SuRF
SUSTAINABLE REMEDIATION FORUM UK

SuRF-UK:
Annex 1: “Indicators”

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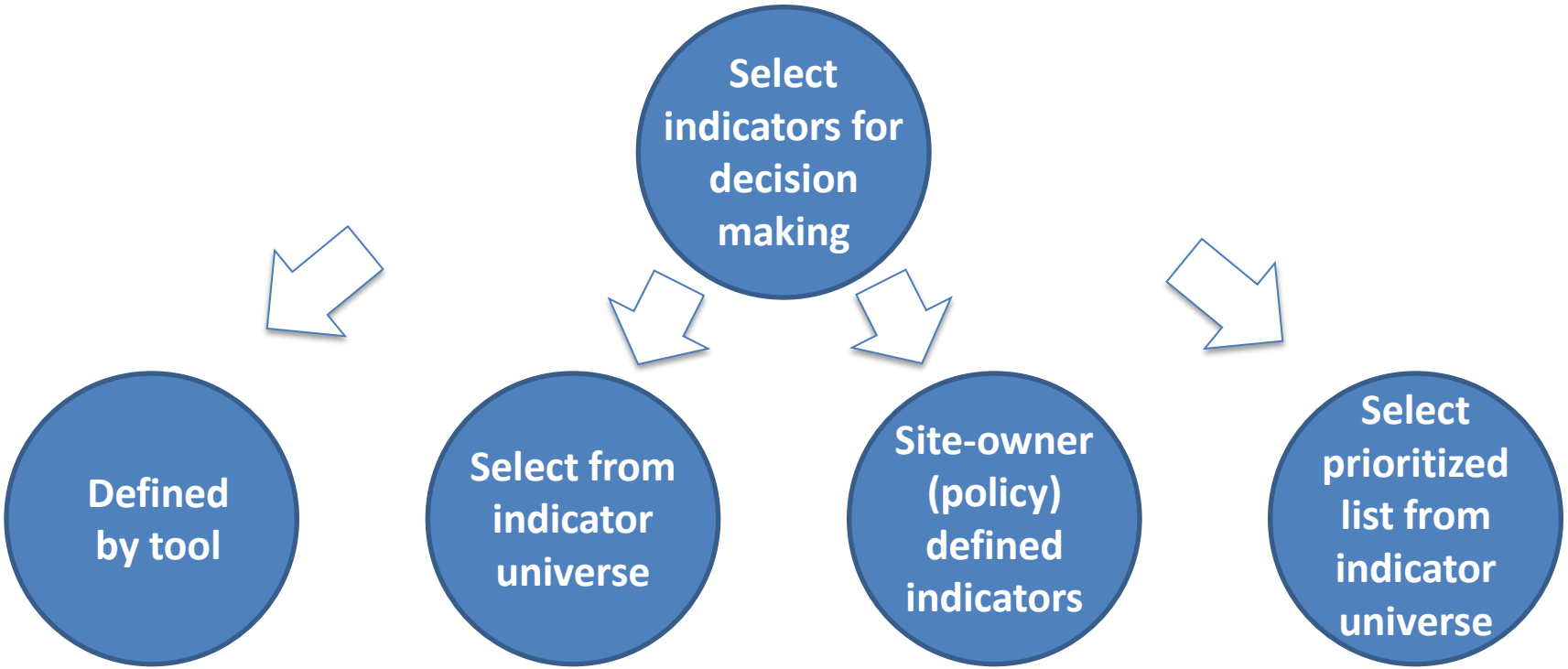
What do we mean by “indicator”

