



## Estimating Road Influence Area

### Road Influence Area (RIA)

The RIA, also known as the zone of influence, is the area of a rehabilitated or new road where the project impacts are expected (World Bank, 2005; Van de Walle, 2008; Morgan, 2013; and Jerve, 2013). The RIA specifies the boundary of an area where the beneficiaries are located, delineates areas of direct and indirect impacts, and indicates where there could be possible spillover.

The advantages of performing the RIA analysis includes:

- Generation of rich information set related to the socio-demographic profile of the area's population, geographical profile or topography, and existing road networks
- Assistance to project planning and policy-making
- Ex-ante economic analysis and ex-post impact analysis

The RIA kilometer band approach considers areas that fall under the 2.5- kilometer band extending from both sides and end of the road. This methodology can be adjusted depending on several factors and allows clear marking between direct and indirect benefits and tempers the spill over from other projects. In general, RIA of PRDP should exclude the RIA of existing concrete roads with better road quality. Only the net serviceable production areas within the 2.5-kilometer band are to be considered as RIA of the subproject as seen in Figure 1

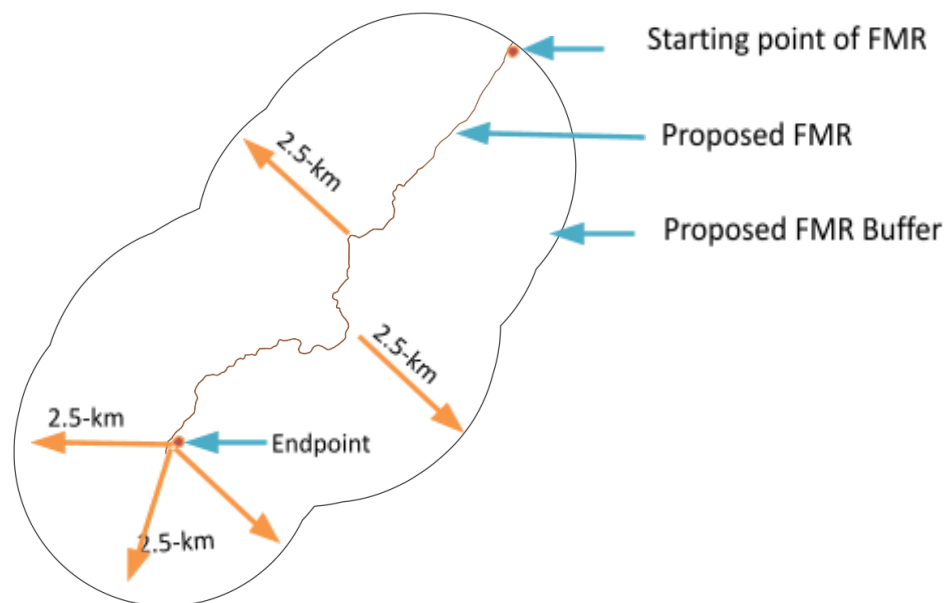
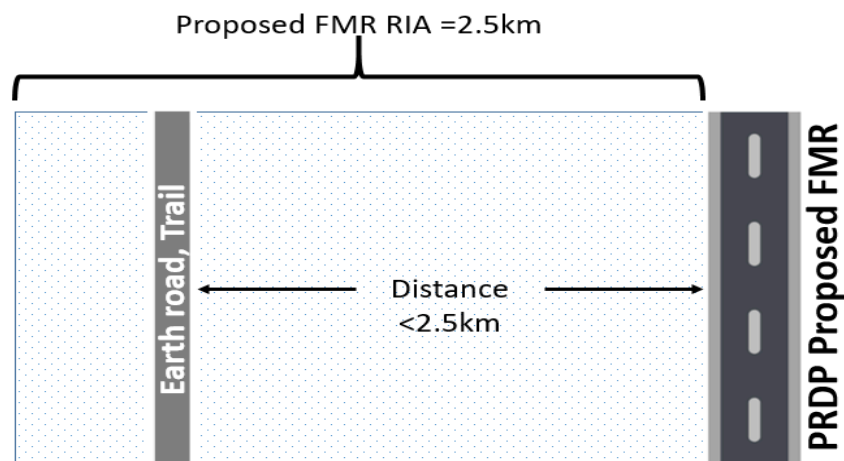


Figure 1. 2.5 kilometer buffer RIA of PRDP Proposed FMR.

