BARTLETT SCHOOL OF PLANNING

UCL

Incorporating Principles of
Sustainable Development within the
Design and Delivery of Major
Projects: An international study with
particular reference to Mega Urban
Transport Projects
for
the Institution of Civil Engineers and
the Actuarial Profession

The sustainable business case

Omega centre
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1.0   Context

Policies setting out sustainable goals as key priorities are now widespread but realising their impact through implementation is far less widely observed. Seeking to bridge the policy-project interface frequently generates serious tensions: an issue highlighted in the questionnaire surveys (Omega Centre, 2009b). The basic question appears rational: why should a commercial body commit resources and energies to incorporate non-business dimensions, i.e. internalising what are often external aims and impacts? ("I've been writing policies for twenty odd years, and the people downstairs can say 'thank you for the policy' and then go on their way and do their own thing. Policies do not drive projects.")

This lies at the heart of any approach to bring environmental and social factors of sustainability into the RAMP processes. It is essential to understand how these factors feature overall in businesses' development and especially in their handling of projects and risk. To what extent do businesses and their projects have sustainability as a key focus? To properly establish such a focus, it would be necessary for the project's business case to incorporate principles and criteria that lead to sustainable outcomes. This has been termed as the sustainable business case.

This paper explores the current experience of sustainable business cases and considers their potential. It reviews examples of business development where sustainability forms a core objective, considers the approach to business strategy indicated in the STRATrisk principles (ICE & AP, 2006) and discusses the issues raised by them. It then considers the possible approach and factors for a sustainable business case, following the project structures defined in the RAMP Report (ICE & AP, 2005), and relates these to the RAMP processes.

The paper draws heavily on previous stages of this study, including the Literature Review Report (Omega Centre, 2009a) and the Survey Report (Omega Centre, 2009b). It reflects sustainability principles developed in the former and multi criteria appraisal practices as discussed in the complementary paper on Multi Criteria Analysis.

2.0   Current experience with sustainable business development

The practice of aiming to develop a business in a sustainable fashion is probably ancient. Steps in human progress which involve significant change in the physical and social environment of human communities have generally brought a reaction, especially from those who have lost out. This has led to some business enterprises seeking ways of making profits without an unacceptable impact on their area and the people in it. (Some classic literature in various languages has illustrated this.) However, profits still have to be made through employing resources in particular ways. The key issue is to establish how far this can be done in ways which are beneficial or at least not harmful for the communities affected and where the effects are properly understood by those communities.

This has become of far more concern over recent decades with growth in widespread public concern and political debate over environmental and social issues. The international debate over climate change and related topics has brought out a stronger need for project sponsors to be seen to address factors of sustainability. Partly this has reflected the increasing effect of policies and regulations (international and national) designed to reduce negative effects and promote a more sustainable future; a project which does not meet current and likely future standards may be forbidden or may fail to gain funding. But it also reflects a wish "to be seen to be green". (81% of responses to the RAMP Study survey did not support the hypothesis that sustainability is not essential.)

The approaches by major business interests to promote sustainable business development are well illustrated by examples such as the World Business Council for Sustainable Development (WBCSD - *http://www.wbcsd.org*). This is a global association of some 200 major companies, represented by their CEOs, dealing exclusively with business and sustainable development. Its Mission Statement says

> Our mission is to provide business leadership as a catalyst for change toward sustainable development, and to support the business license to operate, innovate and grow in a world increasingly shaped by sustainable development issues.

The membership of WBCSP is drawn from more than 35 countries and 20 major industrial sectors, and it has a global network of some 60 national and regional business councils and regional partners. Its role is advocacy and promotion of the business contribution to sustainable development, focusing on four key areas of energy and climate, development, the business role and eco-systems. At any one time it has a range of initiatives and studies under way. The organization has published many reports.

Typical of the WBCSD initiatives are reports such as that on transport, entitled *Mobility 2030: Meeting the challenges to sustainability* (WBCSD, 2004). This sets out seven goals:
- Reduce conventional emissions from transport so that they do not constitute a significant public health concern anywhere in the world.
- Limit greenhouse gas (GHG) emissions from transport to sustainable levels.
- Reduce significantly the number of transport-related deaths and injuries worldwide.
- Reduce transport-related noise.
- Mitigate traffic congestion.
- Narrow "mobility divides" that exist within all countries and between the richest and poorest countries.
- Improve mobility opportunities for the general population in developed and developing societies.

These goals form a valuable focus as they directly address some of the key environmental and social challenges that are common concerns at all levels across the world. However, its solutions focus on vehicle technologies and fuel choices and

development of road based transit and innovative techniques. But they do not include other solutions widely espoused by public authorities and NGOs, such as rail based solutions. Nor, despite the concentration on urban issues, does the report discuss urban planning's role in better access and sustainable movement patterns. Thus its intentions and its engagement in the field of urban sustainability are valuable: but some non-business interests might suggest that its approach is misleading.

The International Institute for Sustainable Development (IISD) has developed a set of strategies and tools that companies can draw on to translate an aspiration of sustainability into practical, effective solutions, drawn from and supported by case studies from around the world. These are set out on their web site (*http://www.bsdglobal.com*). The site explains that

> For the business community, sustainability is more than mere window-dressing. By adopting sustainable practices, companies can gain competitive edge, increase their market share, and boost shareholder value.

