THE TROUBLE WITH OIL

It should be the foundation upon which diverse, sustainable economies are built–not an indispensi ble crutch. So why are Gulf states finding change so difficult?

When the prices of oil soared in the 1970s consumers around the world railed against high fuel prices. The Gulf states celebrated: The massive windfall doubled–and even trebled–state revenues Liked this in the pervious draft so reintroduced it. Is this a widely reported stat? Oil, which had represented just seven per cent of world trade in 1970, reached 21 per cent ten years later, a huge redistribution of world income to oil producers, according to the Egyptian economist (and later prime minister) Hazem Beblawi. - is there any way we can take the attribution out. Would have more authority if it were just a widely accepted fact. Can you find support for it from a couple of official sources? it was to be short-lived, as oil prices tumbled in the '80s. This forced governments–which had saved little of the bloated revenues–to aggressively tighten fiscal policy. Saudi Arabia cut capital spending by 98% from peak to trough, says Jason Tuvey, Middle East economist at Capital Economics, leading the '80s to be called the Lost Decade. Again, can we take this out as it would have more authority otherwise?

As oil prices have deflated from the start of the year–dipping dramatically for a second time since the beginning of July–once again the Gulf faces fiscal deficits and spending cuts, which will impact on growth in the non-oil sector. There are some indications that, this time, things are different. High savings will allow most governments to maintain relatively generous spending levels, at least for the medium term; and there are signs that they're willing to wind back costly public spending, most notably the UAE's move in July to end fuel subsidies.

Is the situation really that different though? The region's dependence on oil has is once more in sharp focus. States exporting a single commodity with a volatile price are not masters of their own economic destiny. Broader diversification would help insulate the non-oil economy from price shocks, could provide alternative revenue sources for governments and provide a wider range of private jobs for citizens at a time when youth unemployment in the region is considerable. But though diversification has been a major plank of economic policy for governments since the 1970s, only the UAE–and particularly Dubai–has made significant progress. A survey of opinions among economists, academics and industry professionals yields the view that progress elsewhere in the Gulf has been "slow", "inconsistent," and even "a mirage."

To top it off, the most commonly used measure of diversification–the growth of non-oil sectors in the GDP–may tell us little about it. This metric can be deceptive since the high growth rates witnessed in recent years can be linked to the recycling of oil revenues through the economy, says Fuad Hasanov, an IMF economist based in Washington. That becomes apparent when you compare the economies of Bahrain and Singapore. In both you'll see diverse GDP structures, with a mix of oil and non-oil sectors. But cut to their export structure and the difference is stark: While Singapore has a broad mix–machinery and transport equipment, refined hydrocarbons and manufactured goods–in Bahrain's case 79 per cent of exports are oil, while an additional 16 per cent are metals and aluminium.

Across the Gulf, non-oil exports have grown from £1 to 30 per cent of non-oil GDP across 2000 to 2012, according to IMF figures. But at the same time, export quality and export product diversification have stagnated. Much of the growth has come in capital intensive sectors–fertilisers, chemicals and metals–where investment tends to be state-driven and centrally planned.

Global experience shows that growing non-oil exports in a commodity exporting economy is difficult because oil revenues have a distortive effect on economies. After the Netherlands began exploiting the major Groningen gas field in 1959, its currency rose as did wages, reducing the competitiveness of its export sectors including manufacturing. This became known as the "Dutch Disease."

But with pegged currencies and low wages in the Gulf, the dynamic is different. The recycling of oil money through contracts, subsidies, and public sector employment means that many private firms are able to remain profitable without needing to develop products or services to export. Put simply, there isn't much incentive for diversification to take place.

LOOK AROUND THE GLOBE for diversification success stories and there are only a handful, such as Mexico, Indonesia, and Malaysia, which developed industry clusters before oil exports dropped. Hasanov and his colleague Reda Cherif have co-authored a number of IMF discussion papers on diversification in the Gulf (neither their papers nor their comments represent the official IMF line), and says that preparing the ground early is crucial, since it's not easy to develop a non-oil tradable sector - made up goods and services, typically high