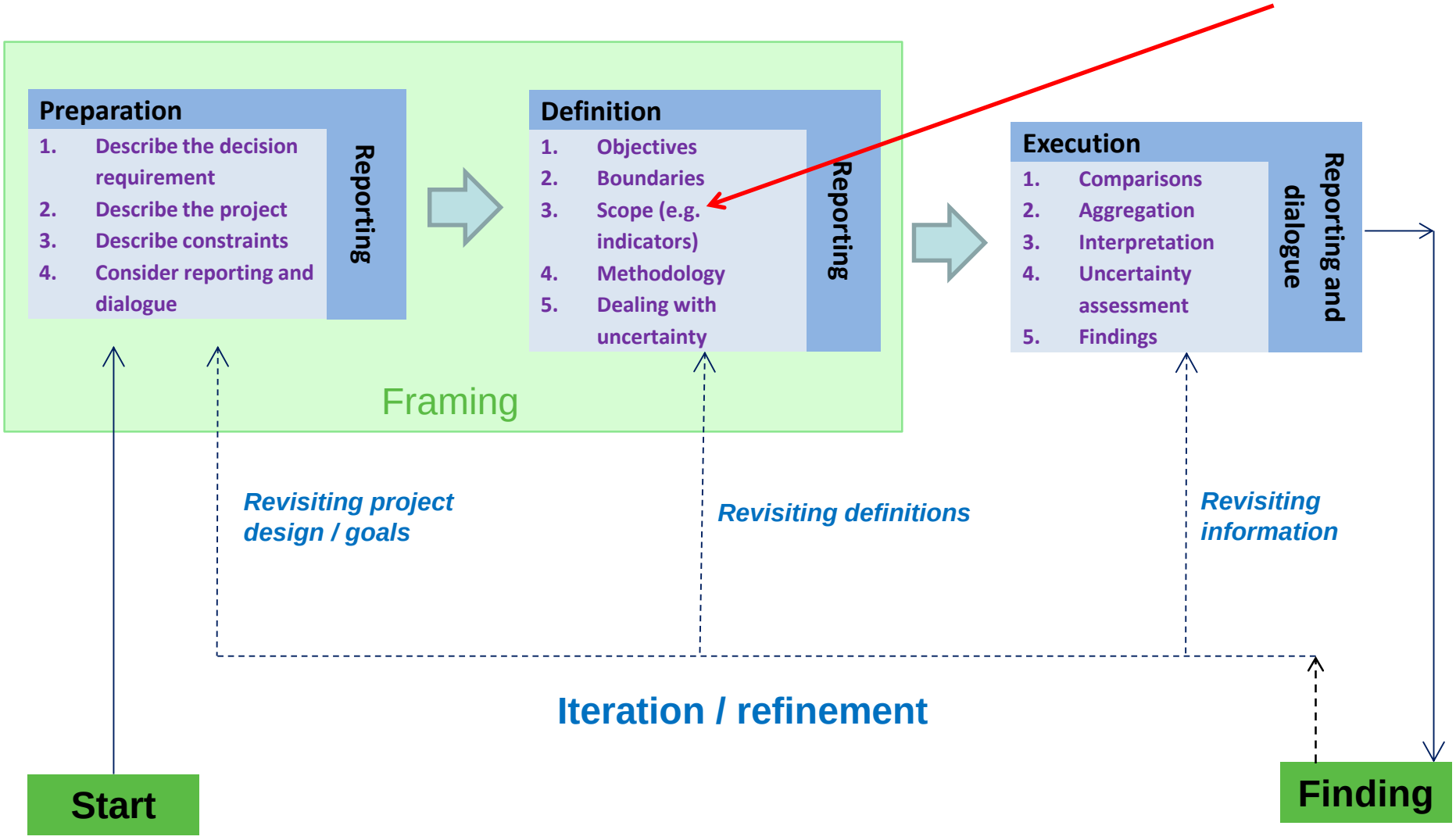
- Assessment of sustainability includes:
  - The methods and techniques used for sustainability assessment (the how?)
  - and the factors that need to be considered (the what?)
- Sustainability encompasses a wide range of considerations which vary for each project / site
- An “indicator” describes an observable characteristic for a specific factor that can be compared (options / time)
- They can be used as:
  - Criteria in decision making
  - Performance indicators in monitoring

Indicator identification

- Indicators should be:
  - representative of sustainability interests
  - meaningful for decision-making
  - 'assessable' (cf. measureable)



Scope and the sustainability assessment process



The scope of “sustainability”

