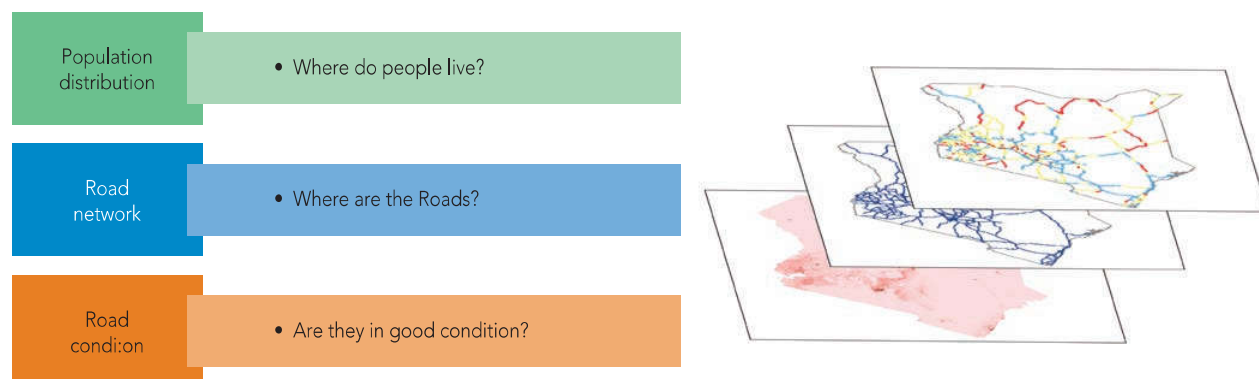


Figure 11: Basic Methodological Framework

The new RAI method proposed here requires three types of data: (i) population distribution, (ii) road network, and (iii) road condition. Geospatial techniques are used to combine the three types of data in the same format (figure 11). Annex I provides quick technical guidance for computing the RAI, which is not a new technique. A variety of similar exercises already exist. Guo, Koo, and Wood (2009) use spatial data to relate market access to input and output farm-gate prices (box 4).

Instead, this report aims to contribute by proposing a somewhat standardized method to ensure international consistency, sustainability, and operational relevance.

The use of spatial data has various advantages. It can help ensure consistency across countries. The level of spatial resolution is broadly the same regardless of the size of the country or subnational boundaries. Any given norm of connectivity (for example, 2 km distance from

Box 3. Accessibility Measurement in Nepal

The Government of Nepal uses an “accessibility index” to measure people’s accessibility and address poverty and social exclusion. In Nepal, about 23 million people, or 82 percent of the total population, are estimated to live in rural areas (United Nations 2014). The calculation of accessibility is based on an analysis of population distribution, the extent of the all-weather road network, and calculations of the walk-time to access the road network. Because of the highly mountainous topology in the Hills area, the time band is targeted at four hours. In the Terai area, accessibility is measured by the population within two hours of a qualified road.

Based on the government’s definition, which is different from the RAI in the current work, it is estimated that accessibility has been improved from 78 percent in 2007 to 86 percent in 2013 (table B3.1). However, it cannot be overemphasized that the definitions are different. In addition, the share of the road network for which the Department of Roads is responsible has been expanded considerably, from an operational strategic road network of 5,030 km in 2007 to a proposed extent of about 10,000 km. Thus, regardless of actual improvements of the road network, “accessibility” will increase. Yet, all the indications are that people’s accessibility differs greatly across the country, and people have better access in the Terai region (map B3.1).

(continued on next page)