Detección de Derrames de Petróleo Off-Shore

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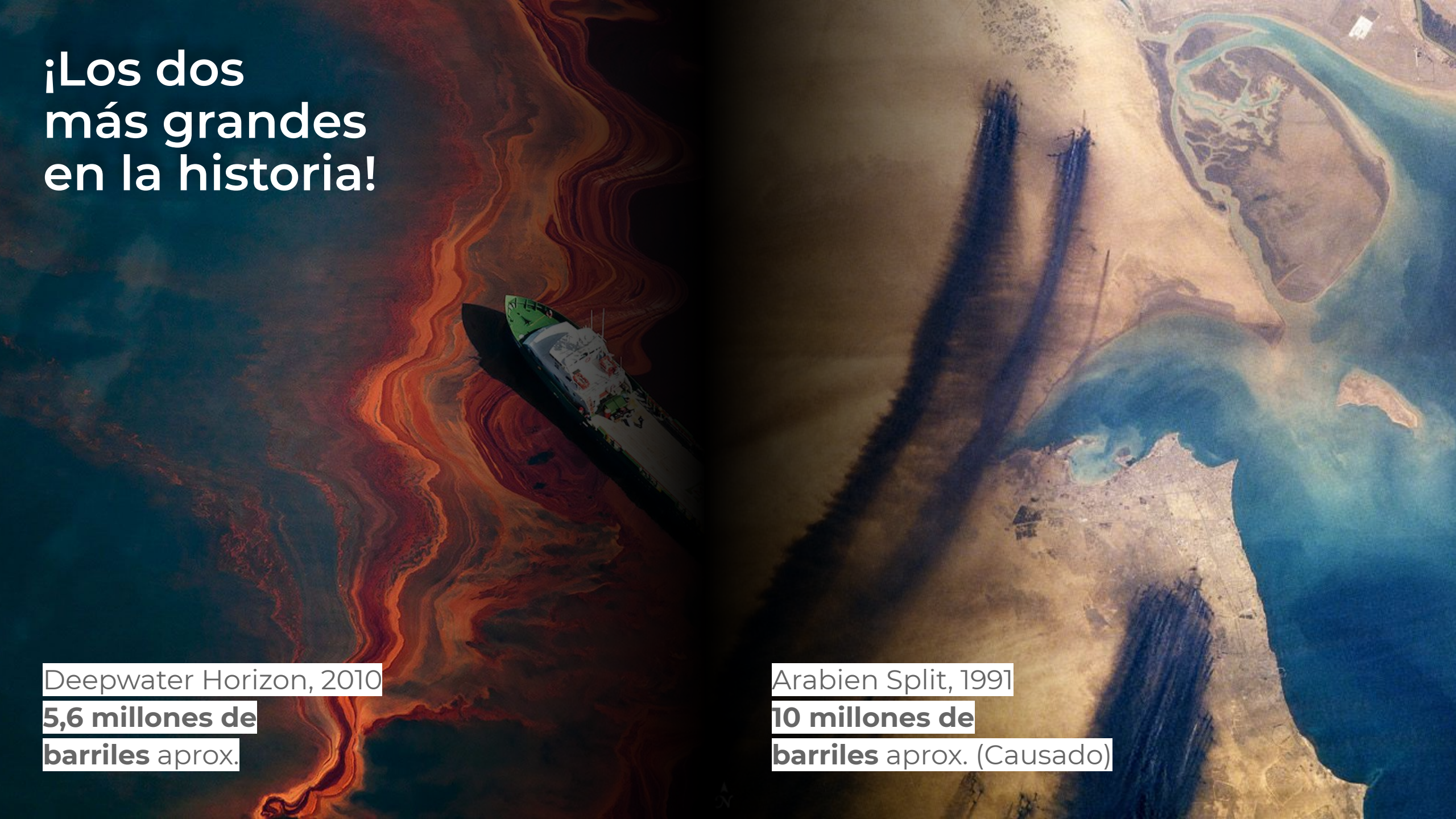
¡Los dos más grandes en la historia!

