The updating and revision of the European Tsunami Catalogue and its implementation into a GIS platform is the main goal of TRANSFER Work Package (WP) 1. The examples shown in this panel refer to two of the main tasks involved in this WP. The first regards the inclusion of new events and the updating of existing events through paleotsunami studies (Figure 1). Evidence of paleotsunamis is derived from coastal stratigraphy because of the presence of peculiar sediments or boulders. Dating of the paleotsunami deposits helps in correlating events with historical tsunamis or previous ones. The database provides mainly two types of information of use for developing tsunami scenarios and time dependent hazard calculations: locations of past inundations and their frequency. Figure 1 is an ArcMap snapshot illustrating the location of a number of surveyed sites in southern Italy and the type information retrievable for each of them. The second main task concerns the inclusion of new events and the updating of existing events of historical (pre-instrumental and instrumental) times. Figures 2 and 3 are ArcGIS Explorer snapshots showing the database interconnection on two historical tsunamis (Messenia Straits, Italy, 28 December 1908 and Cadiz, Spain, 1978).

### TSUNAMI CATALOGUE

The inventory and characterization of tsunamigenic seismic sources in the Euro-Mediterranean area, and their inclusion in a GIS database, is covered in WP2. The TRANSFER Consortium, with main contributions from the Istituto Nazionale di Geofisica e Vulcanologia (INGV, Italy) and the National Observatory of Athens (Greece), decided that the database will be composed of three different source categories, depending on the level of knowledge: (1) individual sources that have produced a tsunami in the past, (2) faults that are considered potential sources for future tsunami, (3) zones that may contain tsunami sources.

The Category "Layer 1" (named "INDIVIDUAL SOURCES") contains sources with the highest reliability (because they actually produced a tsunami), although only a few of them are recognized to be directly related to a known fault. They are represented by an ellipse centered on the area where the source is expected to be located. The major axis of the ellipse coincides with the length and strike of the fault, while the length of the minor axis is representative of the fault dip.

The Category "Layer 2" (named "COASTAL AND OFFSHORE FAULTS") are represented as lines (representing fault strike and length) with symbols (ticks, triangles and arrows) indicating their kinematics. A fault with the date of a possible historical tsunami produced by that source is added. Modellers can use some of these sources to elaborate scenarios.

The Category "Layer 3" (named "TSunami ZONES"). Tsunami zones are represented as polygons (up to 8 vertices). They mainly show where there is the possibility that tsunamis may occur in the future but individual faults/sources cannot be drawn with certainty. These zones may also enclose elements from either category 1 or 2.

Tsunamis can be generated not only by earthquakes but also by landslides, slumps, volcanic eruptions and also by more unusual events such as mud volcanoes or rapid erosion induced by jökulhlaups. In TRANSFER we indicate these as "non-seismic sources", and their classification, characterization and inclusion in a suitable GIS database is one task of WP5. Five main categories/layerers have been established for the database classification: (1) slides, including mapped/subaerial landslides/subaups; (2) coastal failures, comprising mapped/bottom stabilised (subaerial) slides, rockfalls and debris flows; (3) volcanoes, both subaerial and submarine; (4) debris-channels, when we limit our search area with the potential to trigger tsunamigenic mass movements; (5) wide-fault areas known to have failed in the past or having the potential to trigger tsunamigenic mass movements in the future. Each category is characterized in the database by means of a number of parameters describing the geographic, geometric and physical properties of the layer members. Whenever possible, reference to known past events and to possibly generated tsunamis are given.

Examples of non-seismic sources in the Isona and Stromboli volcanic islands (Tyrrhenian sea, Italy) are shown in Figures 6 and 7, respectively, while Figure 8 illustrates the shape of the Ganos complex and of the Marmara Island debris flow in the Marmara Sea. The Isona Debris Avalanche (Figure 6), the tsunamigenic subaerial landslide occurred along the NW bank of the Stromboli island on 30 December 2002 (Figure 7) and the Ganos complex (Figure 8) can be counted in Category 3, while the 30 December 2002 tsunamigenic subaerial landslide in Stromboli and the Marmara island debris flow are members of category 2.