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## Background

### **Low resource regions**

**Are beset with low air quality issues, both indoors and outdoors.**

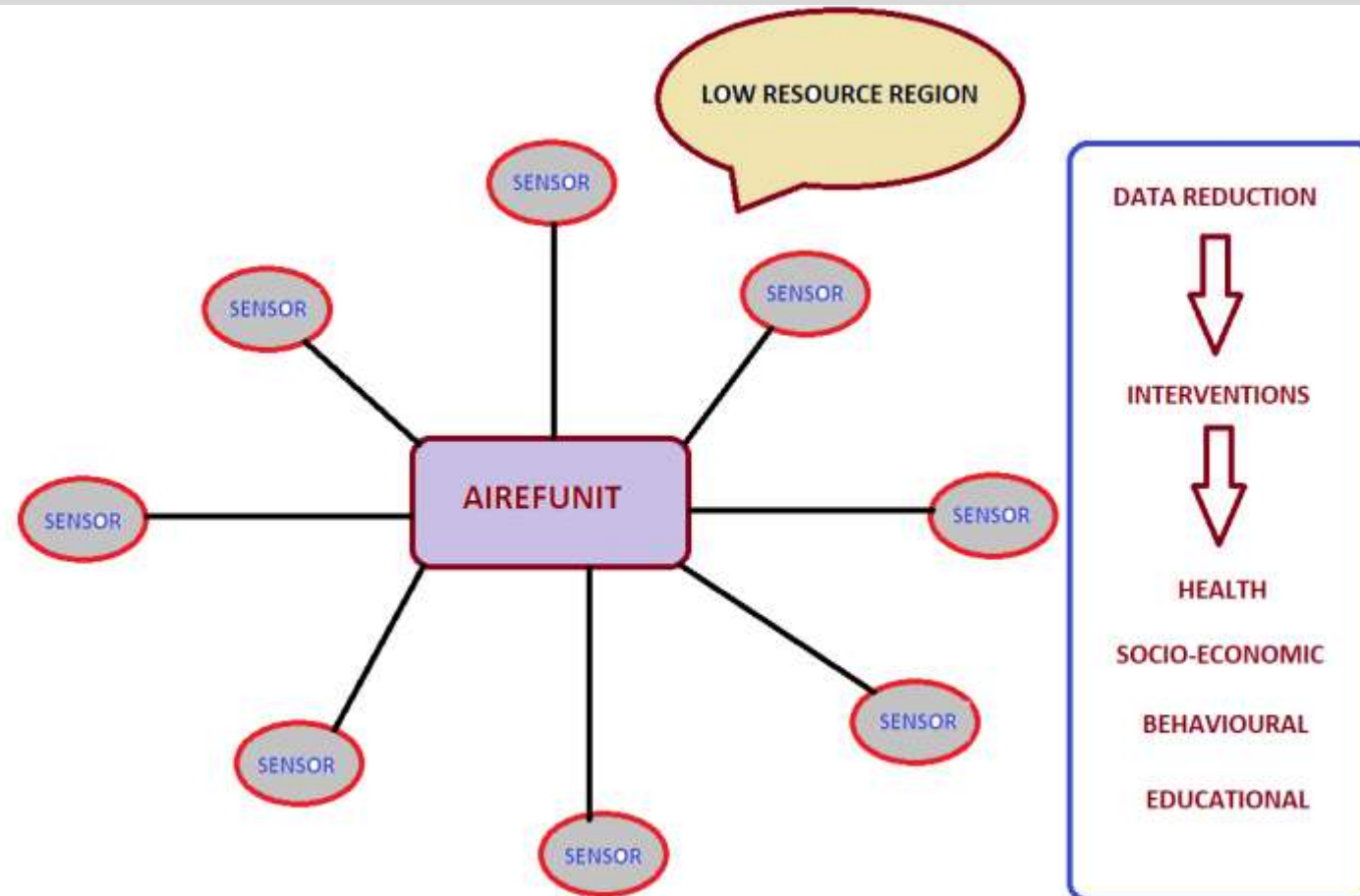
**The need to evaluate the air quality issues in these regions has been recognised.**

**Unlike in resource rich regions, there are hardly any robust public or private [e.g. AURN stations] air quality reference units.**

**Therefore, the current and, potentially, future air quality data being collected by different players in these regions might not be completely suitable for policy decisions.**

**Highly sensitive, reliable, portable, air quality reference units for low resource regions.**

This project in the short term will lead to a **better understanding of the air-quality data in low resource regions** by providing a robust reference/calibrating air-quality unit, which currently does not exist in these regions, for local commercial and citizens' science air quality sensors. **This is fundamental to understanding the present air quality and the potential future impacts of policies for billions of people in these regions.**



## Work Plan – WP 1

### Open path sensor system

#### **WP 1 - Investigate the range.**

WP 2 - Demonstrate the portable reference unit in terms of specificity and sensitivity for CH<sub>4</sub>

WP 3 - Spectroscopic modelling to investigate different species such as NH<sub>3</sub>.

## Progress

Open path sensor system

**WP 1 - Investigate the range – *180 meters absorption path achieved.***

## Work Plan – WP 2

### Open path sensor system

WP 1 - Investigate the range.

**WP 2 - Demonstrate the portable reference unit in terms of specificity and sensitivity for CH<sub>4</sub> .**

WP 3 - Spectroscopic modelling to investigate different species.

## Progress

Open path sensor system

**WP 2 - Demonstrate the portable reference unit in terms of specificity and sensitivity for CH<sub>4</sub>**

**– *atmospheric methane (CH<sub>4</sub>) recorded, sensitivity measurements to follow.***



## Progress

The project has used the **STFC RAL Space Spectroscopy Group's** capability for developing cost-effective, highly sensitive, reliable, portable laser-based gas sensors, and benefits from an existing (funded) UKRI project developing an open path atmospheric sensor.

## What next, within the project?

### Open path sensor system

WP 2 - Demonstrate the portable reference unit in terms of *sensitivity* for CH<sub>4</sub>.

WP 3 - Spectroscopic modelling to investigate different species such as NH<sub>3</sub>.

## What next, after the project?

### **AIREFUNITS project**

Seek further funding.

Engage with collaborators in the UK; field trials, further species capabilities.

Carry out field trials in low-resource regions.

Engage with stakeholders in low-resource regions.

**Thanks!**

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