

Pilot study by:

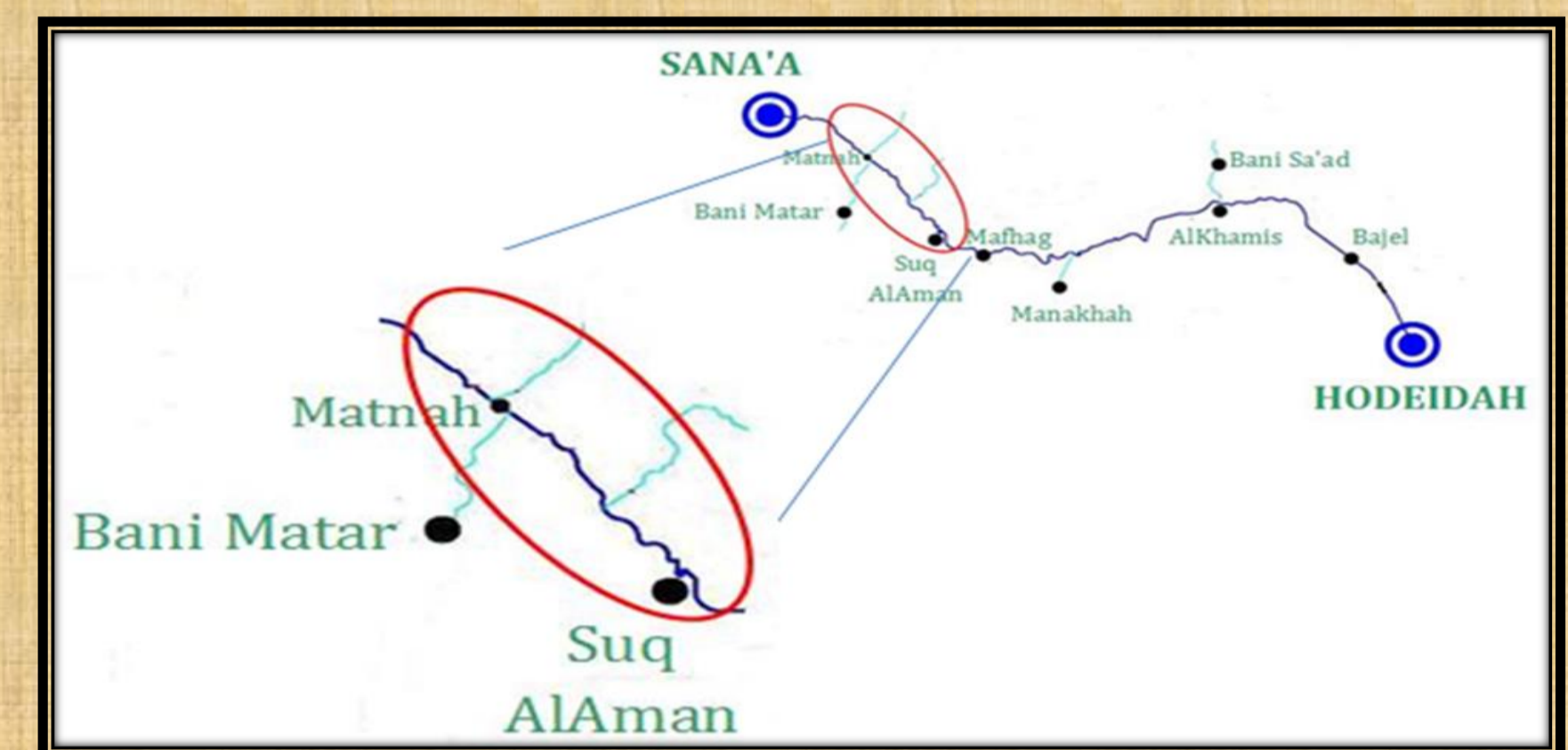
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Rain Water Harvesting Potential from Roads in Yemen: its Social and Economic Benefits on a National Scale

