

Quantifying Sustainability in the Aftermath of Natural Disasters

Driving and benchmarking sustainable approaches to the recovery and reconstruction process





What is QSAND?

QSAND (Quantifying Sustainability in the Aftermath of Natural Disasters) is a self-assessment tool to promote and inform sustainable approaches to relief, recovery and reconstruction after a natural disaster. Its key objectives are:

- To guide and inform the decision-making process in a disaster-affected community, promoting more sustainable approaches to shelter and settlement activities.
- To provide a coordinated framework for identifying and, where relevant, assessing the sustainability of solutions in the relief, recovery and reconstruction of disaster-affected communities.

Benefits of using the tool include:

- Active consideration and application of sustainability approaches throughout the process from the early recovery through to reconstruction.
- Bench-marked sustainability outcomes for the project or programme
- Performance information on sustainability issues targeted by the project or programme
- Embedding sustainability through the life cycle of the development

Benefits of using the tool continued:

- Collation of data for the on-going monitoring of the affected community and its recovery

How does QSAND define sustainability?

*'Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future.'*¹

The QSAND tool uses three pillars of sustainability as the basis of defining sustainable development. (See Figure 1)²

These three dimensions represent the balanced integration of social and environmental objectives.

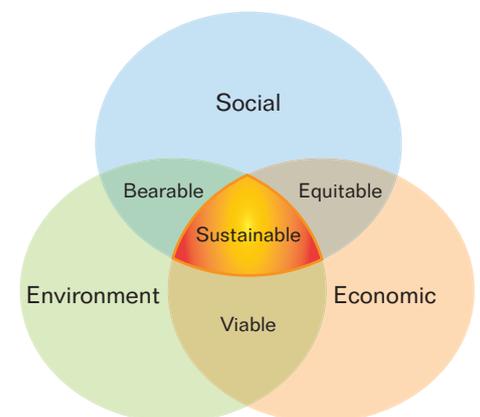


Figure 1 How the three dimensions of sustainability influence each other (Adams, W.M. (2006))

¹ Our common future, United Nations, 1987.

² "The Future of Sustainability: Re-thinking Environment and Development in the Twenty-first Century." Report of the IUCN Renowned Thinkers Meeting, 29–31 January (2006).



How does it work?

The QSAND tool is organised into eight categories within which sustainability issues relating to the reconstruction of a sustainable built environment are assessed.

These categories are shown in Figure 2 (right).

The issues within each category are listed in Table 1. This list includes a set of cross-cutting issues, which can help to achieve enhanced benefit in each of these categories.

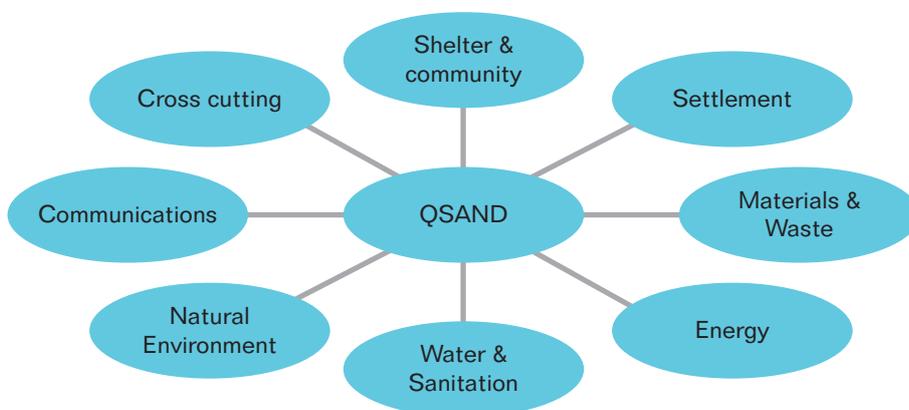


Figure 2 Sustainability issues relating to the reconstruction of a sustainable built environment

