



# GIS support for microplanning in the health sector

## Use geospatial data and technologies to reach more people in need of immunisation and related services

### Key Details

- Enrolment: from 12 June 2023 ([click here to enrol](#) once open)
- Office Hours: 2 *optional* sessions per week via Zoom  
dates/times are published on the site
- Commitment: 4 – 8 hours, over 3 weeks
- Method: **Self-paced learning**, with trainer support
- Location: Online at [learn.grid3.org](https://learn.grid3.org)
- Cost: FREE!
- Level: Intermediate (see below for requirements)
- Outcome: GRID3 certificate awarded (on completion)

### Introduction to the training programme:

This open online training presents a range of data and GIS techniques that can inform local-level planning procedures for health service provision, a process often referred to as microplanning. The first step in developing a microplan is to gather accurate and relevant data such as population distribution and density, settlement locations, health facilities, administrative boundaries, transportation networks, and other points of interest. You will be provided with such data and instructed on how it can be visualised to best effect, queried, and discussed.

Once you have retrieved key information, such as the location of target population groups and their characteristics, you will want to publish and communicate those findings in a map. You will be guided in the process of producing a series of maps (an Atlas) using an efficient automated map production function in QGIS.

### Learning Objectives:

Participants will receive detailed instruction on the following:

- Load detailed population estimates into GIS and query the data
- Apply colours and styles to data to portray patterns in population distribution and density
- Load health areas into the GIS and calculate their geographic size
- Calculate a population estimate for all health areas in a province and map the variation
- Create buffer zones of a specified distance around all health centres in an area and generate population estimates for these operational catchment areas
- Configure a QGIS Map Atlas with dynamic data-driven features to rapidly generate a series of PDF maps



## Learning Outcomes:

By the end of the training, participants will:

- Have knowledge of the techniques by which GIS can improve microplanning procedures, improve accuracy and ultimately reach more people to provide the health services they need
- Have a better understanding of how to use and apply spatial data in microplanning procedures
- Be able to apply practical methods for estimating populations served by health facilities
- Have carried out an assessment of where current health or immunisation services are lacking

## Who is the training for?

The GIS skills and techniques covered in this training apply to any sector or industry. However, it is especially relevant to those working in health, education, population census or national/regional infrastructure.

This is an **intermediate level GIS** training programme, intended for current users of QGIS software. Entry requirements are as follows:

- Participants should have either completed the [GRID3 QGIS Foundations](#) training programme, with all quiz assessments successfully passed
- or**
- Be able to demonstrate equivalent knowledge – participants will be required to complete an online assessment form
  - In addition, hardware / software should be set up and pre-installed:
    - Each participant should have access to a laptop or workstation running Microsoft Windows for the duration of the training programme; QGIS software to be pre-installed (details provided)
    - A reliable Internet connection is required

## Programme Content:

Participants in this training programme will run through the following courses on the GRID3 LMS:

- *Course D015: Spatial data analyses using QGIS, to inform planning for health service provision*
  - Case study 1 – using gridded population data
  - Case study 2 – using settlement extant data
- *Course D021: QGIS Case Study - automated map production for microplanning*

Participants are also encouraged to apply these GIS methods and functions to data from their region, i.e. to produce their own local maps. Trainers will provide a certain amount of post-training support to those who pursue this objective.



## Training methods:

The training programme is hosted on GRID3's learning management system (LMS), an online platform for learners to come together, explore ideas, and collaborate. Anyone new to GRID3 training will be provided with their own LMS user account for the duration of the training, and a short period beyond. Colleagues with current active user accounts will continue with those.

A live introduction session will be scheduled, providing an introduction to both LMS and the training programme. Trainers will answer questions and ensure that participants are comfortable and familiar with how to proceed. The training is then self-paced, you will work through materials independently, getting hands-on with QGIS through a range of practical exercises based on real-world examples, and exploring presentations and videos to support your learning.

## Getting support:

- **Discussion Forum:** Participants can post queries to the LMS discussion forum. Trainers will respond in due course; however we encourage fellow learners to respond and support their peers, as part of our growing GIS community.
- **Office hours:** trainers will schedule a number of office hours. These are purely optional - you can come along to a live zoom session and pose questions to the group

Finally, there are quizzes at the end of each course so that learners can measure their understanding as they go. Quizzes can be retaken as many times as necessary, but a successful pass for each course is required to receive your certificate.

Explore more at [learn.grid3.org](https://learn.grid3.org)