The site has six sections which cover:
- Current issues: briefings on specific sustainable development topics from a business perspective
- Strategies and tools: how to incorporate the principle of sustainability into everyday business activities, illustrated by real-life examples
- Markets: business opportunities arising from sustainable development
- Banking and investment: spotlight on how sustainable development is being approached by the financial services industry
- Working with NGOs: how businesses are forging working partnerships with lobby groups
- Training opportunities: how universities and professional training providers can help industry leaders incorporate sustainability into their business strategies

The BSDglobal case studies listed throw up more specific indications of how sustainable development is being approached in business terms. It includes examples of commercial companies (utility, manufacturing and services) but also public and voluntary initiatives to set standards. They include some examples of investment bodies:
- The UK Cooperative Bank, which offers individual and business customers the usual range of financial services, but with a strong emphasis on ethical and environmental safeguards
- Dow Jones Sustainability Indexes (DJSI), a set of global indices launched in 1999 to track the performance of companies judged to be the leaders in sustainable development
- FTSE4good, an index of 'socially responsible' companies, launched in July 2001, maintaining four separate indexes, and selecting companies for inclusion according to three sustainability yardsticks.

- Innovest, a research firm specializing in sustainable investment opportunities, which calculates individual sustainability ratings for companies using its 'EcoValue 21' analytical platform.

These bodies are all using identifiable criteria and measures.

Most of the BSDglobal case studies are operating companies which have committed themselves to certain sustainable principles and practices or to follow defined codes of conduct in this field. This also applies to the approach for companies indicated in the WBCSD reports and to other individual examples that can be found. Two international companies known for their adherence to high standards in all respects are included as BSDglobal case studies, where their approach is defined as:

- IKEA - An international retailer of furniture and household goods, which has take steps to address both the social and the environmental impacts of its purchasing decisions. These include high standards in environmental and ethical practices for IKEA's own activities and for those of suppliers, major financial support for international initiatives and agreements to protect and improve forests and woodlands, especially ancient ones, major financial support for child poverty initiatives, and information for customers.
- ICI - One of the world's largest chemical companies, which has itself set a series of tough health, safety and environment targets designed to deliver continuous improvement. This has been through two group programmes, Challenge 2000 and now Challenge 2005, aimed at reducing ICI's environmental burden and especially at improving product stewardship, biodiversity and water consumption. These include targets for improving employee welfare and reducing emissions. ICI believes the targets will help it deliver new and better products, and that using fewer raw materials will help ensure a more sustainable future.

In the transport field Eurostar, which operates high speed rail services over several major pieces of infrastructure (HS1 in the UK, the Channel Tunnel, LGV Nord in France, HSL1 in Belgium), started its Tread Lightly initiative in 2007. This is aimed at reducing its environmental and social impact. As part of this Eurostar adopted specific targets for reducing CO_2 output per passenger, originally by 25% by 2012, increased to 35% by 2012 when a faster reduction than initially assumed was achieved by 2009. This reduction is being achieved through action on four fronts: improving driving techniques; modifying on-board amenities; drawing energy from less carbon intensive sources; and aiming to maximise the number of passengers per train.

In addition Eurostar claims to be carbon neutral through offsetting the carbon costs by investing in non fossil fuel projects, mostly in the developing world. This approach is now becoming quite widespread, especially for companies engaged in longer distance transport; whether it is truly sustainable remains a matter of debate.

In addition to major corporations like this, most companies of any significance have mission statements or statements of corporate responsibility, sometimes both. These include references to protecting the environment, acting equitably towards

customers, staff and suppliers, and meeting sustainability goals. These are not always defined in terms of specific actions.

Companies may be involved in projects in different roles. The most influential role is as the promoter / investor. In this role they are responsible for developing the project and they may also act to implement it, thus having complete responsibility for the whole project. But they may also procure other companies to build and/or operate projects. In this respect they share some responsibilities with public authorities where these seek to have projects implemented. There is also a basic difference, however, in that companies must adopt a business oriented approach in procurement whereas public authorities may well go beyond a business approach to ensure that their policy aims are met in implementing the project. However, they too need to observe financial disciplines in elation to their budgets.

3.0   Issues in developing and using a sustainable business case

There clearly exist some very good approaches and initiatives by businesses and business groups to address the environmental and social factors of sustainable development. Many of these initiatives are no doubt underpinned by genuine commitment to achieve substantial results in this field. These probably form the top level of a widespread awareness of 'the sustainability issue' by businesses across the world. But these examples still throw up some important issues for the difficulties and the potential of a sustainable business case.

Sustainable businesses and sustainable projects require a context of sustainability. This means sustainable institutions, in commercial and operating organizations. But the primary responsibility lies especially with public authorities. These are essential to maintain visions of sustainability and also to ensure that they are effectively applied. The tensions between policy and practice can be seen in the dichotomy between the core aims of commercial operating bodies and those responsible for public policy.

On one hand commercial and industrial companies have ultimately to make a profit to stay in business. They need to attract funds in order to implement their projects. These imperatives place limits on how far any one organization or activity may go to address environmental and social goals; in effect, to internalize in their decision making what might be seen as external factors. If they go too far, then they risk going out of business. This would mean the failure of their own initiatives in aspects of sustainable development. It might deter other companies from active participation in such initiatives.