- I.e. describe the range of sustainability considerations to be included in the assessment (benchmark against the framework)

Environment	Social	Economic
Emissions to Air	Human health & safety	Direct economic costs & benefits
Soil and ground conditions	Ethics & equality	Indirect economic costs & benefits
Groundwater & surface water	Neighbourhoods & locality	Employment & employment capital
Ecology	Communities & community involvement	Induced economic costs & benefits
Natural resources & waste	Uncertainty & evidence	Project lifespan & flexibility

Describe the level of detail being used

- The level of detail needed depends on what is most likely to yield a robust and transparent sustainability assessment that internal and external stakeholders will support.
- The diagram below illustrates increasing levels of detail

Criteria	**Element**	e.g. environment
	⇩	
	Headline category	e.g. emissions to air
	⇩	
	Individual indicator	e.g. Particulates (especially PM2.5 and PM10)

Describe how criteria were included / excluded

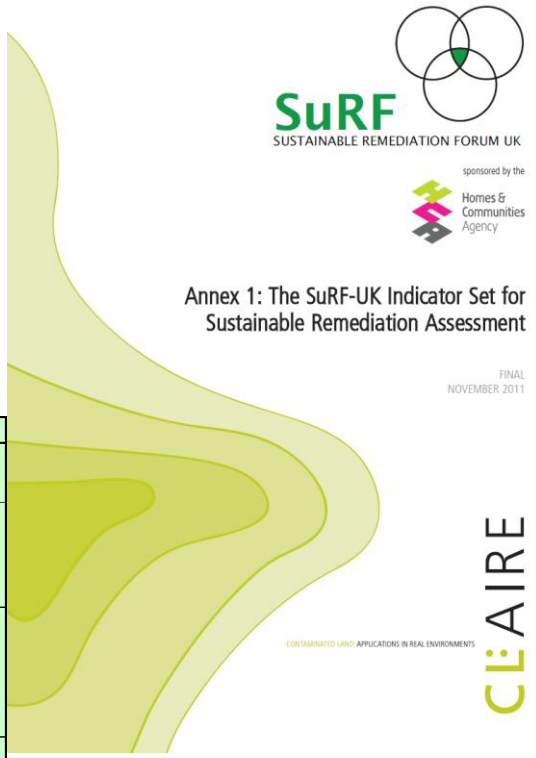
- Record for each criterion why it was included / excluded in the scope of sustainability
  - *Positive exclusion*, only exclude a criterion when there is a clear reason to do so. (More robust but more complex as more criteria may be considered.)
  - *Positive inclusion*, select criteria only when there is a clear reason to do so. (This is less robust, but simpler .)

Guidance available from SuRF-UK

Category		Issues that you may need to consider	Cross-reference to other Indicators
SOC 1	Human Health & Safety	• Risk management performance of the project (long term) in terms of delivery of mitigation of unacceptable human health risks • Risk management performance of project (short term) in terms of duration of remediation works, incl. consideration of: ○ Site workers, site neighbours and the public ○ Remediation works and ancillary operations (incl. process emissions such as bioaerosols, allergens, PM10, impacts from operating machinery/traffic movements, excavations, etc) • Consider both chronic and acute risks	**ENV 1** for issues related to e.g. dust which do not relate to effect on humans **SOC 3** for issues affecting humans (not related to health concerns e.g. amenity)
SOC 2	Ethics & Equality	• How is social justice and/or equality addressed? • Is spirit of 'polluter pays principle' upheld with regard to distribution of impacts/benefits? • Are the impacts/benefits of works unreasonably disproportionate to particular groups? • What is the duration of remedial works and are there issues of intergenerational equity (e.g. avoidable transfer of contamination impacts to future generations)? • Are the businesses involved operating ethically (e.g. sustainability of supply chains for inputs to remediation work, lack of transparency in procurement processes)?	None
SOC 3	Neighbourhood & Locality		
SOC 4	Communities & Community Involvement		
SOC 5	Uncertainty & Evidence		