Table 1

Shelter and Community	Settlement	Material and Waste
Privacy	Site Selection	Post Disaster Waste Management
Internal Environment	Security of Tenure	Construction Waste Management
Community Sensitive Design	Spatial Planning	Operational Waste Management
Construction approaches	Infrastructure	Material Properties/Specification
		Material Sourcing
Energy	Water and Sanitation	Natural Environment
Energy Demand and Supply	Water Demand and Supply	Human Relationship to Ecosystem Services
Energy Consumption	Water Quality	Ecological Protection
	Sanitation	Ecological Rehabilitation and Restoration
Communications	Cross – Cutting Issues	
Telecommunication	Participation	Community Ownership and Sustainable Management
	Capability and Skills	Livelihoods
	Security and Safety	Resilience
	Economic Viability	Access and Non-discrimination

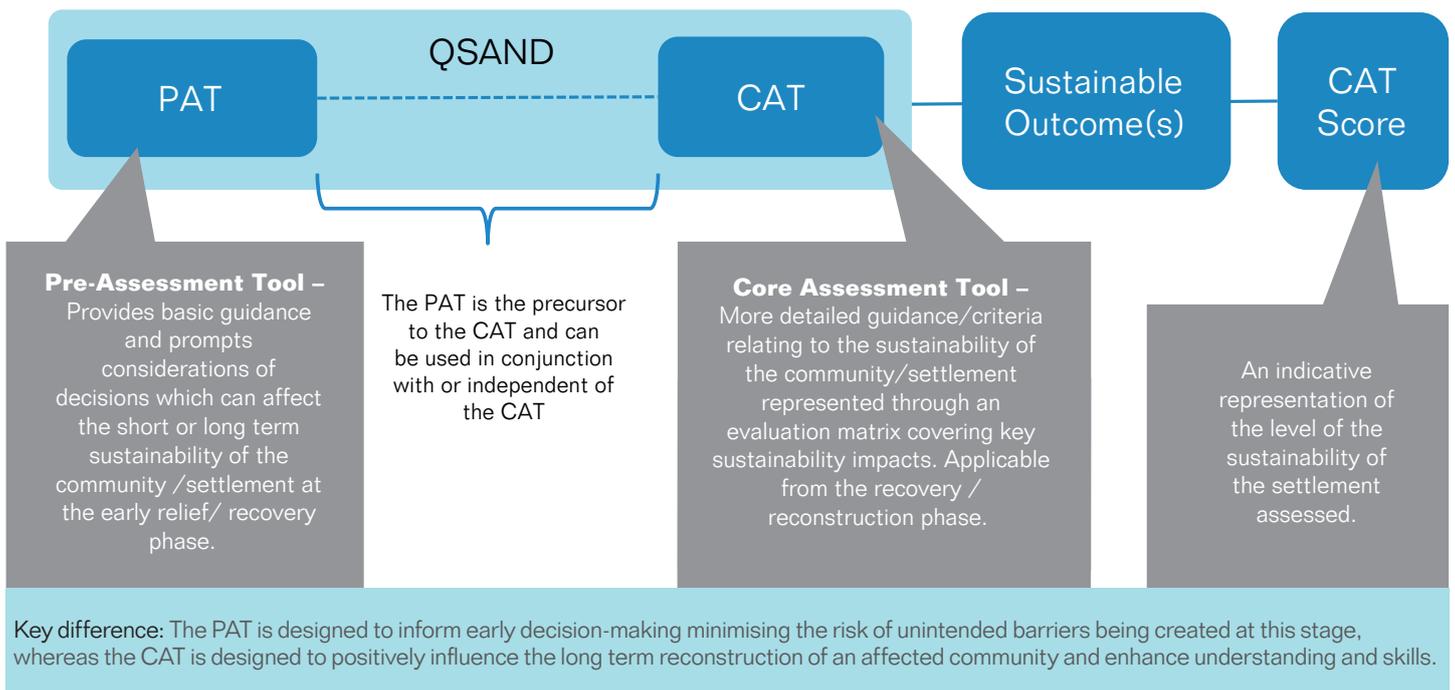


Figure 3 Overall structure of the QSAND tool

Within QSAND the Pre-Assessment Tool (PAT) is used during the emergency relief and early recovery phases of a project or programme. It is a precursor to (but can also be used independently of) the Core Assessment Tool (CAT). The PAT does not seek to assess or quantify sustainability as this would not be appropriate at this stage but aims to:

- Act as a quick reference guide to apply sustainability in the aftermath of a natural disaster.
- Help prevent decisions being made during the emergency relief/early recovery stages which may lead to negative long term impacts during the recovery/reconstruction phase.