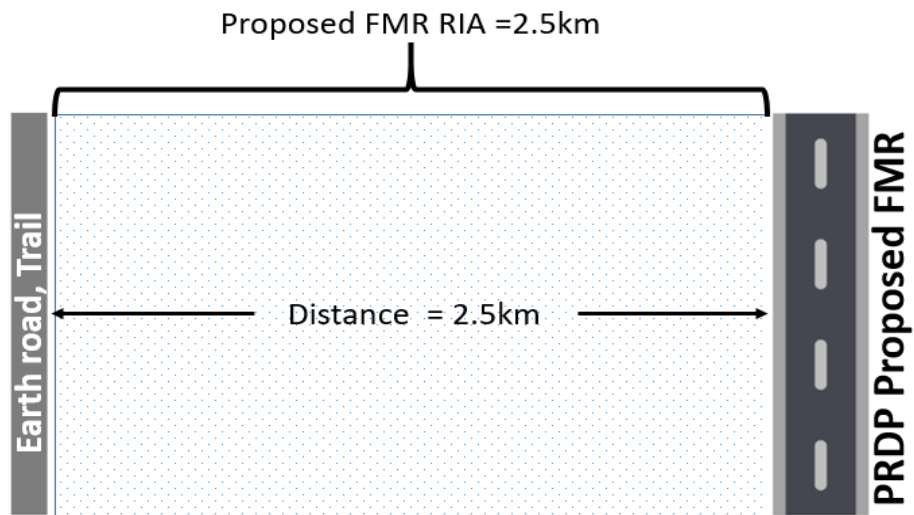
For sole-access roads (i.e., end of proposed road will not connect with an existing road except narrow earth trails passable only on foot, animals, or two-wheeled vehicles), the 2.5-kilometer distance from the end of the proposed road can be extended up to a maximum distance of 5.0 kilometers. Notwithstanding, this base rule will be subjected to various site-specific considerations and exemptions to get the final road influence area estimation.

### Considerations and exemptions to the 2.5-km band rule

- 1) Marginal production areas can be included in the RIA of subprojects. In cases when the impact of the FMR includes the establishment of new agricultural areas within the RIA of existing roads, the additional production areas can be included as benefits of the project.
- 2) For stand-alone bridges that provide sole access, the RIA would cover the whole area the bridge would provide access to, leading to the market. It may extend more than the 5-kilometer limit.
- 3) If the proposed road is parallel with a lower quality road (i.e., dilapidated/intermittent/single-lane PCCP, gravel road, earth road, trail and tire paths), the following analysis applies:
  - a. Distance between the two roads < 2.5 km: The effective RIA of PRDP is 2.5 km, notwithstanding the presence of the road it is parallel to.

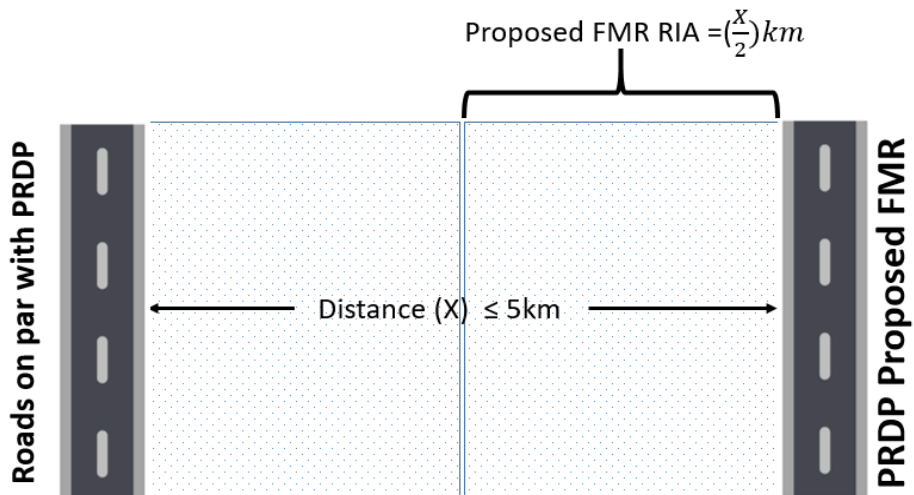


- b. Distance between the two roads = 2.5km: The effective RIA of PRDP will cover the full 2.5 km.



