakeholders together with the survey results (i.e. usually mailed out to the identified stakeholders). This enables informed decisions about the impacts of the BRP to be made later in Phase 4, which may be supplemented by context specific information provided by other stakeholders.

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<sup>2</sup> For a more detailed discussion, see also Padiaditi et al (2005)

<sup>3</sup> The stakeholders are representatives, or decision makers actively involved in the BRP, which however, could be argued to limit community involvement.

**Figure 1:  
The Redevelopment  
Assessment Framework**



To be carried out by: Lead Partner (L), Local Authority (LA) or Stakeholder Group (S)

Many evaluation procedures, frameworks and guidelines exist, which are relevant to a BRP especially in the planning phase of a project. Strategic Environmental Assessment (SEA), Local Development Framework indicators, Community Strategy indicators, LA sustainability checklists, and funders' sustainability criteria are of particular relevance. It is suggested, as a general principle, to prefer using these thus minimising duplication of data collection and reporting. Therefore, in Phase 3, the lead partner needs to consider all existing indicators so that they are either included or the topic they measure is addressed in the RAF. This integrates compulsory or statutory reporting with reporting on issues which may or may not have been ratified using greater community consultation, for example Local Authority sustainability checklists. This also ensures that the chosen indicators in most cases have baselines to enable comparisons of the development's performance. Utilising SEA and community strategy indicators delivers relevance and information feedback to planning policy, a key aspect of the above RAF "design brief".

Phase 4 named 'setting priorities', consists of three separate tasks which can be undertaken in a half-day workshop, and requires the involvement of all stakeholders identified in Phase 1, as well as the consideration of the community survey results. Firstly, stakeholders create their vision of sustainability specific to the site and the affected locality. This involves identifying and prioritising a number of sustainability principles which will guide the subsequent indicator selection in Phases 5 and 6. Secondly, stakeholders need to identify and prioritise the main positive and negative impacts they perceive as a result of the development as a way of integrating risk perceptions into the decision making as well as enabling the development of site specific indicators. Finally, given the absence of a consensus of what makes an ideal indicator (Pinfield, 1996), a collective decision-making process over the criteria which should be used to select the indicators is required, which essentially reflects a consensus on their long-term function (Ukaga, 2001). To support this Phase, an 'Indicator Criteria Checklist' has been developed which stakeholders can use. In this task, decisions are also required on who would fund the monitoring, who would carry it out and how (widely) to publish the results.

Having identified the thematic topics and impact areas for which indicators need to be developed in Phase 4, Phase 5 requires the lead partner and relevant LA representatives (for example policy or development control), to select an initial set of sustainability assessment criteria, preferably from the SEEDA<sup>4</sup> development sustainability checklist as well as from the existing long term indicators identified in Phase 3. The revised SEEDA sustainability checklist is utilised following the review of existing indicator tools, as it is the only one which makes reference to planning policy and which addresses social as well as environmental and economic issues and provides performance benchmarks. Furthermore, it is likely that the SEEDA checklist will be amended and launched throughout the regions and potentially included within regional policy, which would result in its wider UK adoption and planning relevance. As a result of Phase 5 a list of relevant SEEDA sustainability assessment criteria as well as long term monitoring indicators and benchmarks is compiled, to be sent to all participants for consultation.

Phase 6 consists of, at minimum, a second half-day workshop where all stakeholders reconvene to review the identified indicators, to provide the opportunity to make changes and to propose others. The flexibility this workshop provides to the overall indicator selection process helps to promote ownership of the results that may be specific to the context of the specific development. Finally, having assured consensus and adopted a small number of project- and site-specific indicators, and assessment criteria, targets are set with regard to each individual agreed indicator. The agreed indicators, where appropriate, can be introduced in the relevant monitoring sections of the EIA statement. Either way, S106 agreements should be agreed to ensure the RAF and its long-term monitoring will be carried out.

## **EVALUATING THE RAF AND ITS FUTURE**

The RAF process was piloted with the aid of a trained facilitator in a large mixed brownfield redevelopment in the Greater Manchester area consisting of about 520 residential units, a school and some employment units. The site is contaminated as it housed a Paper Mill and it is close to a landfill site under restoration.