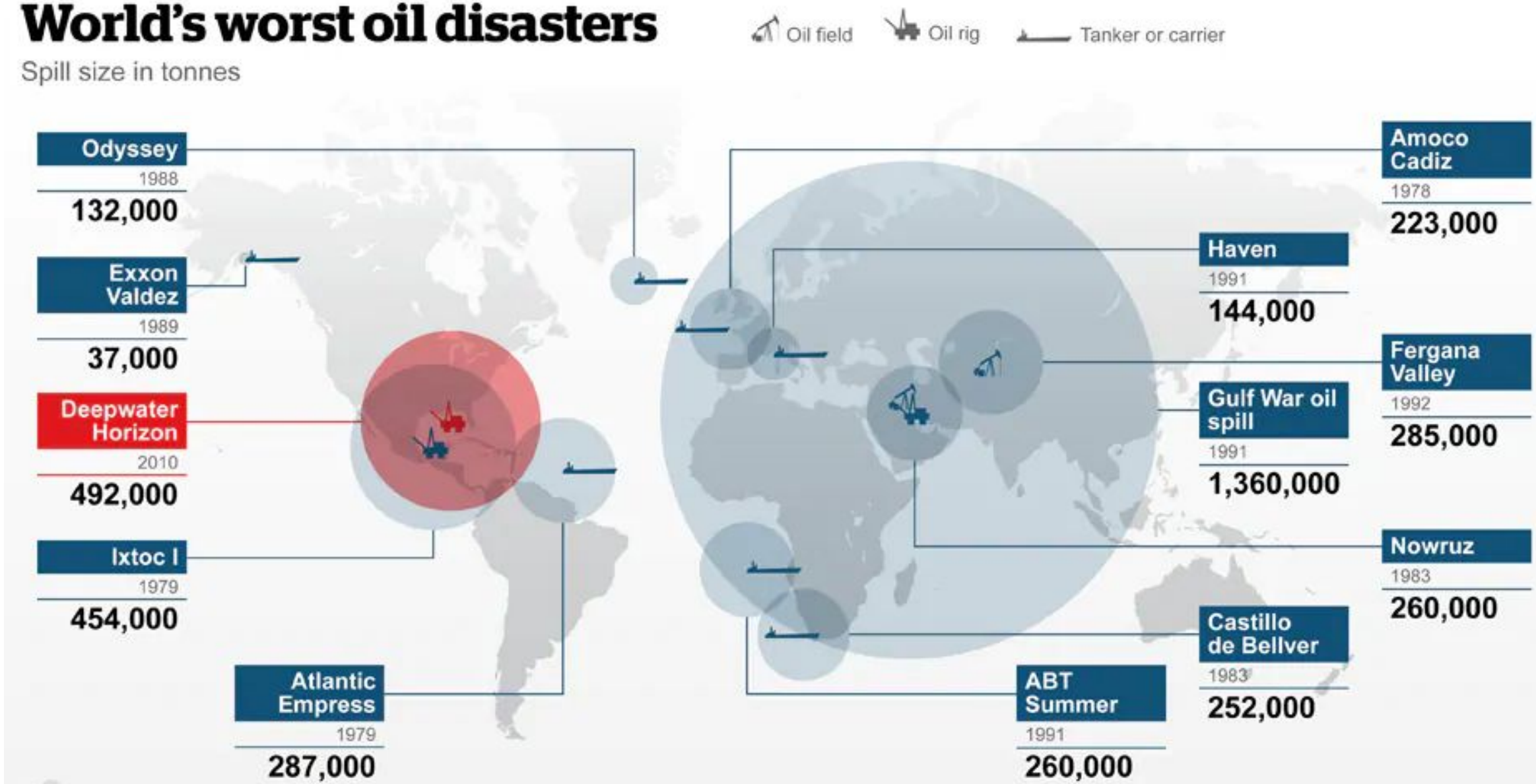


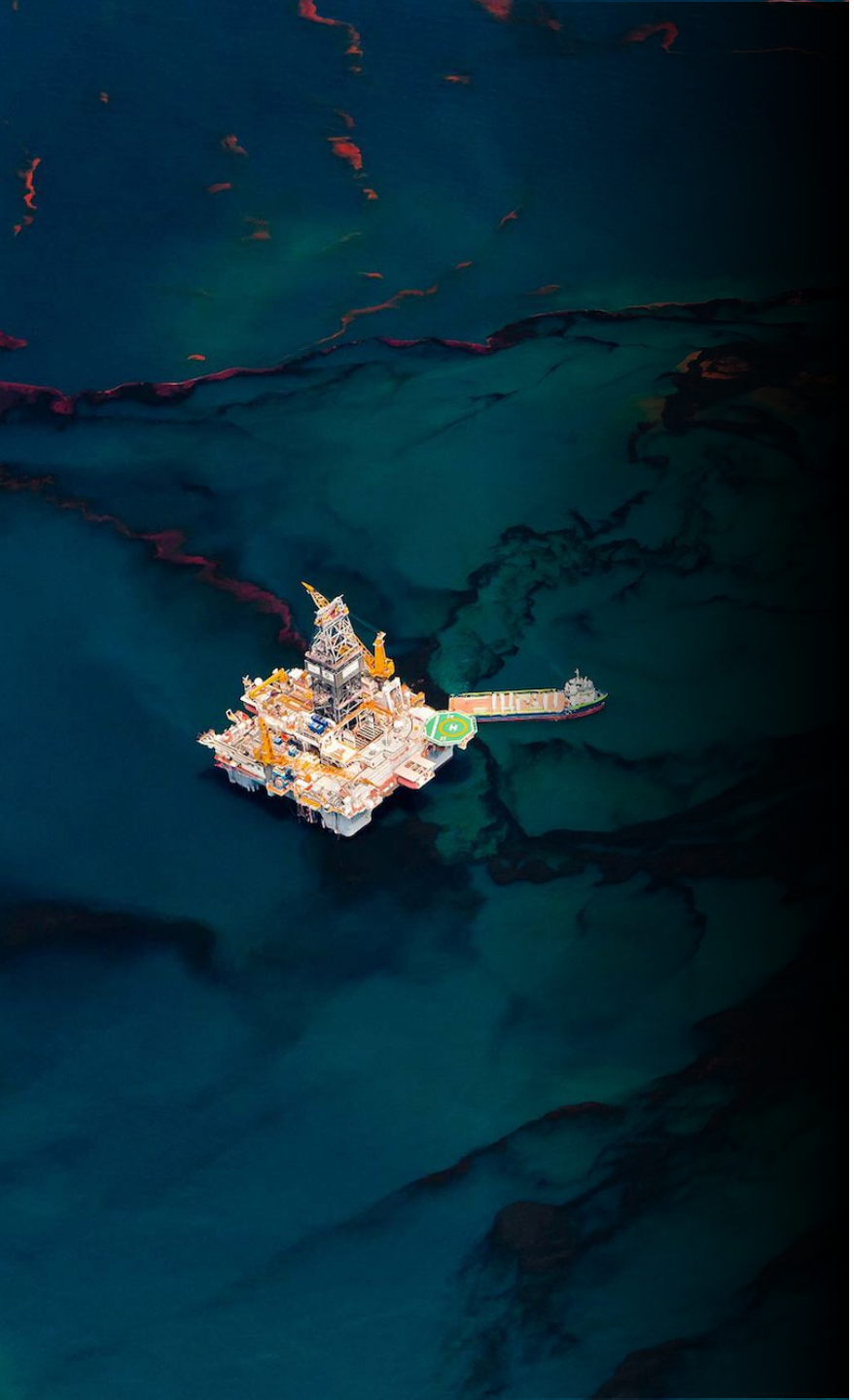
Deepwater Horizon, 2010
5,6 millones de barriles aprox.