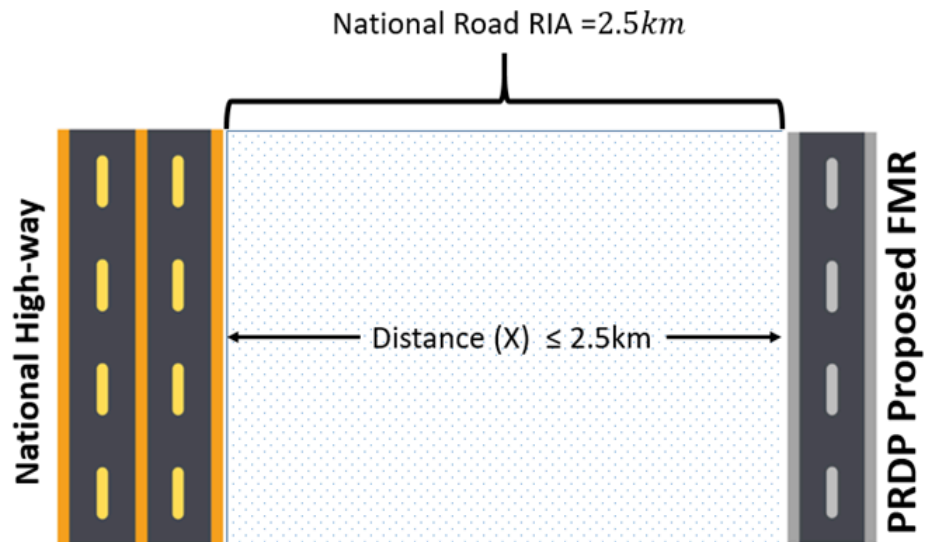
- c. Distance between the two roads is greater than 2.5 km: The effective RIA of PRDP will cover the full 2.5 km.

- 4) If the proposed road is parallel to a road that has a quality on par with PRDP standards, the effective RIA of PRDP is equal to half of the distance between the two roads. The maximum effective RIA is 2.5 km.

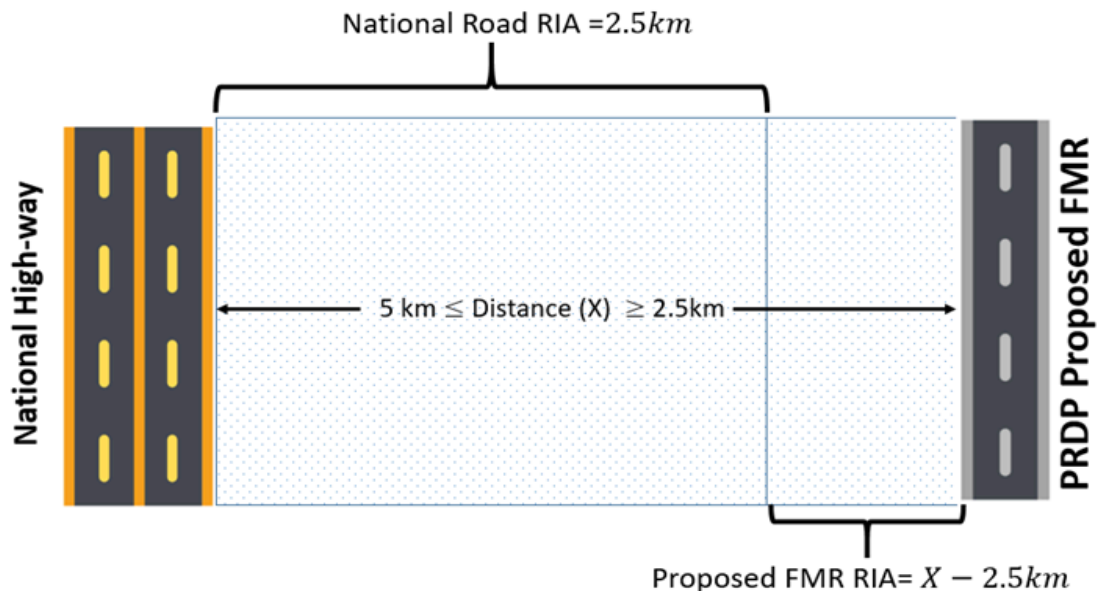


5) If the proposed road is parallel with a higher quality road (i.e., National Road), the following analysis applies:

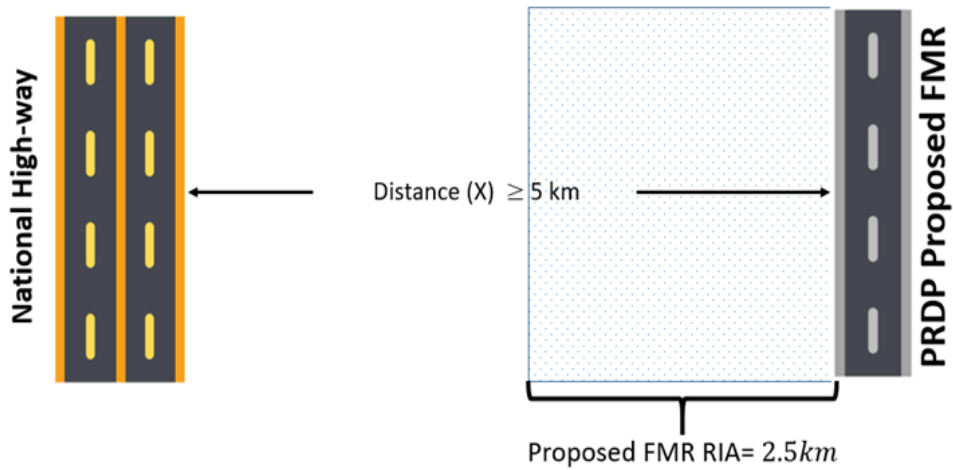
- a. Distance between the two roads less than or equal to 2.5 km: The effective RIA of PRDP is zero, in consideration of the superior quality of the national road.



- b. Distance between the two roads is between 2.5 km and 5km : The effective RIA of PRDP is anything that's left after the national road RIA of 2.5 km has been deducted, in consideration of the superior quality of the national road.

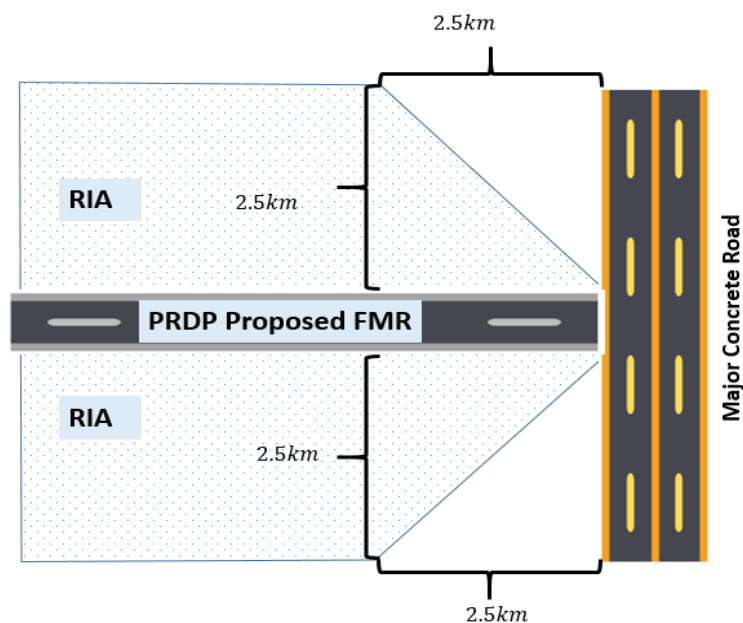


- c. Distance between the two roads is greater than 5km: the effective RIA of PRDP will be 2.5km.

