The study was aimed at developing a decision support system to help determine whether to construct a piped-water system in Thai rural areas. The physical setting data was retrieved and further processed as a database using the SPANS. one of the geographical information systems.

Environmental factors, conditioning village piped-water plant, were surveyed and analyzed. Essential criteria related to water resources were thus established comprising a ten-point list . The list included topography, water quantity and quality of groundwater and surface waters, rainwater quantity, aquifer substrata, groundwater depth, distance from water-source to community, and salt solis. All these limited factors were analyzed to identify suitable areas to village piped-water supply plants.

The developed database system includes two major parts: spatial data indicating physical properties of the area and non - spatial data designating characteristics related to the spatial data such as groundwater deep wells , pipe water system , demographic data and information on electricity distribution in the community. According to the specialists , water quantity and quality are the most important factors influencing an establishment of the village pipe water system as well as the development of groundwater deep wells and surface water resources. A trial of the developed system at Manchakeeree district , Khon Kaen province shows that an input data on salt soils as well as data on quantity and quality of surface water are limited. This limitation leads to a lack of adequate information concerning selection of appropriate sites for water resources development , and the provision of piped- water system. The new database system would be more effective in selecting water sources for village water supply if all the necessary input data were available. Therefore, the organizations concerned should process the data in the computer database system. According to this study , the researcher suggests that water quality should be considered as the most important indicator in selecting water sources for the village water pipe system.