Case study: Sana'a - Al-Hodiedah Road

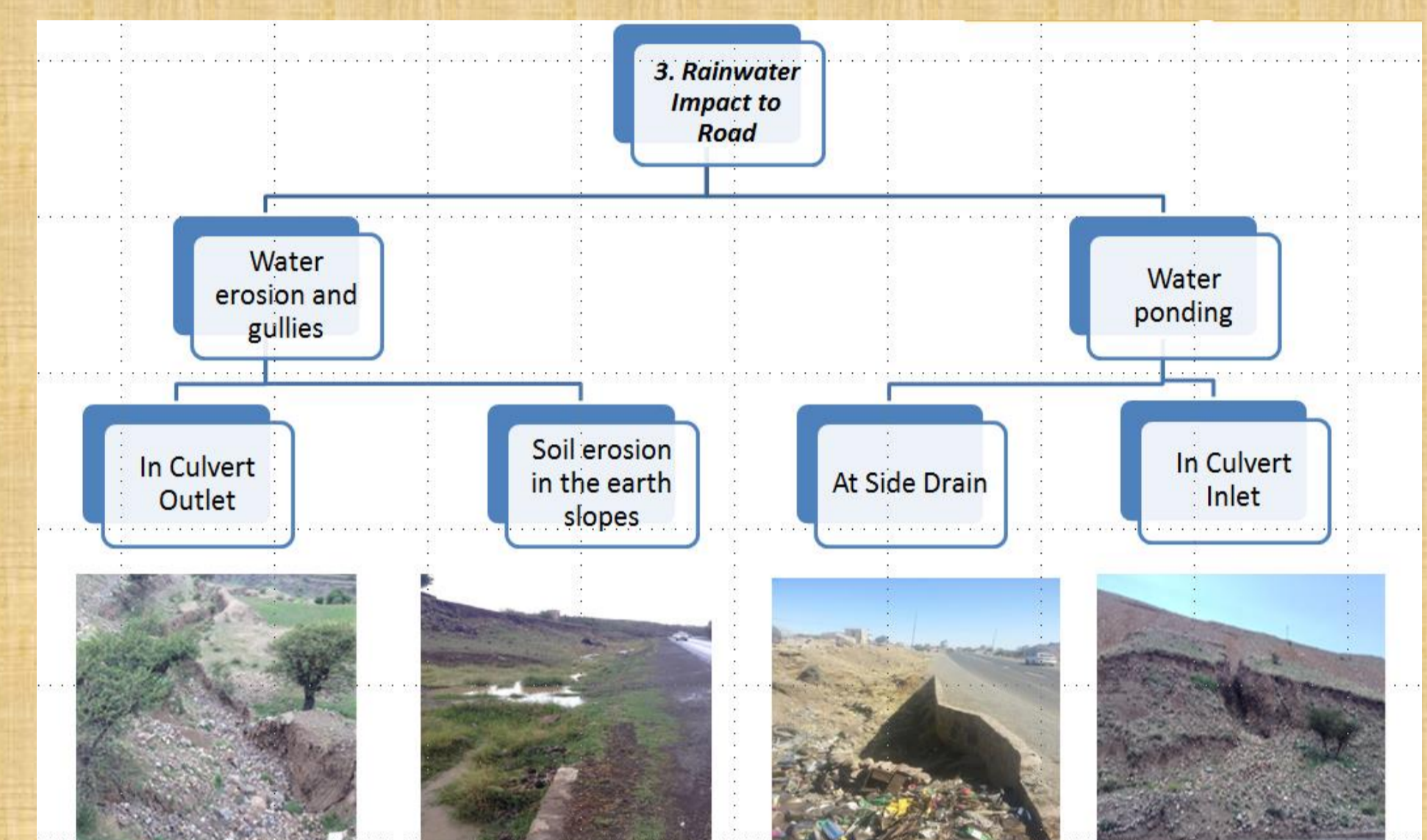