Arabien Split, 1991
10 millones de barriles aprox. (Causado)

World's worst oil disasters

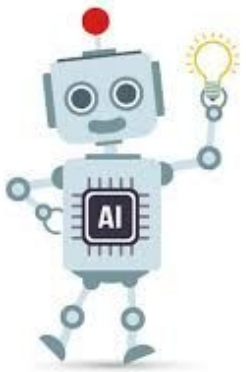
Spill size in tonnes





¡Aporte a la solución!

Si bien existen varias organizaciones encargándose de la gestión de derrames, ninguna emplea **IA** y **ML** en sus procesos. Muchos seccionan sus mediciones (ITOPF - Solo provocadas)



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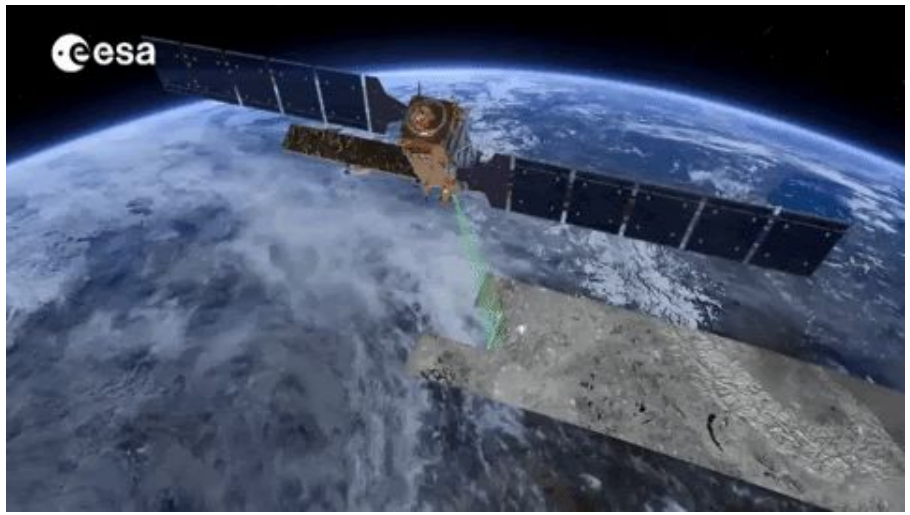
Objetivo

Detectar **derrames de petróleo off-shore** con imágenes de radar de apertura sintética (SAR) usando machine learning (ML).