The CAT is used during the recovery and reconstruction phase. It makes up the main part of QSAND and contains detailed guidance and performance related project characteristics aimed at supporting the establishment of a sustainable built environment. The aims of the CAT are to:

- Act as a guide for considering and applying sustainability in the aftermath of a natural disaster in medium to long term reconstruction programmes.
- Support the decision-making process by providing a coordinated framework for specifying and assessing sustainability solutions during the recovery and reconstruction of disaster affected communities
- Provide a simple measure (and where relevant quantification) of the sustainability options and approaches applied.

The issues considered within the PAT correspond with the more detailed criteria of the CAT, which will ultimately aim to help guide the user towards more sustainable outcomes.



Quantifying performance

A unique feature of the Core Assessment Tool (CAT) is its ability to allow the user to define an overall assessment performance score in order to quantify the sustainability of a given project/programme.

Figure 4 illustrates the distribution of projects and the intention to improve sustainability standards over time through the application of QSAND.

Criteria within assessment issues are organised under a series of performance levels. These are summarised as follows:

- **Baseline evaluation (PL 0)** – assessment, evaluation, research, information collation
- **Performance level 1 (PL1)** – planning, basic implementation, risk avoidance
- **Performance level 2 (PL2)** – planning, implementation, low/ reasonable cost actions
- **Performance level 3 (PL3)** – exemplar performance, investing for future benefits.

The relevance of the issue to the project/programme being assessed, the performance level targeted and the maximum score achievable all factor into the final % score and rating achieved.

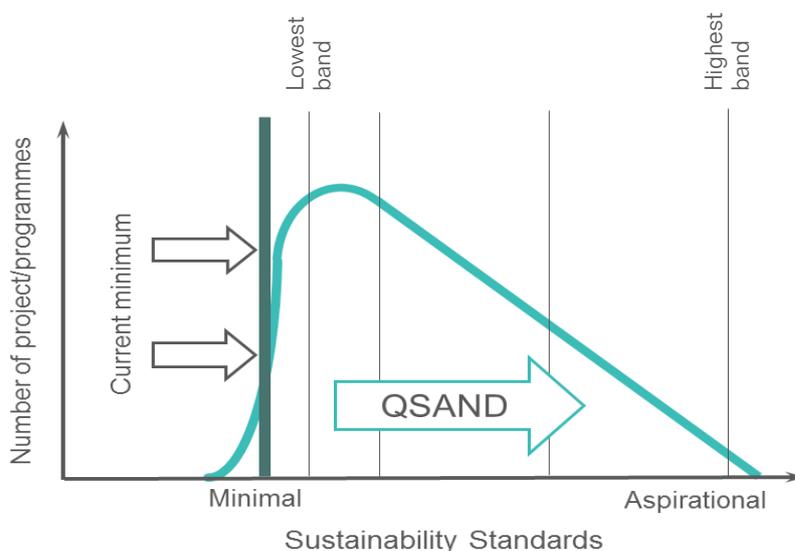


Figure 4 Quantifying performance and driving standards

Table 2 QSAND CAT rating and associated % score

CAT rating	Percentage of maximum score achieved
Excellent	90
Very Good	65
Good	45
Minimum	30

Further information on the scoring process is provided in the QSAND tool guidance document available at www.QSAND.org



Application over the disaster timeline

Adapted from Green Reconstruction and Recovery Tool Kit for Humanitarian Aid, Figure 5 illustrates the application of the QSAND Pre-Assessment Tool (PAT) and Core Assessment Tool (CAT) within the disaster timeline.