On the other hand companies are heavily influenced by policy rules and guidelines set by public bodies – primarily national governments but also international agencies. These set the standards which must be achieved in a range of fields. However, by setting a threshold which should be achieved, the public body is also implying that this is sufficient to be acceptable (lowest common denominator). Companies are to

some measure restricted by these rules; but they may also claim that the rules cause problems which are not necessarily attributable to them.

Regulations require all actors in the field to reach the same standards – but they do not require them to reach higher ones. ("What begins to happen is you have to have measures that are uniformly applied to everyone. So you start to move to a bureaucratic, lower common denominator …") It is up to companies in the relevant fields to choose whether to go further than other perhaps competing companies. In making their decision they will be primarily guided by the scale and pattern of overall benefits they see to their organization. They are naturally constrained by the factors of competition that lie at the heart of commercial activities. Furthermore regulations and guidance may in some aspects be imprecise rather than specific, leaving companies in a less clear position and perhaps not helping regulators either.

There are arguments that this particularly applies to Strategic Environmental Assessments (SEAs), Environmental Impact Assessments (EIAs), and other defined forms of sustainability appraisal. This compounds the criticism that such procedures, mostly laid down by statute, are separate exercises which have little real relationship with the project and hence little effect on its actual achievement of sustainability goals. But such procedures are imposed by statute because governments and international agencies believe it is essential to overcome the gap between policy words and practical action on sustainability. It would probably be more effective for businesses and closer to the spirit of the public regulation if these sustainability procedures were integrated more effectively with development of plans and projects. ("… an environmental impact assessment only takes into account the environmental impact that we've already codified as being important in the past. The problem is that every new project begins to change the configuration of them and what the new ones are.")

In principle a company can go some way beyond the requirements of regulations, through working to higher standards or putting resources into a more soundly based achievement of the required levels. This may earn them support – and more investment – for their soundness. So they need to judge what non-quantifiable benefits are worth to the balance sheet. However, there is also the risk that they may be seen as going too far and hence being unsound, leading to loss of investment. Such judgment is best carried out within the framework of a system of strategic assessment, as set out for example in the STRATrisk process (ICE & AP, 2006). This allows businesses to identify new or increased risks (threats) to the business overall and to develop actions to mitigate them. The same system also improves scope for identifying new and improved opportunities for developing the business and thus creating sustainable financial results.

The STRATrisk document lists many different risks under a number of categories, described as External origin and Internal origin respectively. Four of these are in the category Social/environmental; but a good number of others potentially reflect sustainability factors, e.g. 'court decisions with wide implications' could well reflect

legal judgments around such factors, which often lead to unforeseen changes in conventions or regulations.

A key factor in this, but one that is rarely voiced in specific terms, is the precautionary principle. This forms part of the global environmental debate and has been defined (by the Rio Declaration) as

> "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

This principle is equally applicable to businesses: taking action which causes harm in environmental or social terms could affect the businesses' standing and, more important, their success in material terms.

Strategic business assessments have to take account of timescales. Potential goals, including those in environmental and social fields, can be moving targets. Some key standards are set well in advance and remain the topic of regular discussions and review at international level, such as e.g. many set by the European Union. This enables companies within or with interests in the relevant industry groups to take stock of trends and progress and to identify how the standards could progress over the coming years. In this way project standards could be set to levels generally expected to be in place when the project reaches implementation. Significant change in regulatory context normally appears to take around twenty years. However, this does not always follow. Standards could be raised unexpectedly, or expected raises might not take place. Particular events may trigger significant changes unexpectedly (as e.g. security control standards for boarding planes have risen in abrupt steps over the last decade following terrorist incidents). This could mean an unexpected step change in standards or failure to implement an expected change.

The time factor is important for projects too. Any large project will take some time from its initial evolution through development, appraisal, decision, and implementation to become an operational scheme. This period may be long enough for regulations to change and higher standards to come into force.

The standards and focus for a project are primarily set by the sponsor, who is then responsible for procuring its implementation. The sponsor may be a commercial body, in which case it will be constrained by the commercial pressures outlined above. A public body is also limited to some measure by the discipline of its budget processes, and also has to follow necessary regulations. However, a public body can in principle go beyond commercial limits in establishing the project, since its role is to have standards achieved and possibly exceeded. Thus it can incorporate defined regulatory standards in the project requirements but also broader aims as well. How far a public body might do so depends on political will, public pressure and of course the priorities and levels of its budgets.

To identify how a project can be truly visionary and yet attract investment requires project sponsors and investors need to study issues and situations and to address them with care and focus. This is probably easier for large companies, which can employ experienced staff and advisors in specialist planning roles. Companies can also benefit from belonging to trade groups whose prime role is to promote the industry and to liaise closely with government and other public services. They may also require their managers and specialists to belong to appropriate professional organizations, who provide information and professional development (CPD) on industry and government trends. ("I think they're only as valuable as the skill, expertise and independence of the people who are assigned to carry them out.")

Large corporations and trade groups will also seek to influence government and other public policy instruments and regulations. There are various ways in which they may do this, including seeking to set the agenda or putting forward a vision which reflects their own industry's priorities. Sustainable development is internationally accepted as a vision but meeting all the goals needed to achieve it may well require highly unpopular steps which conflict with the demands and expectations of most people. Such steps might include spending more public money and putting constraints on unfettered demand as WCSBD and IISD, can propose approaches to sustainable development which fit in with the interests of their commercial and industrial activities but which also lower the pressures on public bodies to take unpopular measures. Of course these approaches might be less far reaching than the public aspire to or some politicians might wish.