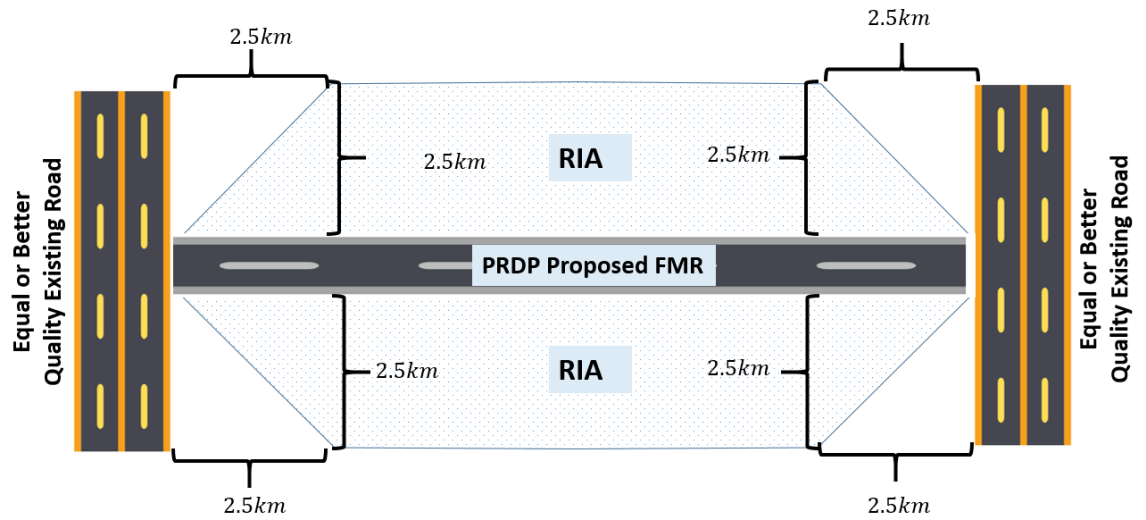


- 6) If a proposed road is perpendicular to an existing road that has equal or better quality than PRDP standards, the following analysis applies in the following case scenarios:

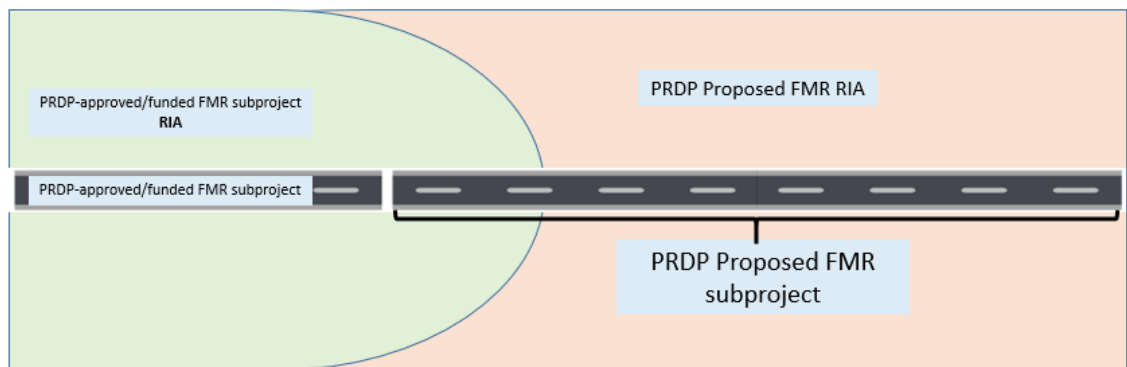
- a. Proposed road connects with an existing road at or near Sta. 0+000, RIA computation at the junction or Sta. 0+000 is zero and increasing following a diagonal shape towards the maximum allowable RIA at the end of the proposed road, taking into consideration the tributary divisors and topography.



- b. Proposed road connects with existing roads at both start and end, RIA computation at each junction shall be zero and increasing diagonally towards the maximum allowable RIA at mid-point, taking into consideration the tributary divisors and topography.



- 7) For proposed subprojects that will connect with a previously PRDP-approved/funded FMR subproject, RIA of the proposed road shall exclude any RIA section of the previously funded subproject that may overlap with the RIA of the proposed road.



- 8) For proposed roads with tributary divisors (rivers, creeks, streams, etc.), separated by mountains, or located along coastline; RIA computation will vary depending on factors such as tributary boundary, accessible slope and coastline. For roads with tributary divisors, unless a bridge connects to its divisor, the 2.5-kilometer RIA rule will be adopted. And for mountainous areas, if the proposed road will serve as a road network connecting to agricultural tramline systems to facilitate transport of farm produce from adjacent mountainous areas, the proposed FMR'S RIA can also extend to the tramline's service area.