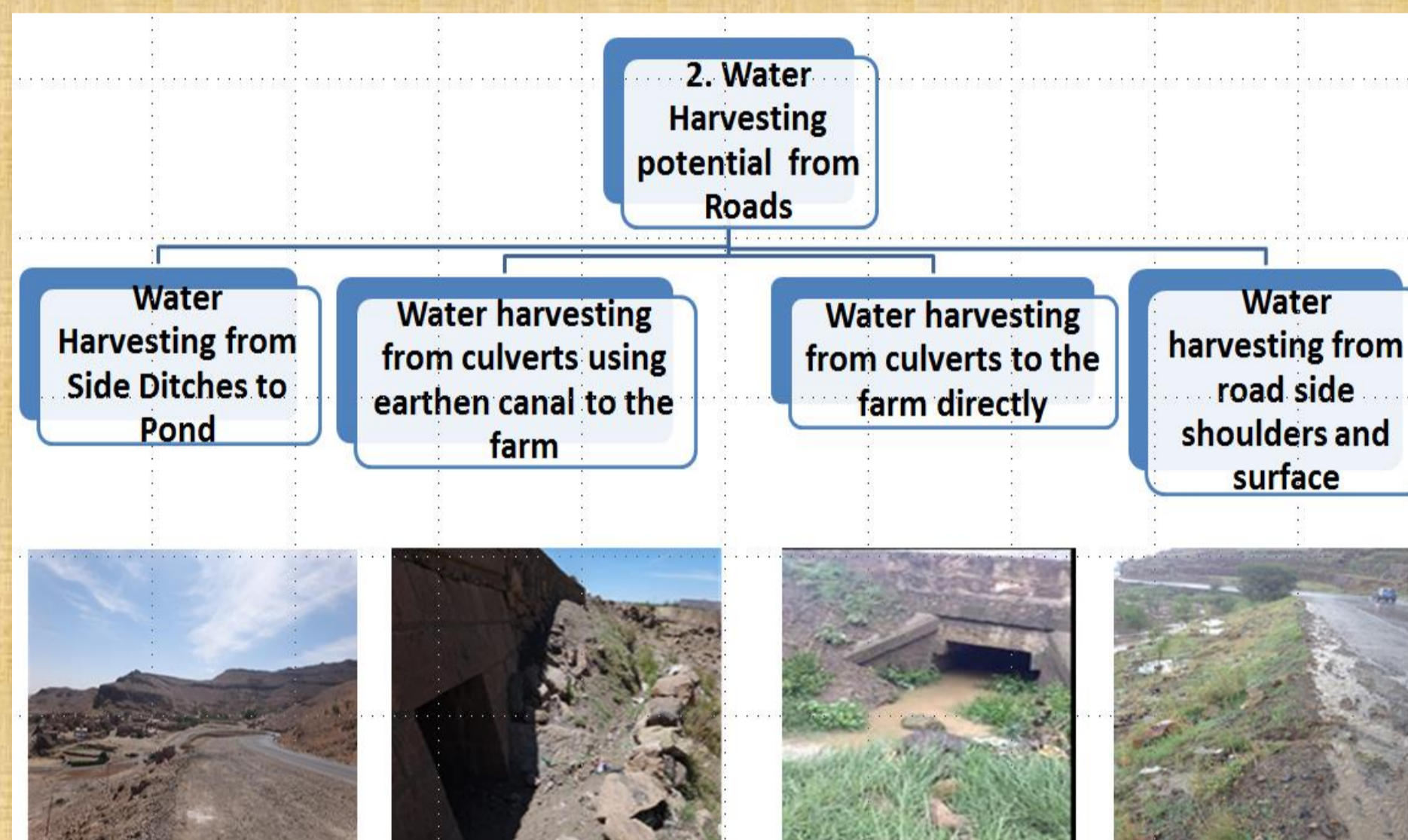