Category		Issues that you may need to consider	Cross-reference to other Indicators
ECON 1	Direct Economic Costs & Benefits	• Direct financial costs and benefits of remediation for organisation • Consequences of capital and operation costs, and sensitivity to alteration e.g.: ○ Costs associated with the works (incl. operation and any ongoing monitoring, regulator costs, planning, permits licences) ○ Uplift in site value to facilitate future development or divestment ○ Liability discharge	None
ECON 2	Indirect Economic Costs & Benefits	• Long term or indirect costs and benefits, e.g.: ○ Financing debt ○ Allocation of financial resources internally ○ Changes in site/local land/property values ○ Fines and punitive damages (e.g. following legal action, so includes solicitor and technical costs during defence) ○ Financial consequences of impact on corporate reputation ○ Consequences of an area's economic performance ○ Tax implications	**SOC 4** for compliance with local policies/spatial planning objectives
ECON 3	Employment & Employment Capital	• Job creation • Employment levels (short and long term)	None
ECON 4	Induced Economic Costs & Benefits		
ECON 5	Project Lifespan & Flexibility		

Category		Issues that you may need to consider	Cross-reference to other Indicators
ENV 1	Air	• Emissions that may affect climate change or air quality, or considerations that may allow overall reduction in impact on climate change, e.g.: ○ Greenhouse gases (e.g. CO_2, CH_4, N_2O, O_3, VOCs, ozone depleting substances, etc.) ○ NO_X, SO_X ○ Particulates (especially PM5 and PM10)	**SOC 1** for issues associated with human health **SOC 3** for issues affecting humans (not related to health concerns)
ENV 2	Soil & Ground Conditions	• Changes in physical, chemical, biological soil condition that affects the ecosystem function, goods or services provided by soils (these may be improvements OR deteriorations). May include: ○ Soil quality (chemistry) ○ Water filtration and purification processes (incl. sediment generation or reduction) ○ Soil structure and/or organic matter content or quality ○ Erosion and soil stability (incl. drainage) ○ Geotechnical properties (incl. compaction) ○ Impact/benefits to sites of special geological interest e.g. SSSIs and geoparks	**ENV 4** for Ecology within this ecosystem
ENV 3	Groundwater & Surface Water	• Changes in the release of contaminants (including nutrients), dissolved organic carbon and/or silt/particulates (these may be improvements OR deteriorations), affecting: ○ Suitability of water for potable or other uses (based on long-term protection of available water resources) ○ Legally binding environmental objectives e.g. Water Framework Directive ○ Biological function (aquatic ecosystems) and chemical function ○ Mobilisation of dissolved substances ○ Marine, brackish/transitional, freshwater waters • Effects/benefits of water abstraction resulting from the remediation process or its outcome, e.g. Changing river levels or water tables • Issues associated with flooding (e.g. increase risk of, or protection from, flooding	**ENV 4** for Ecology within this ecosystem **ENV 5** for any water abstraction use or disposal issues
ENV 4	Ecology	• Effects on ecology (excluding ecological impacts considered in ENV 2 and 3), including effects on the following (these may be benefits OR impacts): ○ Flora, fauna and food chains (esp. protected species, biodiversity, SSSIs, alien species) ○ Significant changes in ecological community structure or function ○ Effects of disturbance (e.g., light, noise and vibration) on ecology ○ Use of equipment that affects/protects fauna (e.g. bird/bat flight, or animal migration)	**ENV 2** & **ENV 3** for soil and aquatic ecosystems **SOC 3** for impacts of light, noise & vibration on humans
ENV 5	Natural Resources & Waste	• Impacts/benefits for: ○ Land and waste resources ○ Use of primary resources and substitution of primary resources within the project or external to it (including raw and recycled aggregates) ○ Use of energy/fuels taking into account their type/origin and the possibility of generating renewable energy by the project ○ Handling of materials on-site, off-site and waste disposal resources ○ Water abstraction, use and disposal	**ENV 3** for issues associated with Groundwater and Surface Water not linked to abstraction use or disposal



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Thank you.
Any questions?

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