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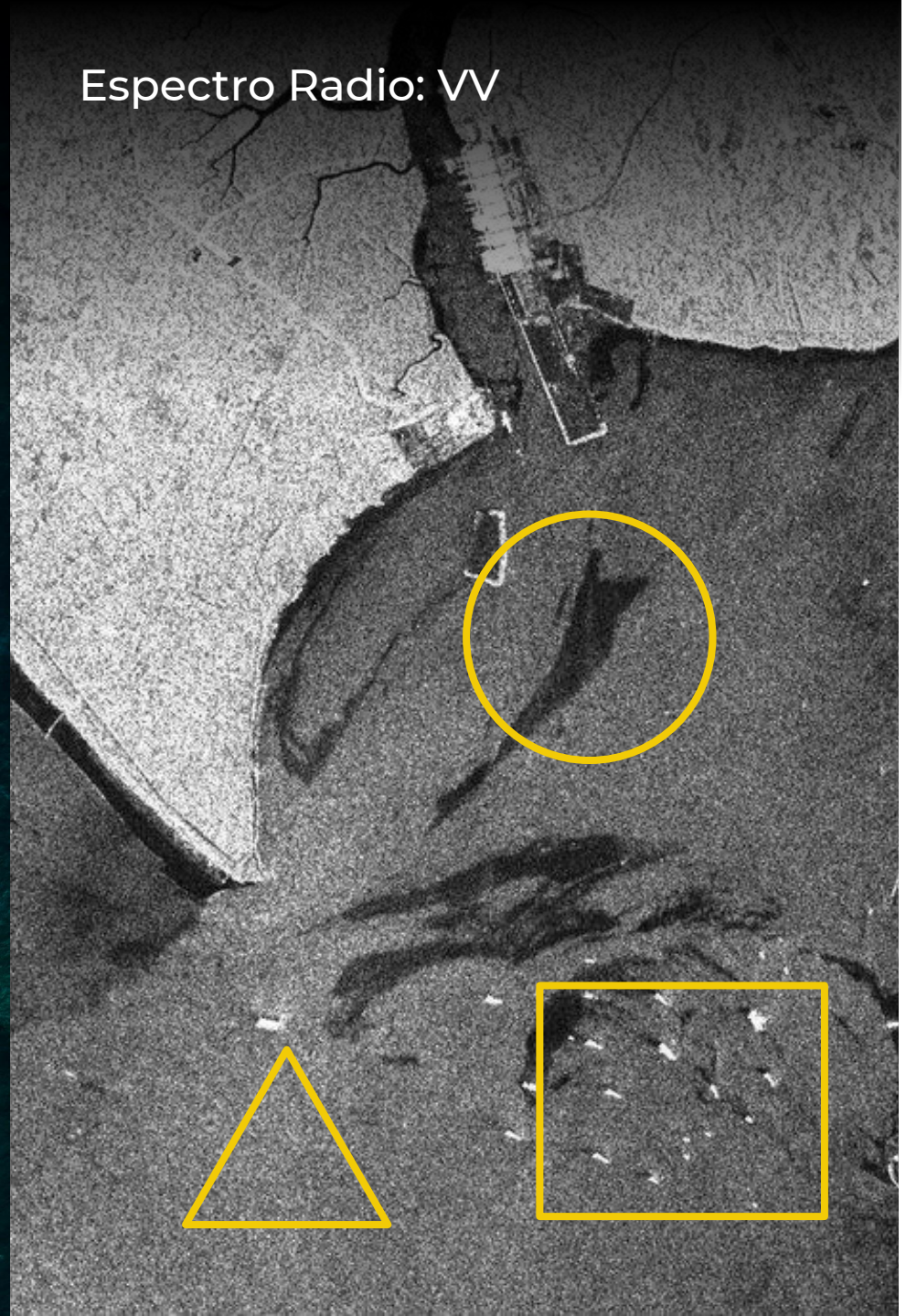
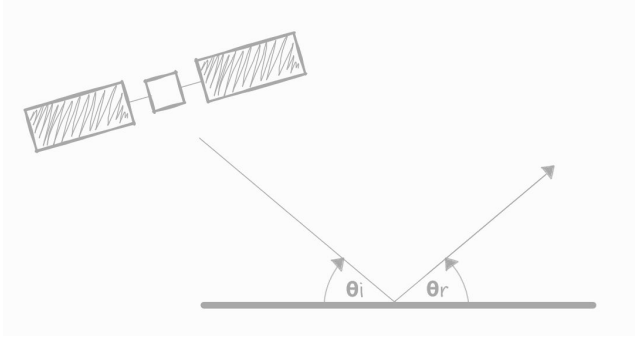
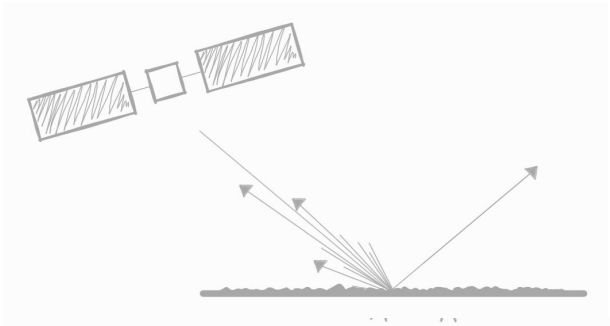
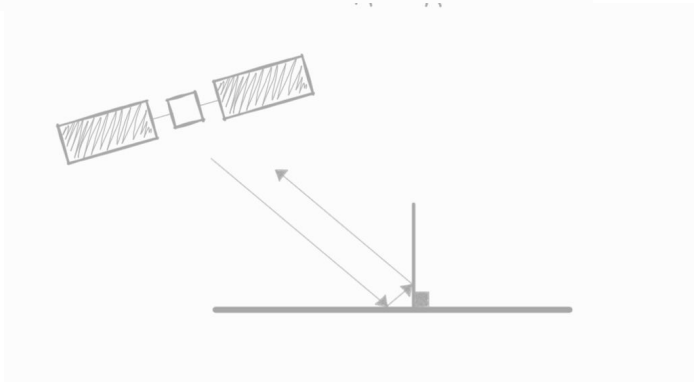


Óptico vs. SAR

¿Cómo funciona?