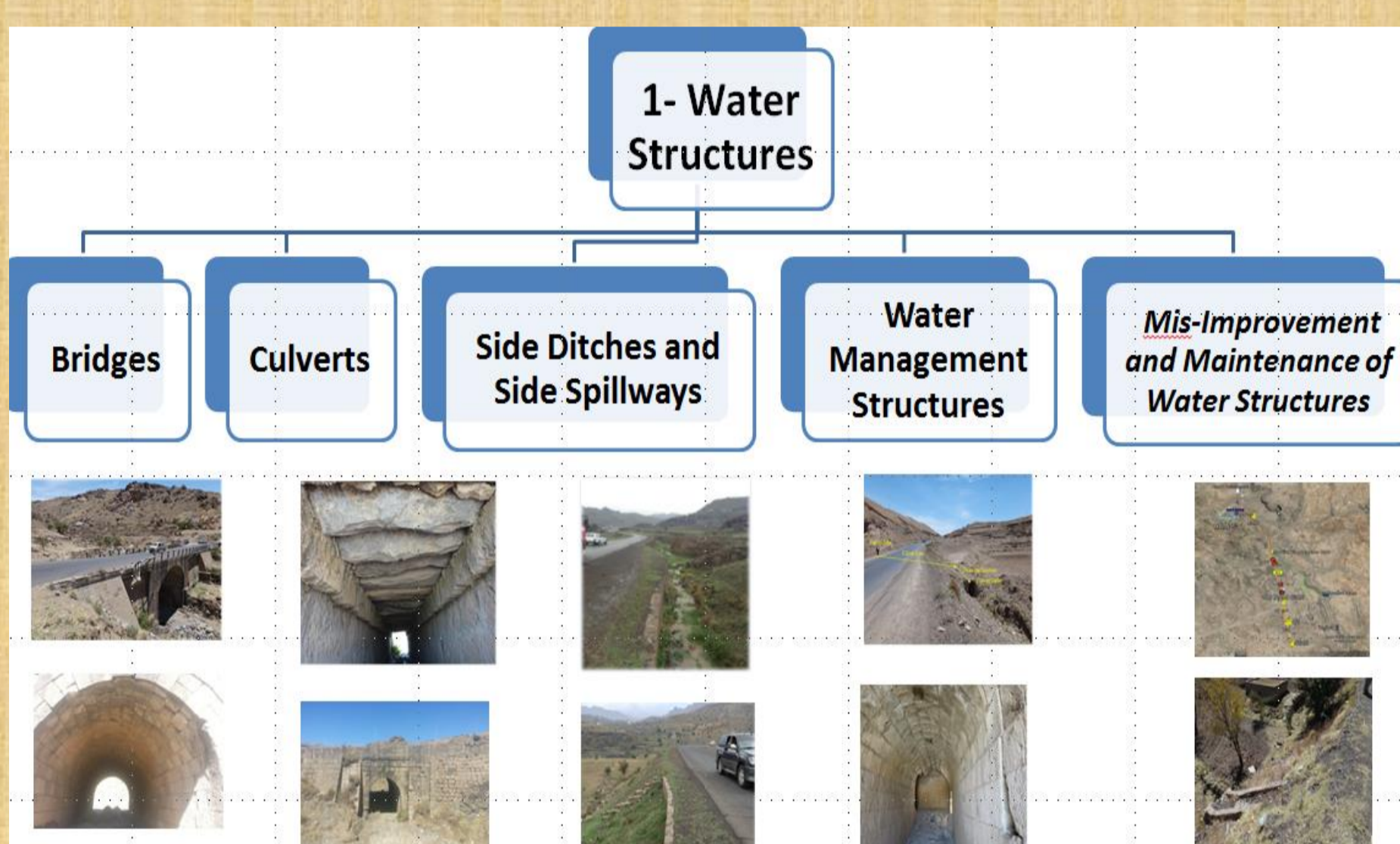
Road Rainwater Harvesting