The WBCSD report on future mobility forms an example of the positive and negative elements of this. On the positive side it suggests some valuable ways to improve road based and largely individual transport. On the negative side it ignores other widely practiced means of enhancing sustainable mobility, such as planning for more localised lifestyles, with higher proportions of movement on foot and bicycle, or aiming for significant modal shift to rail based systems for mass movement.

The other examples of sustainable business approach quoted show how a lot of companies have adopted advanced standards for their current activities: energy saving buildings and practices, sourcing of goods from suppliers who operate in environmentally efficient and socially equitable ways, engagement in supporting community development. Some of these are individually chosen, others reflect recommended best practice approaches. These are valuable examples and help to set standards and to generate advance in operations. Nonetheless it is questionable how far they move public thinking towards truly sustainable development. (For example, IKEA furniture purchased in the British Isles or South East Europe will have benefited from IKEA's justifiably reputed form of sustainable sourcing, manufacturing and operations: but it still involves substantial freight haulage and may displace local production and distribution.)

As well as government regulations, companies draw much of their guidance and their target values from standards developed and recommended by non-regulatory bodies. These may include bodies established by governments and public agencies;

trade groups such as IISD; others set up by industry groups; and even some companies which research and develop sets of standards on a commercial basis through being funded by industrial companies who share a wish to gain recognition for their efforts in the field. Publicly adhering to standards set by these types of bodies does indicate a genuine wish to advance towards more sustainability. However, they do not necessarily form an obligation or a constraint, in the way that regulations do.

Public bodies sponsoring and procuring projects may also work to de facto 'best practice' in setting the standards for the project. Projects which they procure may form examples of the public policies which they have set down in the fields for which they are responsible (e.g. spatial planning, environment, social equity). A public sponsor may well be able to act in ways which a purely commercial sponsor could not. For example, it could bring forward a major public transport project as part of an approved strategy which also saw land use development (housing and commercial) focused round the transit stations and highways managed so as to constrain traffic levels. This assumes that the authority has relevant powers (a situation which differs between countries).

4.0   Sustainable business case – principle and potential

<u>Corporate strategies and sustainability factors</u>

How far might the business case for a project be established and implemented in ways which form a firm commitment to sustainable development? While all businesses face limits, for reasons set out above, it is possible to draw out a number of principles and steps which might contribute to a sustainable business case. The prime responsibility for this lies with the sponsors developing and procuring a project. Investors also have a major interest, albeit primarily from the viewpoint of a successful investment. Both sponsor and investor in a project may be a public or a private body. It is also possible for the bodies with a responsible interest to include a combination of both.

In the STRATrisk process, the strategic risk to businesses is at the top of a simple hierarchy which also includes project risk. This is shown in <u>Figure 1</u>. Assessment of strategic risks (and opportunities) therefore also should provide insights and information that is relevant to the projects to be carried out by that business. This is shown by <u>Figure 2</u>. By implication the overall business philosophy and approach should apply equally to its on-going business operations and to the projects it develops and sponsors.

It does not follow that the understanding and assessments of environmental and social risks from strategic risk assessment can be directly carried into the risk assessments for a project. There are three main reasons for this:
- It cannot be assumed that a specific project reflects the balance of interests in the business overall. Each project requires assessment against factors

relevant to its circumstances of place and purpose and the broad objectives on which it is focused.

- Each project also needs to be considered in the light of current expectations and its own timescale. These may well differ from the factors considered in strategic risk assessment. (Assessing a project's risk may lead to revision of s business's strategic risk assessment.)
- Larger projects are generally sponsored by more than one organization or at least their funding comes from several investors. These differing stakeholders are likely to have different corporate aims and hence different assessments of strategic risk.

Nonetheless, an effective company strategic risk process that includes environmental and social factors of sustainability should provide significant insights and information on these factors for risk assessment of projects.

Procurement

The approach to procurement potentially forms an important aspect for incorporating environmental and social factors. The Report of the Government's Sustainable Procurement Task Force *Procuring the Future* (2006) defined the importance of procurement in achieving sustainability objectives and the principles raised: not least that undertaking activities with the focus on long term sustainability rather than short term factors is an efficient and rewarding way of carrying out business. It defined sustainable procurement as:

> Sustainable Procurement is a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment. … Sustainable Procurement should consider the environmental, social and economic consequences of: design; non-renewable material use; manufacture and production methods; logistics; service delivery; use; operation; maintenance; reuse; recycling options; disposal; and suppliers' capabilities to address these consequences throughout the supply chain.

Ward (2010) stresses the importance of a collaborative approach to procurement, based on optimum value rather than lowest cost. This involves close cooperation between promoter and a team of contractors, based on shared values rather than the threat of litigation. These shared values should enable the sponsors' view of the importance of factors such as sustainability to be carried through all stages of the project, including those undertaken by contractors and operators.

Incorporating sustainability factors in the project

Incorporating sustainability factors into the project investment life-cycle forms good business planning practice anyway. The overall principle should be to address the various stages with understanding, with the focus on creating better conditions rather than merely mitigating poorer ones.