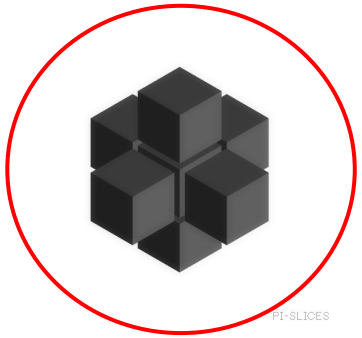
Mecanismos de retrodispersión

Petróleo

Océano

Buque

Tipos de píxeles



Representación

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El paso a paso

Google Earth Engine

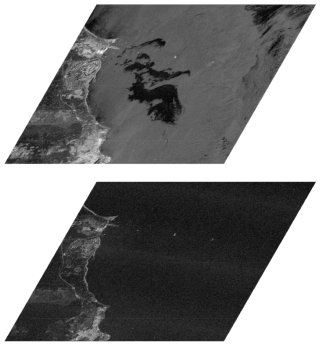
API for Python

+

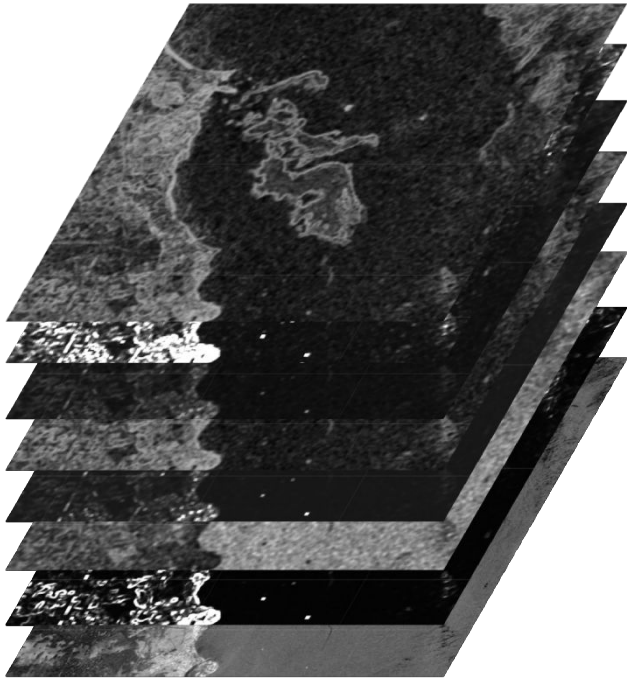
Python

API

Kuwait



