

3. Results

The results obtained by the visual interpretation of the SAR images and the comparison with the data obtained from the topographic maps of 1977 are reported in this chapter. Results refer to the area under study, that is the area covered by the satellite frames, and to the period of acquisition of the satellite data.

Table 5 shows the total area covered by the features of interest in the entire study area. This include various types of aquaculture and fisheries structures, plus the salt pans.

TABLE 5
Total area covered by the classes of interest (Pangasinan province)

Class Description	Number of Units	Total Area (km ²)
Salt pans 2002	1	4.156
Fishponds 2002	587	157.723
Fishponds 2002, uncertain ¹	33	2.036
Fish pens 2001	22	1.600
Fish cages 2001	105	2.439
Fish cages 2001, uncertain ²	7	0.054
Fish cages 2002	267	1.390
Fish cages 2002, uncertain ²	16	0.019
Areas with fish traps in the open sea 2001 ³	12	18.943
Areas with fish traps inside rivers 2001 ³	6	1.703

¹ Identified in one image only, out of two or three.

² Uncertain assignment: may be a small island or a rough patch in the sea surface.

³ Polygons drawn around the areas on which fish traps were detected, to have an estimate of their extension.

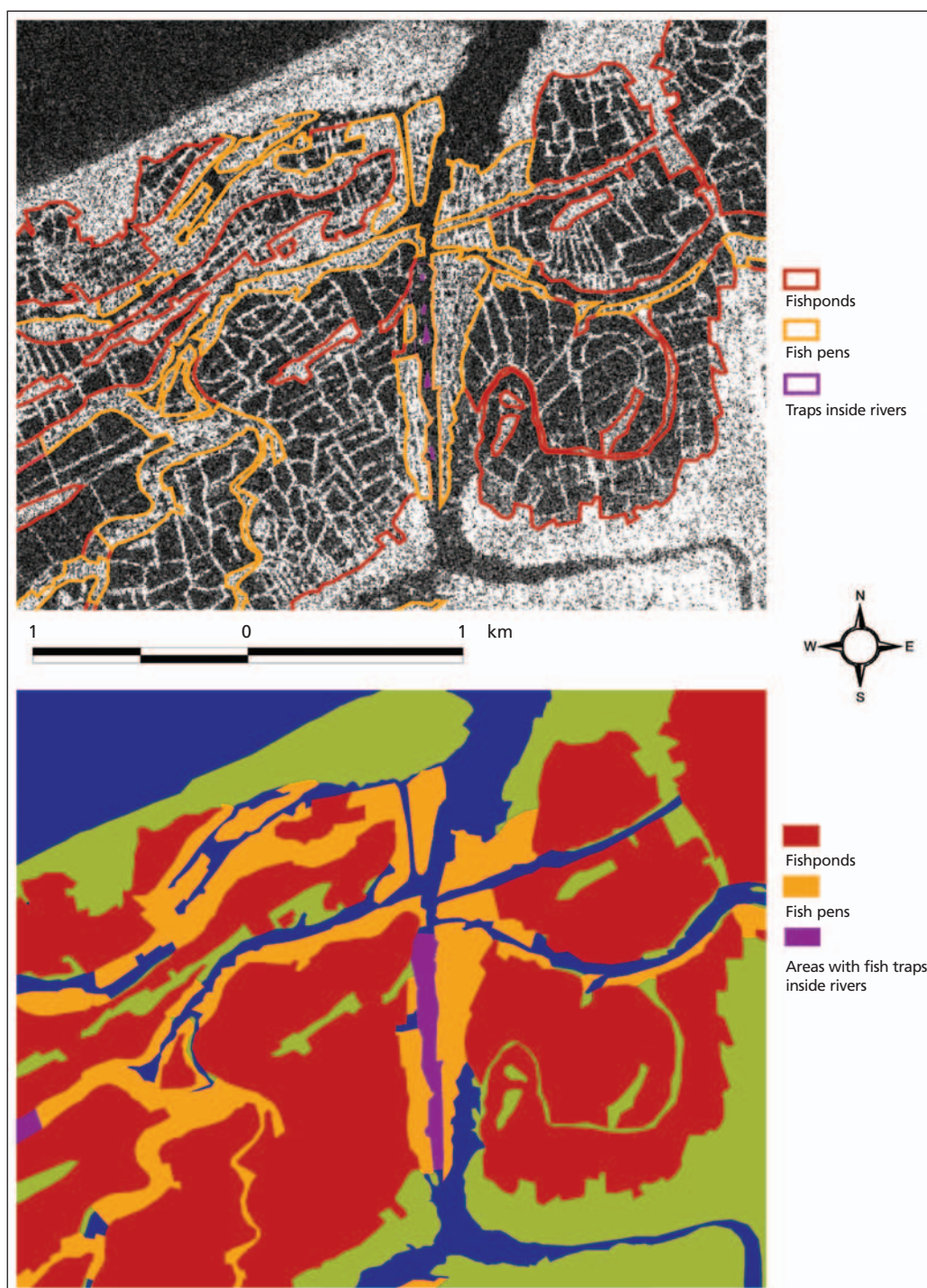
The study area covers completely the Pangasinan province, plus approximately two-thirds of La Union and a small portion of Zambales provinces. All mapped aquaculture and fisheries structures occur in the Pangasinan province only, with the exception of some fishponds (90 units covering 18.762 km²) and of some fishponds classified as uncertain (13 units covering 2.613 km²) existing in the other two provinces.

Table 6 summarizes the statistics on fish traps. These include all the segments composing the arrow-like traps, if detectable. The results obtained for each type of fisheries structure are presented in the next sections.

TABLE 6
Length of the fish traps detected in the study area

Class Description	Number of elements	Cumulative length (km)	Average length (km)	Minimum length (km)	Maximum length (km)	Standard deviation
Traps in the open sea	378	50.104	0.133	0.018	0.642	0.093
Traps inside rivers	84	7.886	0.094	0.024	0.364	0.061

FIGURE 13
Interpreted RADARSAT-1 SAR image and
the resulting map of the aquaculture and fisheries structures



3.1 FISHPONDS

Fishponds occupy the largest surface of all the structures occurring in the area. It is interesting to compare the surface occupied by fishponds in the year 2002 (excluding the class fishponds – uncertain) with their area coverage mapped in the 1977 cartography.

The cartography showed three types of fishponds: active, empty, and active containing nipa (section 2.2). Fishponds are routinely emptied for maintenance purposes, and nipa trees are cultivated inside active fishponds; thus, in order to