To indicate how this might work, the following steps are suggested. They are set out in relation to the project life-cycle and the RAMP process, as defined in the RAMP Handbook. Table 1 illustrates where they would fit into the project life cycle as indicated for the RAMP project processes.

Opportunity identification

The opening stage is most important, as it is the point at which to establish clearly the context for the project in relation to sustainable development. This should take into account:
- the formal regulatory structures for environmental and social factors of sustainability
- the current issues and concerns over environmental and social factors
- the likely trends to further regulations and expectations in the field of sustainability
- which factors appear to be most important for the project

These may well be guided by the strategic risk assessment carried out by the businesses or other organisations sponsoring the project, as indicated above. They will also be of major concern to investing bodies.

From this the objectives for the environmental and social aspects of the project can be established, in parallel with economic and operational ones. What exactly is the project aimed at and why? (Building a road or rail link? Or bringing change to the city served?) What targets and standards will it achieve? What are its boundaries? i.e. what it is not intended to do is as important as what it is intended to do. Objectives may reflect a number of fields, with spatial planning an important one. ("… any transport project that's done for [e.g.] urban environment, needs to think and understand … Is the transport demand actually purely a result of poor urban planning in the past? If that is part of it …let's address the urban planning rather than continue to pile more and more transport on to a poor infrastructure.") It is also important to indicate which environmental and social factors it might not address. At this stage sponsors need to identify what they propose to do that goes beyond strict application of regulated standards. Is the aim to match current best practice or to set new standards? It is essential that environmental and social factors are taken into account from the start, not treated as an add-on at later stages.

A major project could of itself change the context in which it is working. (For example, a small transport project might alter people's travel patterns in an area and bring some changes to the townscape but a major one might bring major shifts in activity patterns and lifestyles and substantial physical change.) This possibility should be identified clearly and the implications spelt out. For a project with commercial sponsors this would form a key part of its link with the public authorities in the area; for publicly sponsored projects it should allow the authority involved to check the viability of its wider policy aims. There may be positive opportunities if the project's impacts, broadly assessed, suggest a clearly beneficial outcome. These

implications need to be recognised in the objectives (and should be fully assessed at a later stage in the appraisal).

A good system of stakeholder engagement needs to be established from the start. (92% of responses to the RAMP Study survey agreed with the hypothesis that stakeholder engagement is essential.) This should preferably be as open as possible in terms of who are included and what is discussed. But it must also recognise that the sponsor has responsibilities to take the project forward. Stakeholder engagement should enable environmental and social factors, especially non-quantifiable ones, to be listed from very early, so that they are not lost. It should also allow relative significance of factors to be drawn out, so that they can be weighted properly in assessment stages. Some aspects may well be contentious and could thus involve significant management time to address later in the project, and perhaps significant cost as well. It is important that these are brought out and dealt with at a very early stage to avoid such costs.

Both background analysis and stakeholder engagement can generate objectives and provide criteria for appraisal of the environmental and social objectives. But too many detailed targets may tie the project's development up by preventing its developers keeping it on track. The aim should be to consider all factors that might be noticeable and to use this as the basis for the database on environmental and social factors for the project. This should be established in parallel with databases on other factors. Carrying out this process thoroughly gives the opportunity to establish what information is available and what is not. It also offers clear markers of what the criteria for achievement ought to be, taken in conjunction with established or regulatory guidelines values.

The initial appraisal of the project required at this stage should be made through a methodology that incorporates the environmental and social factors. Outline financial appraisal is of course fundamental, to provide indications to sponsors, whether commercial investors managing funds or public authorities managing their defined budgets. However, appraisal methodologies based solely on monetization of factors do not provide a reasonable basis for including environmental and social factors properly. The principal means of including this is through Multi Criteria Analysis. This enables a wide coverage of different factors measured on different bases, including non-quantified ones. This allows the achievement of objectives to be judged on a 'pass / no-pass' basis too. (See complementary paper on Multi Criteria Analysis.)

Because of itself does not provide financial guidance, there should be two stages to appraisal: the first establishing the project's validity from the viewpoint of sustainability; the second identifying the financial return to investors. So the MCA appraisal should be complemented by a financial appraisal. The essential factor is that the initial project description, assumptions and estimates should be closely shared between the MCA and the financial appraisals. Cost effectiveness appraisal may also be used to establish the value of spending public funds.

This stage of the process may well include discussion of alternatives. A filtering process may help move towards a project that could meet the various broad objectives, including environmental and social ones. The process might lead to review of the initial objectives for the project. Development may be aided by interactive processes and sensitivity tests. Continuing stakeholder engagement will also provide a valuable commentary on suitability of various aspects of the proposal.

The final decision on whether to proceed and, if so, in what form, must reflect the financial appraisal – there will not be funds to do so if this is negative – but this in turn should follow the output of the MCA appraisal. For example, if the MCA criteria included a limit on noise levels and a need to avoid a certain urban area, then any form of the project which could not meet these would not be taken forward. In practice an MCA appraisal framework can incorporate financial appraisal, so that the two processes can be run as one.

<u>Appraisal</u>

Assuming that the initial phase identifies the project as potentially worthwhile, the second phase involves a full appraisal. This involves moving from the outline assessments of the first stage to a fully established project definition, including clearly developed objectives, full design details, costings and revenue estimates. These will incorporate relevant full databases, including descriptive material as appropriate. Establishing these allows full operational and financial appraisals, to enable funding to be obtained and formal decisions to be made. Funding remains crucial to a project's actually proceeding. It follows that investors have a particular interest in effective appraisal and need to see a positive return through financial appraisal (private commercial funding) or cost effectiveness appraisal (public funding).