Sentinel 1 (SAR) VV + VH



Colección de texturas

VV

Segundo momento angular

Entropía

Inercia

Disimilaridad

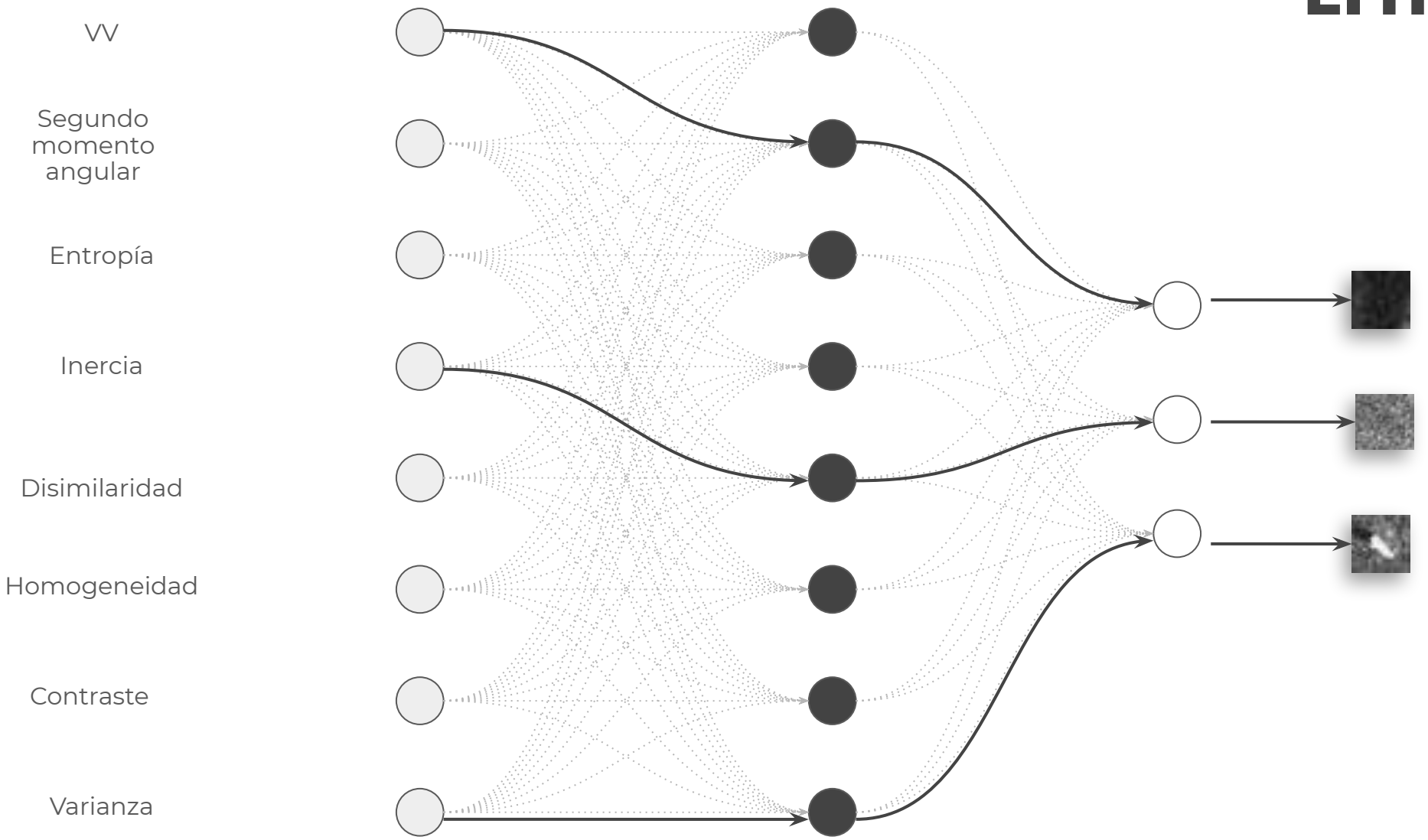
Homogeneidad

Contraste

Varianza

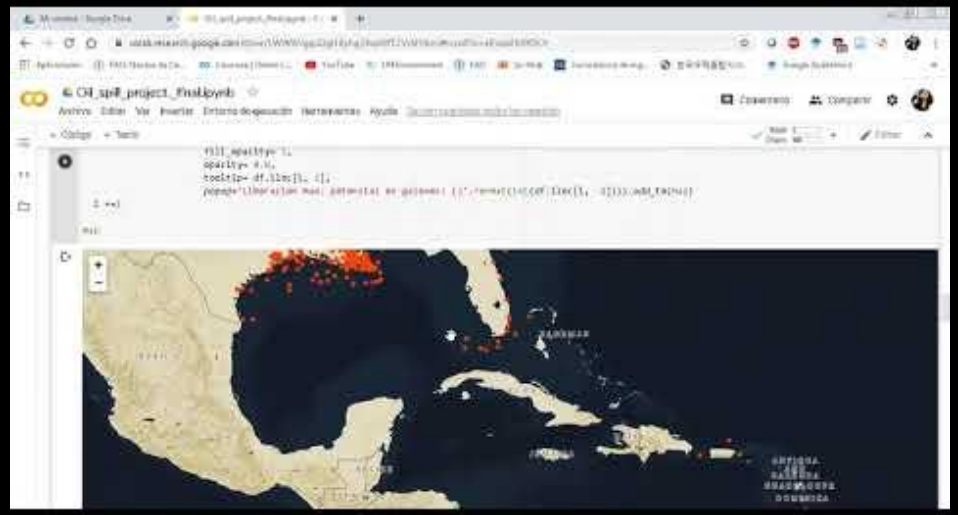
Hopkins

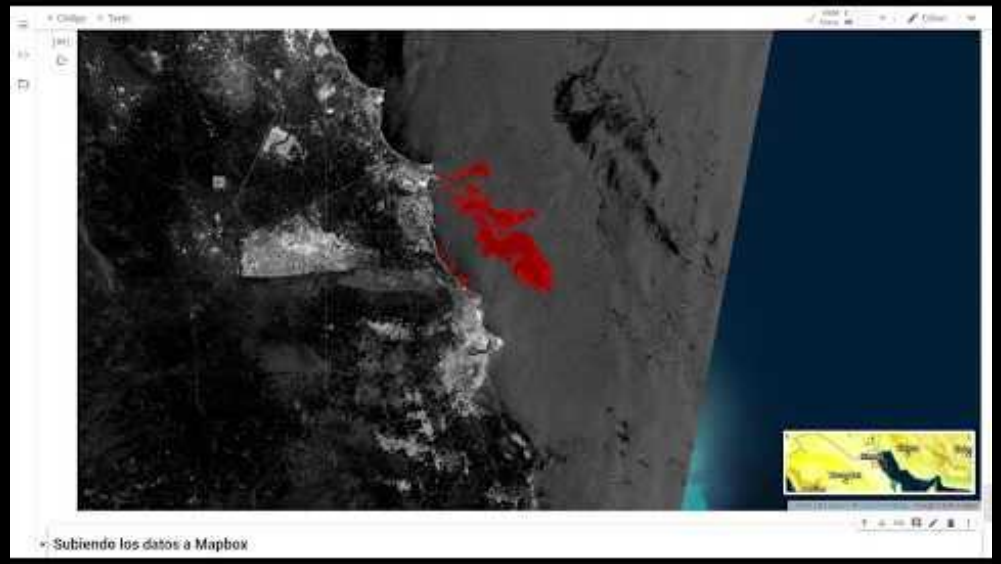
El modelo



Learning Vector Quantization

1000 Epochs





Kuwait

40

km aprox.