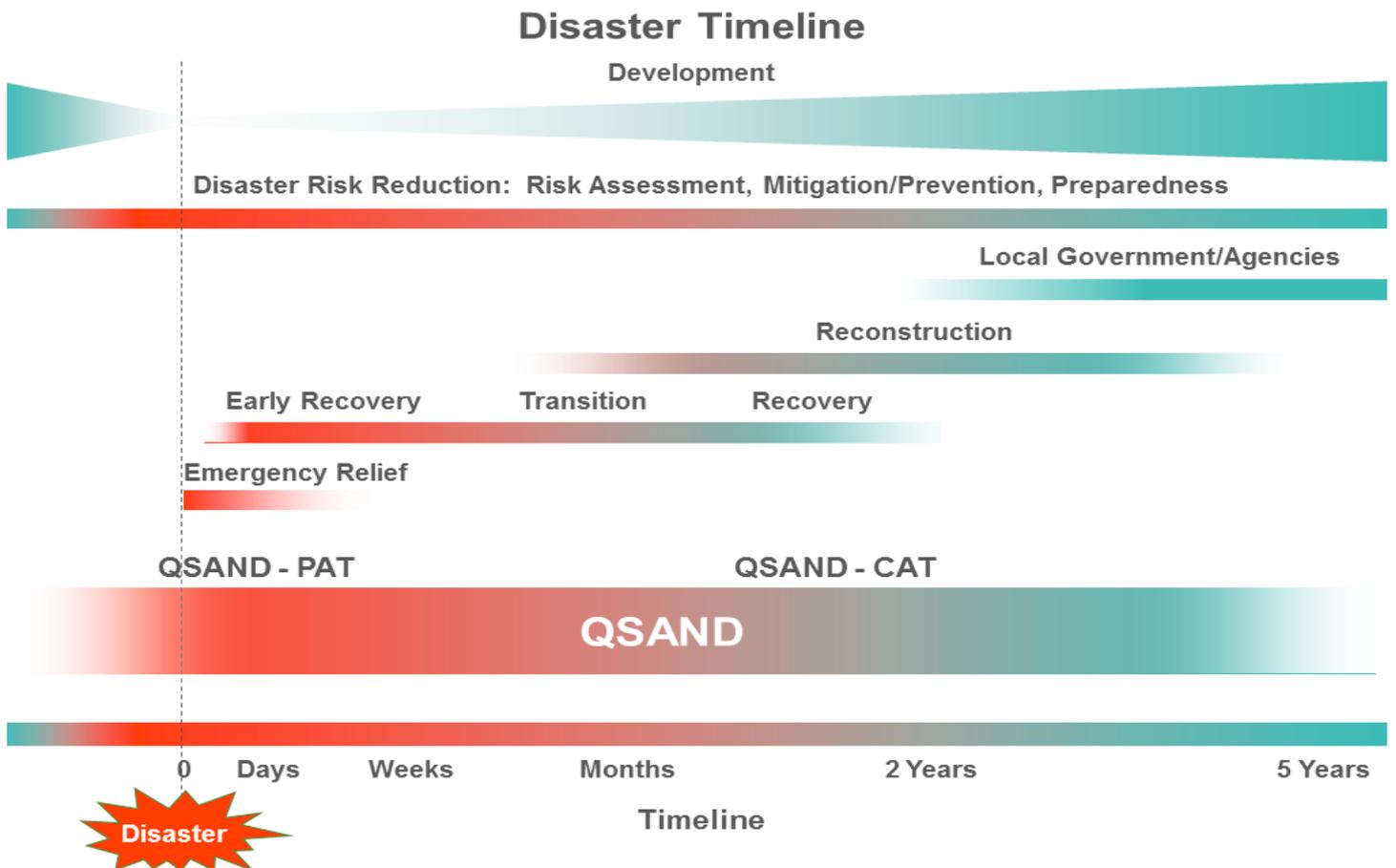


Figure 5 Adapted from the Green Reconstruction and Recovery Tool Kit for Humanitarian Aid



How was QSAND developed?

