



# Introduction of Sustainable Remediation WS

Tetsuo Yasutaka

(National Institute of Advanced Industrial Science and Technology  
and chair of SuRF-JAPAN)

# Purpose of WS

- Share the knowledge and experience of soil contamination, decision making and SR between UK, Taiwan and Japan. (UK、台湾、日本の土壌汚染・意思決定、SRに関する知識と経験の共有)
- Consider how to apply the SR concept to our geo-environmental problem. (SRコンセプトを我々が抱える地盤環境問題にどのように適用するのか考える)
- Discuss the possibility of future collaboration between stakeholder and countries. (ステークホルダー、国間の将来的な連携の可能性を探る。)

# What is the Sustainable Remediation

Trend of the approach for soil contamination  
土壌汚染対策のアプローチの変遷

Concept for appropriate decision making  
持続可能性をキーワードにして  
ステークホルダーの意見を取り入れ、より適切な意思決定を目指す考え方



**Sustainable based approach**  
サステイナブル アプローチ

**Sustainable Remediation**  
**Green Remediation**

サイトごとのリスクを評価し、措置の必要性、目標を決める考え方



**Risk based approach**  
リスクベース アプローチ

**Technology based approach**  
基準値/技術ベース アプローチ



# Green Remediation

Reduce the environmental footprint caused by the investigation, remediation and reconstruction.

土壌汚染調査・浄化に伴う環境負荷を低減することを目的とする。

## Sustainable Remediation by SuRF-UK

The practice of demonstrating, in terms of environmental, economic and social indicators, that the benefit of undertaking remediation is greater than its impact and that the optimum remediation solution is selected through the use of a balanced decision-making process.

環境的、経済的および社会的指標の観点から、①土壌汚染対策の効果がその影響よりも大きく、②最適な対策がバランスの取れた意思決定プロセスにより選択されている、ことの実践。

# International approach 国際的な取り組み

## The International Sustainable Remediation Alliance (ISRA)



**ISO/TC 190 Soil quality SC7 WG12  
ISO 18504:2017**

### **ASTM Standard**

E2893 – 13 Standard Guide for Greener Cleanups

E2876 – 13 Standard Guide for Integrating Sustainable Objectives into Cleanup

# SuRF-JAPAN



SuRF-JAPAN was established in June 2016.

## Member

### Main Member:

- 14 Private Company (30 person)
- 8 personal members
  - Consulting Company
  - Construction Company
  - Real estate evaluation Com.
  - Industry
- 1 local government
  - Tokyo metropolitan gov.

Scientific advisory board  
4 person from Univ.

### Observer

- MOE (Ministry of Environment)
- METI (Ministry of Economy, trade and industry)

Secretary:AIST

## Activities

Research Meeting  
2-3 / Year

WG1  
Green  
Remediation WG

WG2  
Sustainable  
Remediation WG

The purpose of SuRF-JAPAN is to discuss the need of sustainable remediation in Japan and establishing necessary framework and tools

# What we need in the future (Personal view)

- Increase of the needs for re-use the slightly contaminated soil and soils with natural contamination as a construction material and other use.
- 基準値をわずかに超えた土壌や自然由来土壌の建設材料としての利活用するニーズの増大。
- Science: Accumulation of the scientific evidence and development the framework including the traceability for indicating safety for re-use.
- 科学: 再利用するための安全性に関する科学的な根拠の積み重ねと、フレームワークの構築。
- Sustainability: Consider the not only the human health risk but also environment, economic and social.
- 持続可能性: ヒト健康リスクだけでなく、環境・経済・社会への影響を考慮
- Further increase of the importance of the “Stake holder involvement” and “Framework” at the “Decision-making process” for remediation.  
**Developing the Sustainable Remediation Framework.**
- 浄化の意思決定におけるステークホルダー関与とフレームワークの重要性のさらなる増加。**SRフレームワークの構築が必要。**