+ Grado de automatización

Alta intervención humana

Baja intervención humana

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Modelo de Negocio

1. ONGs ambientales.

2. Gobiernos nacionales o provinciales.

3. Empresas petroleras.

4. Empresas de remediación ambiental.

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Quienes somos

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Pablo Quilachamin

Ing. en Eléctrica y Electrónica

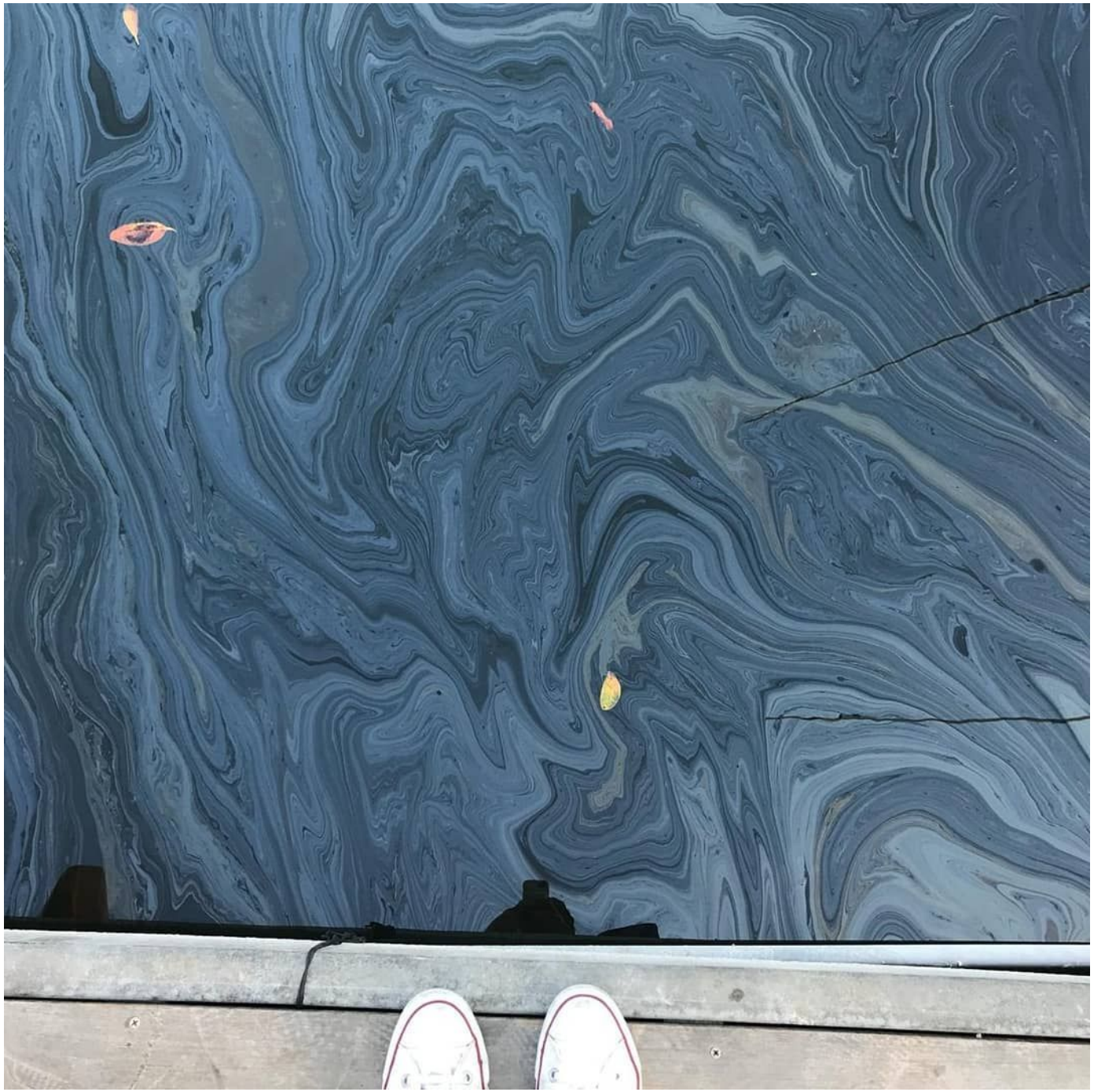

Foto cortesía de **Pacífico Libre**, tomada en Octubre de 2018.

Derrame de petróleo en un tramo del Estero Salado de Guayaquil, provincia de Guayas, Ecuador.

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