### 1. Tributary Divisor

For proposed roads with a tributary, the RIA computation will vary based on the tributary boundary (covering only up to 294 meters), as illustrated in Figure 2. Unless a bridge connects the tributary divisor, the 2.5- kilometer km RIA rule will be adopted.

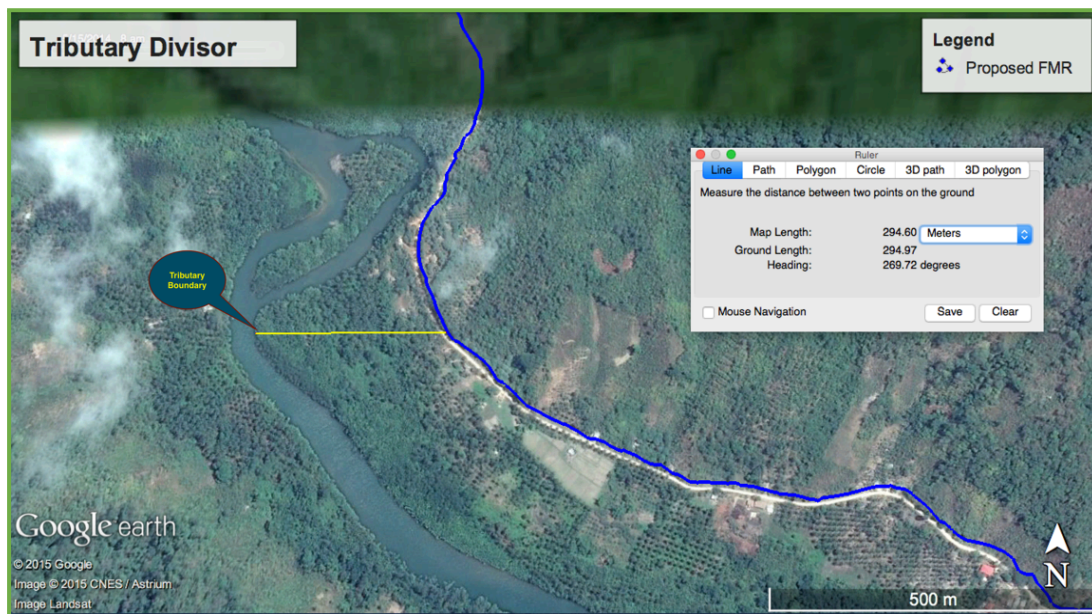


Figure 2. Exemption to 2.5 km RIA rule: Tributary Divisor

## 2. Mountainous Area

For proposed roads located in mountainous areas, the computation of RIA will be based on the elevation and slope, as illustrated in Figure 3. The elevation profile will determine the degree of the slope that can be traversed (both sides) by the proposed road.