At this stage a full assessment of environmental and social aspects should also be made. This should continue to follow the two key principles of being (a) integral with the remaining work of the project development and appraisal and (b) using the stakeholder engagement process as a source of information and indicators. It would develop the initial information and indicators from the first phase and define objectives and criteria. The aim would be to have as full a picture as possible (as for the remainder of the project work). This would allow identification of more remote but potentially still significant aspects of sustainability impacts. It would also enable judgment to be made, if appropriate, that some environmental and social factors do not justify full assessment.

The fully developed project should then be appraisal through an MCA appraisal, which should incorporate the full range of environmental and social objectives and criteria. Addressing these should have formed part of the work of designing the project in detail. The MCA appraisal thus becomes a focus for assessing how well the project addresses those aspects of sustainability judged significant, a feature which is important to both sponsors and to other stakeholders affected by the project.

The MCA appraisal need not be a once and for all procedure. If it indicates that the project design does not allow core objectives to be met, then the project design should be altered appropriately and the MCA appraisal re-run. Alternatively the environmental and social objectives should be built into design as obligatory factors, and then partial assessments made to check that they are met.

The financial appraisal remains fundamental, with cost effectiveness appraisal as necessary. This should be carried out once the MCA appraisal has indicated that the project overall meets sustainability objectives. They may be incorporated within the MCA procedures.

Investment planning

The key aspect in this phase is to ensure that the environmental and social goals adopted in the appraisal processes are firmly embedded in arranging the funding and procuring the contract team. In this there is a strong argument for a collaborative approach to procurement, to ensure shared values between sponsors and contractors. This has to be integrated with the continuing stakeholder engagement process. It needs to recognise the 'transactional costs' involved in continuing to meet the established environmental and social goals.

Most large projects are likely to engage public authorities closely, as key stakeholders if not as joint sponsors. Where the project is primarily sponsored by private commercial bodies, close liaison is essential with the relevant public authorities.

Asset creation

In order to ensure that sustainability is properly maintained as a key principle of the project's implementation, close liaison should be maintained between promoter and the contractors, with a formal process to ensure that environmental and social goals are met throughout the construction phase. This should include a formal reporting process at agreed intervals throughout the construction period.

Operation

In order to ensure that sustainability is properly maintained as a key principle of the project's operation, close liaison should be maintained between promoter and the operator, with a formal process to ensure that environmental and social goals are met throughout the project's operating life. This should include a formal reporting (monitoring) process at agreed intervals throughout the operating life.

Close-down

Reporting on the achievement of environmental and social goals by the project should form a distinct feature of the project's conclusion.

5.0   RAMP and a sustainable business case

The RAMP process is concerned with the establishment of risk and with steps to minimize it during the development and implementation of the project. The principles and process of RAMP can be linked closely to those for a sustainable business case. Table 1 indicates for which parts of business life-cycle particular aspects of a sustainable business plan would be in play and how this relates to the RAMP process.

Figure 3 shows the four stages of the RAMP process. The key feature of the process that should be highlighted is that

- Activity A, the process launch, is carried out only once and sets the framework for the rest of the process. It parallels the initial stage of the project life-cycle, Opportunity identification.
- Activities B and C parallel the main part of the project life-cycle, from Appraisal through to Operation. They may be carried out on several occasions, the next cycle following from the conclusion of the previous one.

Drawing from the sustainable business case approach outlined in the previous section, the following paragraphs indicate how sustainability factors may be addressed in the RAMP process. (More specific suggestions are set out in the complementary paper on Multi Criteria Analysis.)

Activity A establishes the approach and baseline (RAMP Handbook, chapter 3). This includes the objectives and key parameters of the investment, closely linked to the project. To achieve sustainability targets through the approach outlined in the previous section, the sustainability factors should be thoroughly addressed within the RAMP structure. By implication Activity A should be very closely linked with the development of environmental and social understanding and information within the first phase of the project. In particular it should incorporate

- clear definition of how environmental and social factors are to be treated
- a listing of environmental and social factors, described as comprehensively as possible
- environmental and social objectives
- baseline statistics, assumptions and other information on environmental and social factors.

These would be developed in parallel with other parts of the RAMP process launch, integral with them in some respects.

Activity B is the review of risks. A full review would be undertaken of all risks, including environmental and social ones, in parallel with the Appraisal stage of the project life-cycle. This should be closely related to the appraisal processes, especially in terms of the objectives, criteria, design and funding. This would

obviously reflect environmental and social aspects incorporated into the main project appraisal. It is important for this stage and the remainder of the RAMP process that the principles of risk in the environmental and social field are clearly established.

The RAMP process focuses on quantification of risks, and it is essential to identify where environmental and social factors are risks and where they are not. Those environmental and social factors which are incorporated fully in the project are not of themselves risks. This can be illustrated by the examples outlined earlier. If the project as fully designed and appraised remains within the noise levels adopted as a target in the MCA and misses the urban area agreed as 'no-go', then these form sustainability goals that have been achieved. The risks, as in any aspect, would be direct failure to achieve targets or consequent losses from extra resources needed to meet them. Thus, to continue the examples, the risks to be assessed relate to the noise target not being achieved after all, leading to various social and probably financial consequences, and to a much higher costs for the design to avoid the sensitive urban area.