This study aims to optimize the benefits of rainwater harvesting from roads. A section of Sana'a – Hodiedah road was studied and road rainwater harvesting initiatives were recorded to suggest a technical outline aspects from the pilot study. Meetings and interviews with stakeholders were conducted along the road, and questionnaires were filled by road engineers to induce awareness.



Methods

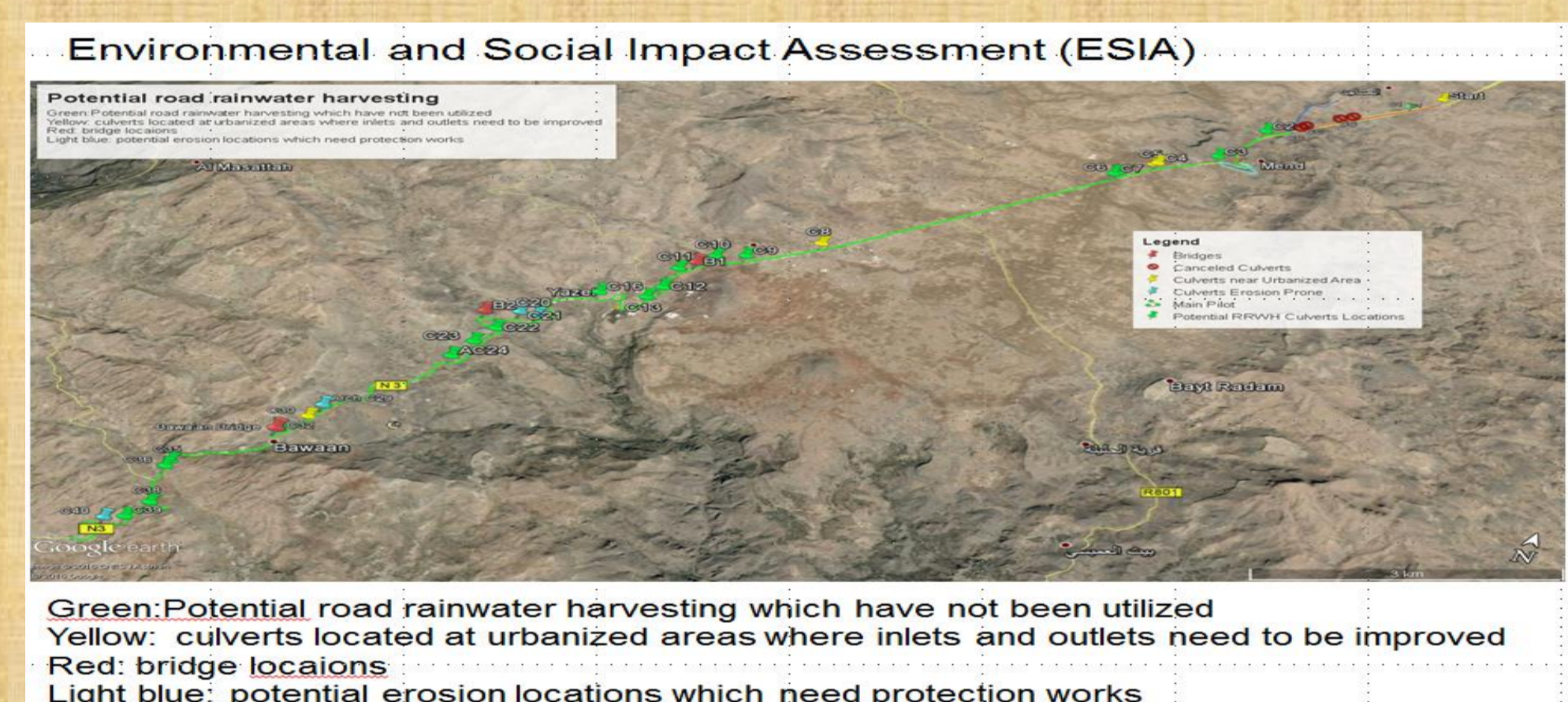
1. Reconnaissance survey on water structures, rainwater harvesting potential locations, and rainwater impact on roads.