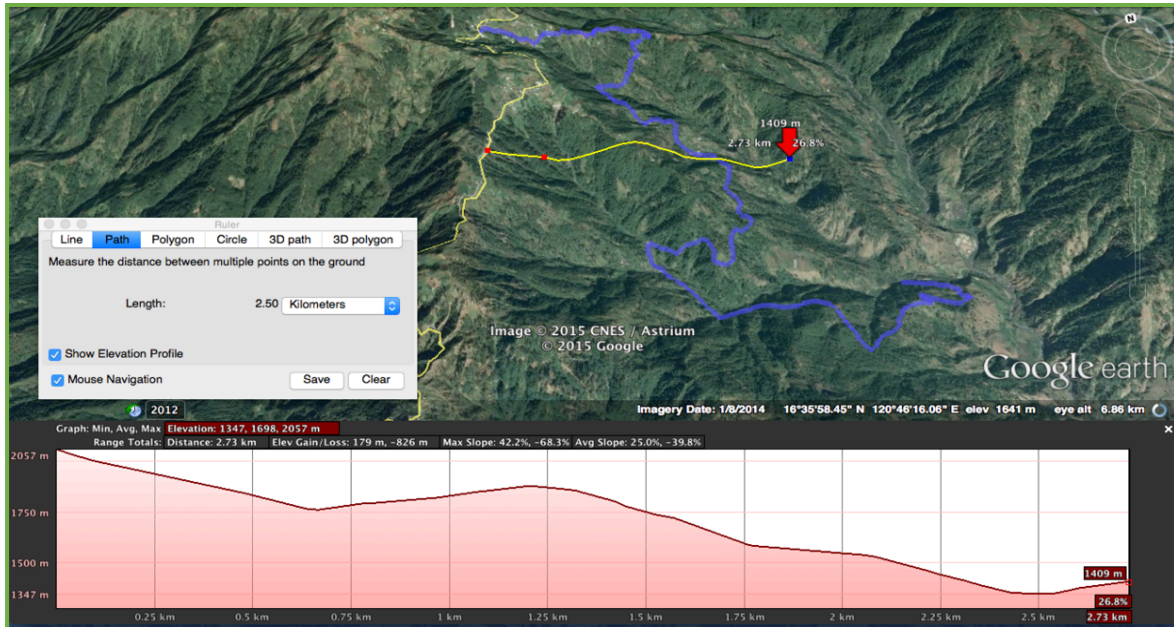


Figure 3. Exemption to 2.5 km RIA rule: Mountainous Area

The map above presents the 2.5-km radius for the RIA of the national road. However, the elevation profile shows that portions of the RIA, specifically the areas reaching a 1.25-km distance from the national road, are inaccessible from the proposed FMR. Thus, the RIA of the proposed FMR will be limited to accessible distances. Referring to the elevation profile above, these accessible areas would be the distances from the 1.25-km mark until the 2.5-km mark.

If the proposed FMR will serve as a road network connecting to agricultural tramline systems to facilitate transport of farm produce from adjacent mountainous areas, the proposed FMR'S RIA can also extend to the tramline's service area.



### 3. Coastal Zone

For proposed roads along coastal areas, the RIA computation will be limited to the coastal zone, as illustrated in Figure 4. The map below illustrates an FMR in a coastal zone wherein the proposed road will only have a RIA coverage of up to a radius of 1.64-km kilometers towards the coastal zone.

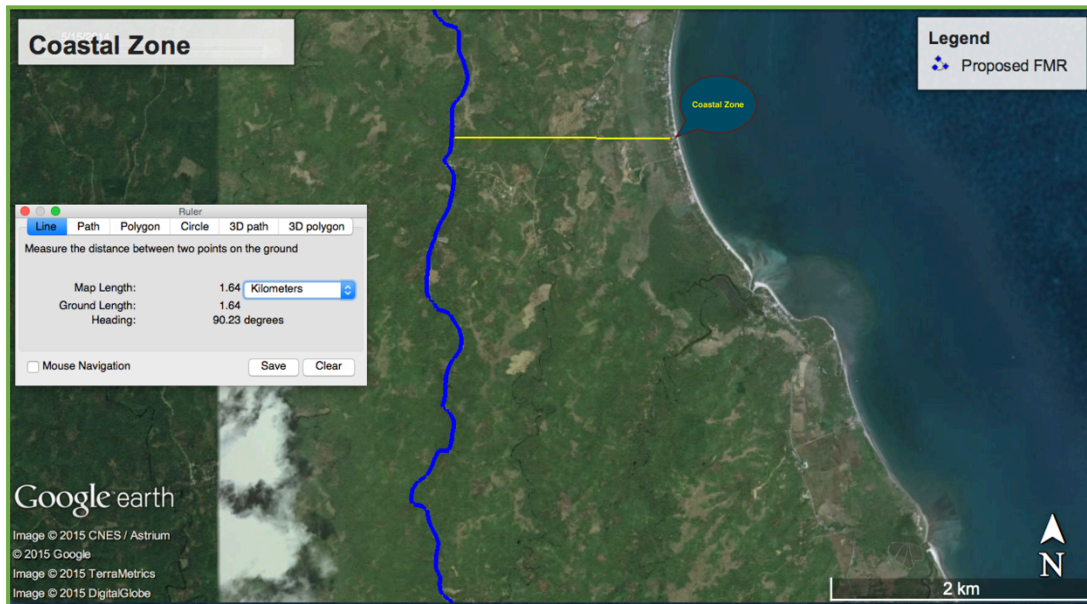


Figure 4. Exemption to 2.5 km RIA rule for: Coastal Zones

For more information in generating road influence areas using GIS methodology you may refer to [RIA analysis Kilometer band Approach](#).