Thus the remainder to the RAMP process, consisting of Activities B and C at key stages of the project life cycle, would follow the approach set out in the RAMP handbook, as shown in Figure 3. Environmental and social factors would form elements of the many risks to be reviewed at each cycle of the RAMP process. The effectiveness of this will reflect the thoroughness of the process launch (Activity A) and that is closely tied to the effectiveness with which environmental and social factors are incorporated within the business plan for the project in the first place. (These aspects are spelt out in the complementary paper on Multi Criteria Analysis.)

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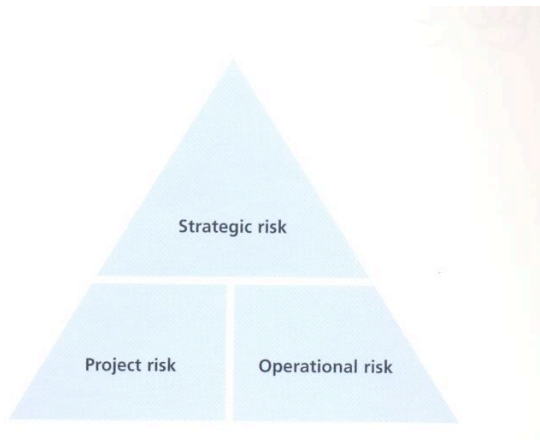
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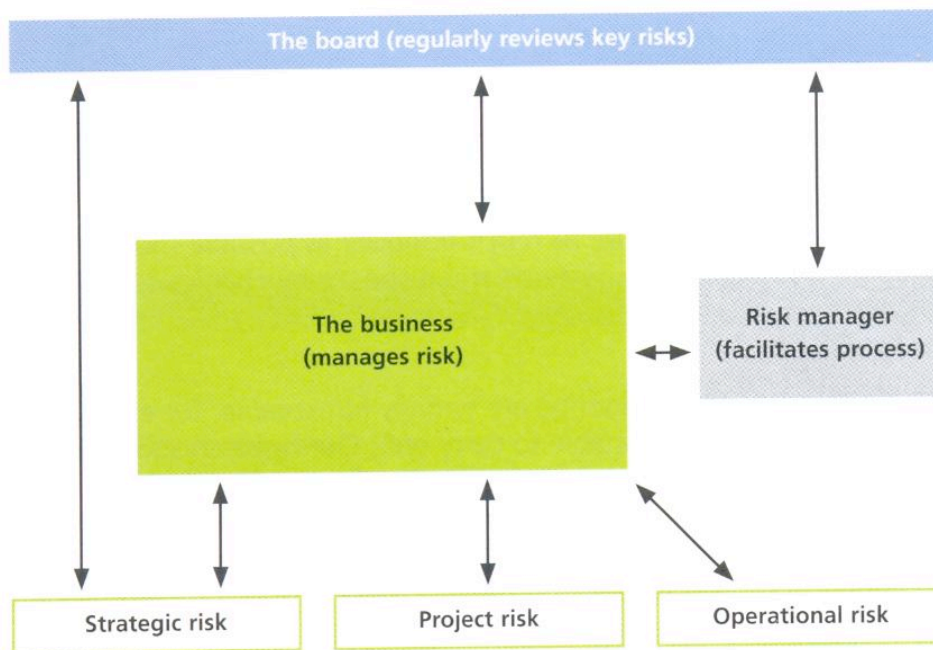
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Figure 1: Principal categories of risk

Source: The STRATrisk handbook

Figure 2: The holistic management of enterprise risk

Source: The STRATrisk handbook
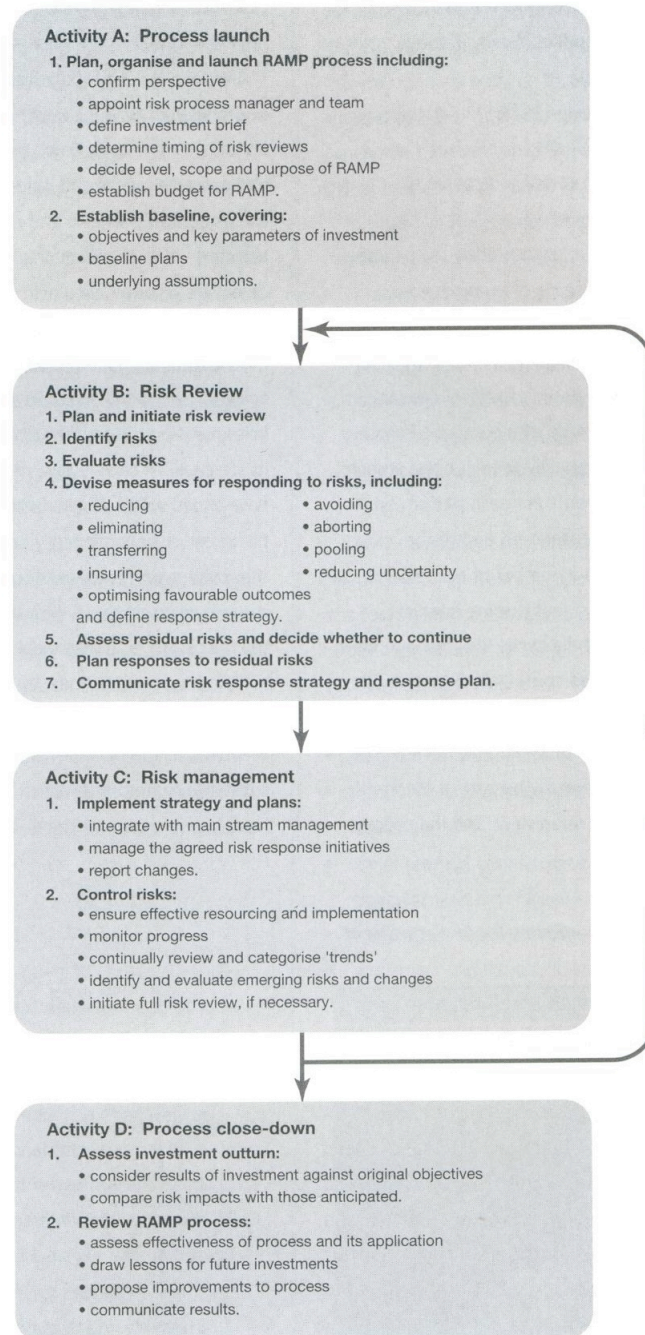
Figure 3: The RAMP process

