Irrigation equipment in the semi-arid Northeast when geospatial information was found to be out of date. National statistics coming from different sources country was downgraded when it was found that sub-major source of uncertainty. However, map quality for a reliability of the input information systematically. This is the density of information was taken into account that global irrigation map (Siebert et al., 2005). Marks derived irrigated areas were computed to assess the quality of the available geospatial records on position and extent of irrigation areas extracted from hundreds of irrigation maps or digital atlases, maps and inventories that were often based on remote sensing (Fig. 2). For most of the countries, more than one data source was used. As the relevance and reliability of the maps varies, it was necessary to decide which geospatial record should be used in a specific sub-national unit. This was realized by applying a priority level to each record (Fig. 3). Only if the extent of already digitized irrigated areas with the highest priority level was smaller than the total irrigated area reported for the specific sub-national unit, also records with the second highest priority were considered. The distribution process was repeated down to the next lower priority level until the sum of irrigated areas in the map was equal to the irrigated area in the sub-national statistics (Fig. 4).

Two indicators quantifying the density of the used sub-national irrigation statistics and the density of the available geospatial records on position and extent of irrigated areas were computed to assess the quality of the global irrigation map (Siebert et al., 2005). Marks derived from the two indications were combined to obtain a mark for the overall map quality for each country (Fig. 5). While the density of information was taken into account that way, lack of information made it impossible to assess the reliability of the input information systematically. This is the major source of uncertainty. However, map quality for a country was downgraded when it was found that sub-national statistics coming from different sources disagreed, when statistics were found to be incomplete or when geospatial information was found to be out of date.

At the global scale, the overall map quality is good, but there are large regional differences of map quality. At the level of world regions, map quality in North America (overall mark 1.50), Southern Europe (1.35), Oceania (1.64), Northern Africa (1.64), Southern Africa (1.50) and Central Asia (1.43) is bad. Western Africa (2.05) and the Russian Federation (2.60) have the worst map quality. About 65 Mio ha of areas equipped for irrigation are located in countries where map quality is estimated to be very good, 187 Mio ha in countries with good map quality, 21 Mio ha in countries with low map quality and 5 Mio ha in countries with poor map quality. Map regions of very poor map quality do not exist anymore on the country scale. Consequently about 90% of the total irrigated areas of the world is located in countries where the map quality is assessed to be very good or good. It was found that remote sensing based inventories report higher values for the global extent of irrigated land and that there is a need for a systematic comparison of the different data sets.