Consultation and feedback from relevant stakeholders was an important part of development of the QSAND. This took place in various ways. One was via a Project Consultation Group (PCG) to guide and advise on development. The PCG comprised key stakeholders in the humanitarian sector including UN-HABITAT, Habitat for Humanity, WWF US, Norwegian Refugee Council, IFRC and others.

QSAND was also subject to a Peer Review Group (PRG). The PRG consisted of representatives from a range of organisations and potential users of QSAND including: Building and Social Housing Foundation, Architecture for Humanity, Practical Action, SKAT (Swiss Resource Centre and Consultancies for Development), The United Nations Office for Disaster Risk Reduction, and RedR UK. The purpose of this group was to review and provide feedback on the tool to ensure it is relevant, appropriate, user friendly and where possible maximises the opportunities for building in sustainable solutions for the long term.

Development of QSAND drew on the features of the BRE Global Ltd BREEAM standard.

BREEAM®

How can QSAND be accessed?

QSAND is publicly available via a dedicated website (www.QSAND.org) which includes:

- the QSAND manual
- a short information video on QSAND
- an on-line e-learning tutorial
- the CAT assessment and scoring tool.

QSAND aims to promote information dissemination and learning between users and practitioners to ensure lessons learned inform future relief, recovery and reconstruction activities.

Who should use QSAND?

1. District/ Province/Field level (eg field project managers/practitioners/regulatory officials). Those directly involved in the development, implementation and oversight of activities, using QSAND to inform the programme design and regularly monitoring compliance against the criteria.
2. National/Regional/Headquarter level (eg, desk officer/technical advisors/ programme managers/national or provincial government officials). Those who are primarily desk based and not involved in day to day implementation, using QSAND to track overall progress against the key sustainability criteria identified.
3. Global/International Stakeholder/Donor level (eg, international organisations/ donors and finance institutions/policy analysts). Those involved in overseeing or advising on the overall response and longer term development needs, using QSAND to track the trends in sustainable recovery and reconstruction.

QSAND is now available for use

The QSAND tool was released in May 2014. It is now accessible for aid agencies, donor organisations and other interested parties to download and use. We encourage you to click the link and see how the tool can support and improve your efforts to recreate a sustainable build environment for the disaster affected community. And be more accountable to beneficiaries and donors.



Key Development Partners

Financial support for development the QSAND tool was provided by the BRE Trust and IFRC.

IFRC

The International Federation of the Red Cross and Red Crescent Societies (IFRC) is the world's largest humanitarian organization, with 189 member National Societies. The IFRC carries out relief operations to assist victims of disasters, and combines this with development work to strengthen the capacities of its member National Societies.

The IFRC's work focuses on four core areas:

- Promoting humanitarian values
- Disaster response
- Disaster preparedness
- Health and community care.

As a part of its commitment to sustainable development IFRC commissioned development of the QSAND tool to promote sustainable shelter and settlement activities in the aftermath of natural disasters.

www.ifrc.org

BRE Trust

BRE Trust is the largest UK charity dedicated to research and education in the built environment. It was set up to advance knowledge, innovation and communication for public benefit. The Trust uses all profits made by the BRE Group to fund new research and education programmes and to promote its charitable objectives.

www.bre.co.uk/bretrust

BRE Group

BRE is a world leading building science centre that generates new knowledge through research. This is used to create products, tools and standards that drive positive change across the built environment. BRE helps its government and private sector clients meet the significant environmental, social and economic challenges they faces in delivering homes, buildings and communities.

BRE is owned by the BRE Trust, a registered charity. The Trust uses the profits made by the BRE companies to fund research and education that advances knowledge of the built environment.

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- BREEAM the world's leading environmental assessment method for buildings, sets the standard for best practice in sustainable design and has become the de-facto measure of a building's environmental performance.

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