2. Stakeholders', specialists', and road engineers' questionnaire and interviews

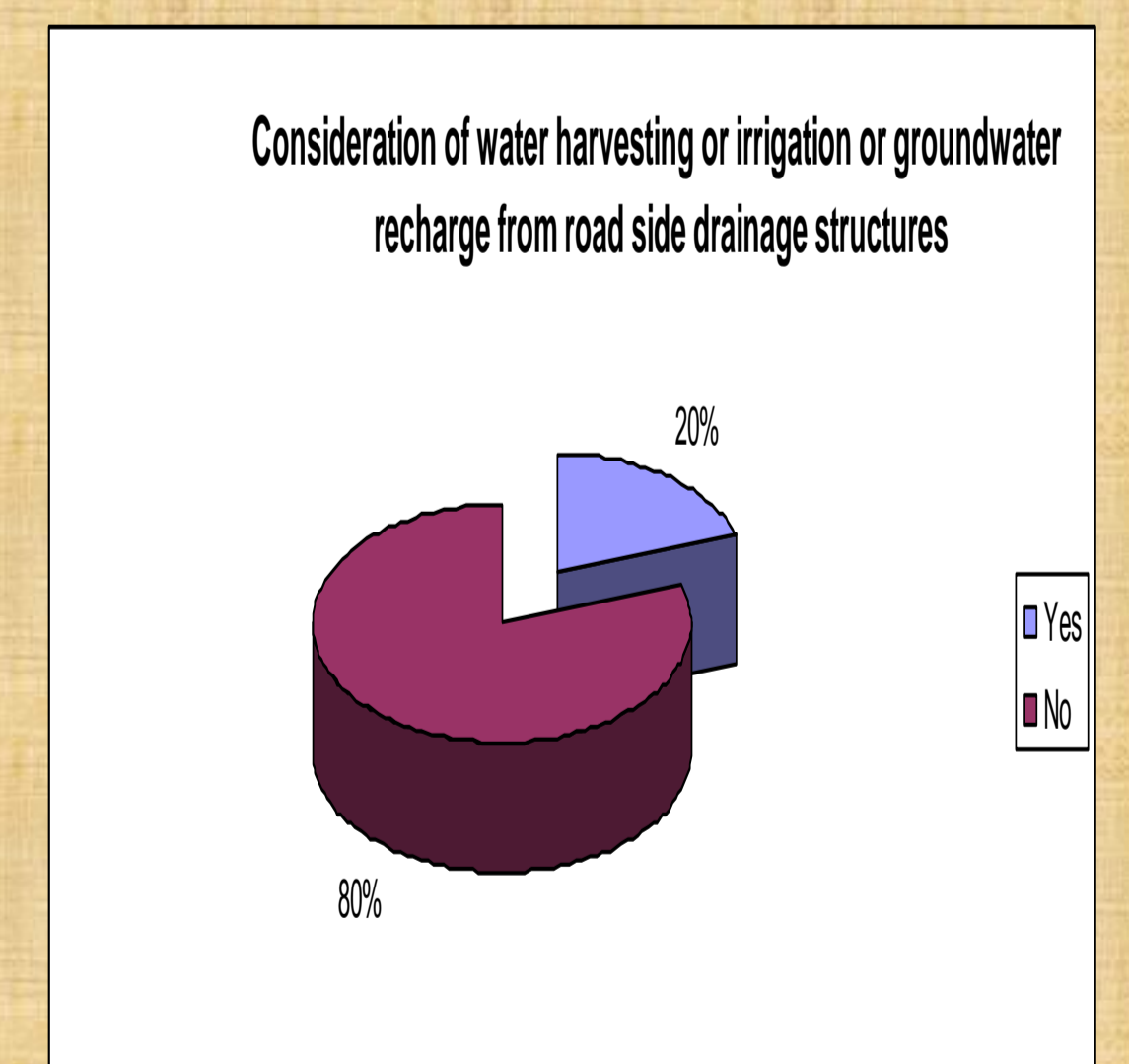
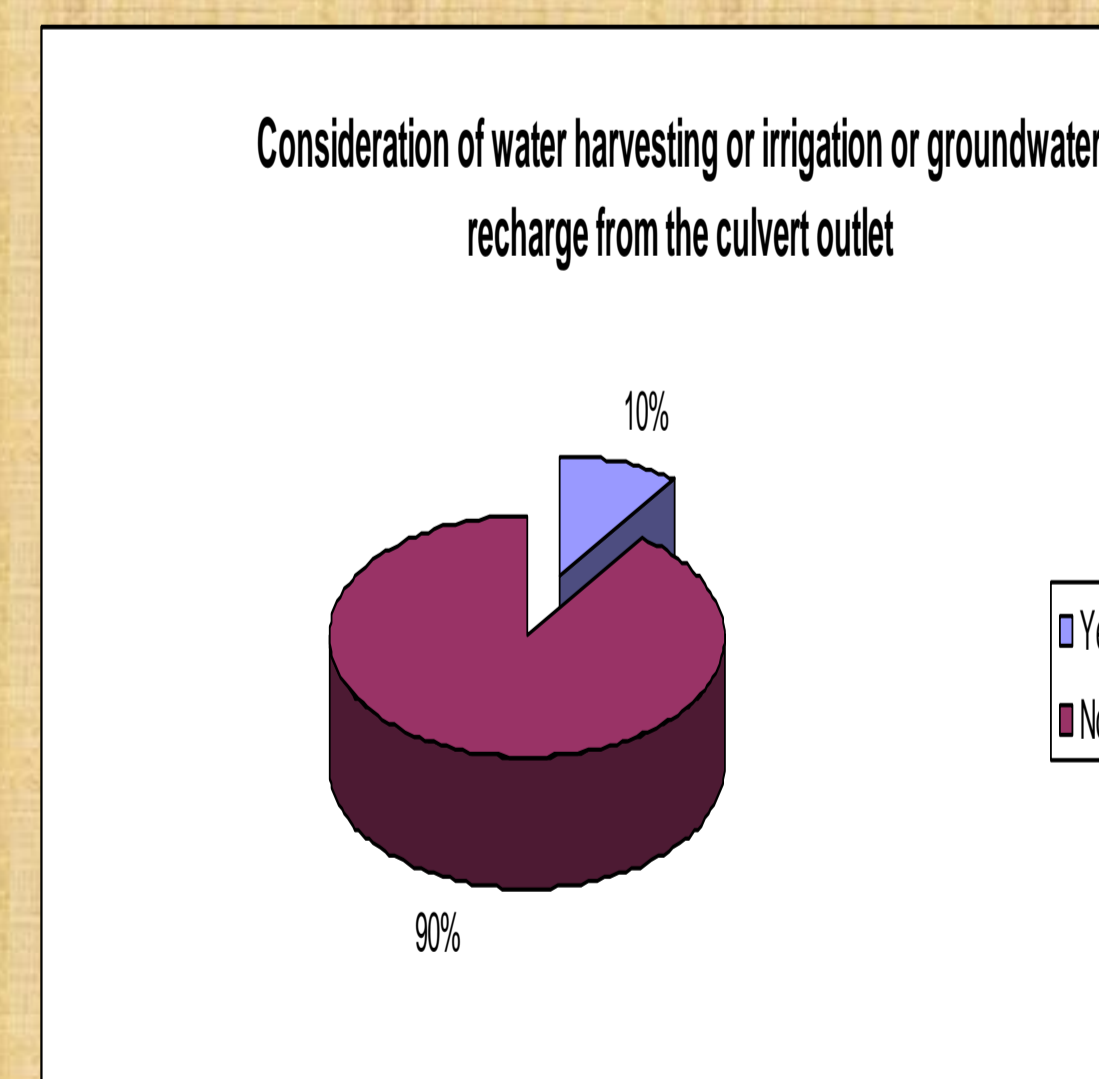
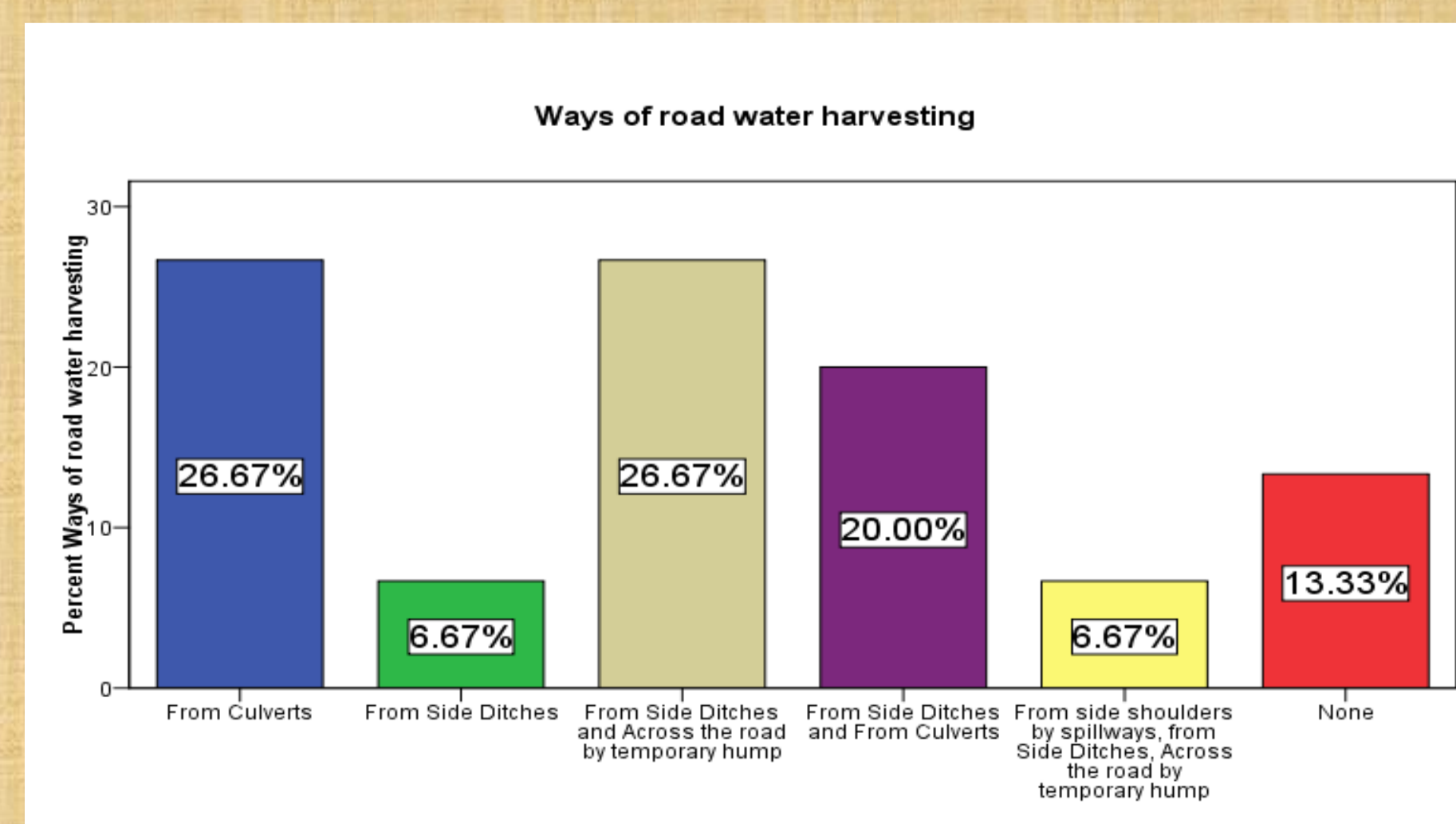


3. Environmental and Social Impact Assessment (ESIA)



Results

- The potential catchment of Mend pond from road surface is about 6,300 m² for 900m long road, and the potential road harvested water is 2282 m³ for an average annual rainfall of 517 mm/year.
- Most of water harvesting techniques in this pilot road section are in the form of farmers' initiatives by directing water to their farms by different ways, such as from culverts, side ditches, channels, or by combining these methods.



- 80% of road engineers don't consider the rainwater harvesting from road culverts, and 90% don't consider the rainwater harvesting from road side ditches.

Recommendations

- Awareness programs should be conducted for road engineers on the water harvesting concept and practices from roads.
- The RRW traditional structures along roads should be constructed/ rehabilitated, maintained and utilized due to water rights.