The pilot included all 6 Phases and resulted in a S106 agreement enshrining future sustainability monitoring according to the process as agreed. The developer agreed to fund the monitoring but the LA had to identify the consultant to carry out the monitoring and to review the results. As it was

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<sup>4</sup> See <http://www.sustainability-checklist.co.uk> for description of the checklist.

a pilot, questionnaires and interviews were conducted with all participants to allow documentation of the experience and lessons that can be learnt from it.

Overall, participants were very positive about the RAF with the Local Authority stating that they would apply the process for future major applications. The main perceived benefit was the increased communication and collaboration fostered by the process as the RAF allowed an exploration of the development issues in a structured way. This also incorporated community views sourced by the community survey, which, surprisingly, was seen as a major advantage and not, as feared, a significant obstacle as it requires initial additional work. Importantly, LA officers confirmed that the RAF would be compatible with the planning process and the developer and planning consultant considered it a very useful tool for EIA.

Having a facilitator to coordinate the workshops was found to be particularly useful and participants appreciated the use of the SEEDA benchmarks, stating that it was good not to have to reinvent the wheel while introducing flexibility to introduce where needed. This was especially the case regarding the contamination indicators and criteria which were devised specifically for the site based on the site investigation and risk assessment results. In addition, this also embeds the RAF into the decision-making framework: It was found that utilising the SEA and community strategy indicators ensures relevance and information feedback to planning policy, something which currently does not exist and which LA participants found particularly helpful. All stakeholders appreciated having feedback on the development. In particular the policy officer felt that due to the compatibility of developed indicators to existing LA indicators, the results could feed into future policy. All participants stated that the time and resources allocated were reasonable and well spent and that the start of the RAF early in the development decision-making process was appropriate.

All participants thought that it would be useful to see wide adoption of the RAF. They pointed out, however, that the process could only realistically be applied to large scale developments due to the time and resource implications involved. Furthermore, both planning consultants and LA officers stated that in order for the RAF to be widely adopted it would have to be stipulated through government guidance or policy. It was also noted that in developments without public-private venture dimensions there might be little incentive for developers to carry out such a process. Furthermore, the LA participants stated that the RAF would have to be required by all LAs otherwise it could potentially be classified as unreasonable, should the case go to appeal. In addition, even though it worked on this occasion, it is recognised that 2 half-day workshops are not a long time, and that for more complex developments, longer workshops are likely to be beneficial.

To conclude, the RAF is a process which has been designed to enable the functional and relevant use of existing indicators to assess the sustainability of redevelopment projects. Through its application it was proven to be a success, with best practice and planning relevance being designed into the process. Participants identified a number of benefits of the RAF highlighting the greater communication and understanding of the different sustainability issues it provided, and supported wider application of the process. However, it is recognised that despite the compatibility of the RAF to existing BRP and planning processes, it could not work on a voluntary basis. In conclusion, there is a need for, and opportunity to, adopt the RAF through government guidance which would subsequently feed into regional and local planning policies, ensuring its wider adoption.

## REFERENCES

- Padiaditi, K., Wehrmeyer, W., Chenoweth, J., 2006, Developing Sustainability Indicators for Brownfield Redevelopment Projects, *Engineering Sustainability*, 159 (1), pp 3-10
- Padiaditi, K., Wehrmeyer, W., Chenoweth, J., 2005, Monitoring the Sustainability of Brownfield Redevelopment Projects. The Redevelopment Assessment Framework (RAF), *Contaminated Land & Reclamation*, Vol 13 (2), pg 173-183.
- Padiaditi, K., Wehrmeyer, W., Chenoweth, J., 2005a, Risk & Brownfield Redevelopment Projects, *CES Working Paper*, 2/2005
- Pinfield, G., 1996, Beyond Sustainability Indicators, *Local Environment*, 1 (2), pp 151-163
- Ukaga, O., 2001, Participatory evaluation of sustainable development, *Greener Management International*, 36, Winter, pp 27-36