

# OTM-033: Mapping of environmental degradation (change)

## Mapping of environmental degradation (change)

### Challenge

Challenge ID	OTM:033				
1 Title	Mapping of environmental degradation (change)				
2 Theme ID	ON 4.2: Environmental monitoring - Continuous monitoring of changes throughout the lifecycle				
3 Originator of Challenge	Onshore: OTM				
4 Challenge Reviewer / initiator	PEMEX, Statoil, Shell, Eni, Sasol, Exxon				
<b>General description</b>					
5 What is the nature of the challenge? (What is not adequately addressed at present?)	<p>Site emissions can lead to environmental degradation, which is not always easy to monitor. Degradations can be slow, inconspicuous and not easy to detect. Degradation can have long term consequences for the ecosystem.</p> <p>Obtaining continuous, unbiased and consistent environmental data is often challenging, especially when the data is multi-temporal.</p> <p>Change mapping is essential in the context of environmental certificates, climate change, etc.</p>				
6 Thematic information requirements	3. Obtain detailed vegetation information, 4. Obtain detailed land-use information, 6. Identify inland water bodies and determine water quality, 7. Determine air quality, 10. Fauna and presence and patterns,				
7 Nature of the challenge - What effect does this challenge have on operations?	<p>Obtaining land cover information and their changes over a large area is time consuming and expensive. The monitoring of inconspicuous changes can be particularly complicated.</p> <p>We must ground survey parts of the area, but this can lead to bias or unrepr</p>				
8 What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	Base maps (which are often inaccurate). This can be complemented by aerial surveys, but the area covered is often too small.				
9 What kind of solution do you envisage could address this challenge?	Very high to medium resolution land cover products based on EO data, as well as automated change detection methods for large scale and ongoing monitoring activities. Resolution depends on covered area and size of monitoring objective				
10 What is your view on the capability of technology to meet this need? – are you currently using EO tech? If not, why not?	EO could be a useful complimentary technology				
<b>Challenge classification</b>					
11 Lifecycle stage	Pre license	Exp.	Dev.	Prod.	Decom.
Score from impact quantification [1]	0	2	4	4	4
12 Climate classification	NOT CLIMATE SPECIFIC				
13 Geographic context/restrictions	Generic onshore (Unspecified)				
14 Topographic classification / Offshore classification	Generic onshore (Unspecified)				
15 Seasonal variations	Any season				
16 Impact Area	Environmental				
17 Technology Urgency (How quickly does the user need the solution)	Immediately (0-2 years)				
<b>Information requirements</b>					
18 Update frequency	depending on sensor and application				
19 Data Currently used					
20 Spatial resolution					
21 Thematic accuracy	80-90%				
22 Example formats	Standardized geo-spatial formats (e.g. shapefile, geotiff or KML)				
23 Timeliness	within a month				
24 Geographic Extent					
25 Existing standards					

[1] Impact quantification scores: 4 – Critical/ enabling; 3 – Significant/ competitive advantage; 2 – Important but non-essential; 1 – Nice to have; 0 – No impact, need satisfied with existing technology

# Relevant products

## Content by label

There is no content with the specified labels