Activity A: Process launch

1. Plan, organise and launch RAMP process including:
   - confirm perspective
   - appoint risk process manager and team
   - define investment brief
   - determine timing of risk reviews
   - decide level, scope and purpose of RAMP
   - establish budget for RAMP.
2. Establish baseline, covering:
   - objectives and key parameters of investment
   - baseline plans
   - underlying assumptions.

Activity B: Risk Review

1. Plan and initiate risk review
2. Identify risks
3. Evaluate risks
4. Devise measures for responding to risks, including:
   - reducing
   - eliminating
   - transferring
   - insuring
   - optimising favourable outcomes

   - avoiding
   - aborting
   - pooling
   - reducing uncertainty

   and define response strategy.
5. Assess residual risks and decide whether to continue
6. Plan responses to residual risks
7. Communicate risk response strategy and response plan.

Activity C: Risk management

1. Implement strategy and plans:
   - integrate with main stream management
   - manage the agreed risk response initiatives
   - report changes.
2. Control risks:
   - ensure effective resourcing and implementation
   - monitor progress
   - continually review and categorise 'trends'
   - identify and evaluate emerging risks and changes
   - initiate full risk review, if necessary.

Activity D: Process close-down

1. Assess investment outturn:
   - consider results of investment against original objectives
   - compare risk impacts with those anticipated.
2. Review RAMP process:
   - assess effectiveness of process and its application
   - draw lessons for future investments
   - propose improvements to process
   - communicate results.

Figure 4. RAMP process

Source: The RAMP handbook

Table 1: Sustainability within the investment life-cycle

Investment stage / Objectives	Principal activities	Key parameters	Incorporating sustainability	RAMP process
Opportunity identification To identify opportunity and decide whether it is worthwhile conducting a full appraisal	Identify business need Define investment opportunity Make initial assessment Decide whether to proceed with appraisal	Broad estimate of capital cost and cash flows Cost appraisal	**Define context for sustainability factors** **Establish stakeholder engagement** **Develop environmental and social objectives & criteria** **Initial appraisal of project through Multi Criteria Assessment format**	Preliminary review
Appraisal To decide whether the investment should be made	Define investment objectives, scope and requirements Define project structure and strategy Develop business case Identify funding options Conduct feasibility study Decide (in principle) whether to proceed with investment	Refined estimates of capital cost and cash flows Cost of investment planning phase	**Continue stakeholder engagement** **Further develop environmental and social objectives & criteria** **Full appraisal of project through Multi Criteria Assessment format**	Full risk review
Investment planning To prepare for effective implementation of the project	Procure funding Obtain planning consents Preliminary design work Compile project implementation plan Place advance contracts (e.g. site preparation) Make final decision to proceed with investment	Financing cost Refined estimates of capital cost and cash flows	**Ensure that sustainability goals and criteria are embedded firmly in the financing and procurement processes**	Risk review (priori to final decision)
Asset creation To design, construct and commission the asset, and prepare for operation	Mobilise the project team Detailed planning and design Procurement / tendering Construction Testing, commissioning and hand-over Ensure safety Prepare for operation	Project objectives: - scope - performance / quality - timing - capital cost	**Ensure that achievement of sustainability goals and criteria are firmly embedded in construction and preparation**	Risk reviews (during or towards end of each activity) and risk management between risk reviews
Operation	Operate the service	Operating cost	**Manage and review**	Risk reviews

To operate the asset to obtain optimum benefits for sponsor and other principal stakeholders (including investors and customers)	Derive revenue and other benefits Maintain and renew the asset	Maintenance cost Cost of renewals Revenue Non-revenue benefits	**achievement of sustainability goals and criteria in operation**	(periodically)
Close-down To complete investment, dispose of asset and related business, and review its success	Sale, transfer, decommissioning or termination of asset and related business Post-investment review	Decommissioning cost Cost of staff redundancies Disposal cost Resale or residual value	**Review achievement of sustainability goals and criteria from project**	Final risk review and RAMP close-down

Based on RAMP Handbook Table 1