adopted in Quito, Ecuador in October 2016). In fact, to monitor the implementation of the SDGs, it will be important to improve the availability and access to data and statistics to ensure that no one is left behind in the information gaps.

The lack of consistency in global settlement information produced through census campaigns and released in aggregate form by **UN has promoted the science community to invest in extracting information from the available satellite remote sensing archives and plan to process future incoming imagery**. Satellite image archives provide globally-consistent measurement system of earth surface characteristics; it is updated regularly and frequently and with increased spatial resolution and still provides a synoptic overview that is considered objective.

2.2 Mapping and measuring human settlements from remote sensing

Remote sensing technology and information extraction techniques have improved steadily in the most recent years. The first attempts to map settlements globally relied on coarse scale resolution imagery. The outcomes have been used extensively for mapping mainly cities and megacities. In fact, global human settlements have mostly been mapped from low to moderate resolution (300m - 1000m spatial resolution) (Potere and Schneider 2007) and with estimates that varies significantly (Schneider, Friedl, and Potere 2010) .

Changes in the physical size of settlements have been measured from a combination of coarse and moderate resolution imagery as well as from medium resolution imagery. For example, DMSP/OLS night time lights and SPOT-VGT data were used to detect changes between 1998 and 2008 in India by (Srinivasan et al. 2013) . MODIS 500m resolution images were used by (Mertes et al. 2015) to map urban areas in East Asia from 2000 to 2010.

Landsat imagery have been also very often used to map of the built environment. Angel and his team (Angel et al. 2015) mapped 120 cities over 1990 and 2000. Taubenböck et al. (Taubenböck et al. 2012) conducted a systematic analysis of 27 current mega cities using multi-temporal Landsat data from 1975, 1990, 2000 and TerraSar-X data from 2010.

The availability and the processing of new generation of global medium resolution imagery have provided new opportunities to generate built-up information. The Terrasar-X was also used in the TanDEM-X mission to generate a Global Urban Footprint (GUF) for the years 2011-2013 by (Esch et al. 2013). Global finer scale built-up areas mapping from Landsat was delivered by the Monitoring of Global Land Cover (FROM-GLC) project for the year 2006 as reported in (Peng Gong et al. 2013) (P. Gong and Howarth 1992). In FROM-GLC, only one epoch (circa 2006) was processed, and the impervious surfaces resulted with not satisfactory classification accuracy as presented in (Ban, Gong, and Giri 2015) and (Peng Gong et al. 2013). Successive experimental activity tried to inject in FROM-GLC output the urban or impervious information derived from third-parts, low-resolution satellite-derived information. Finally, a 30m resolution global land cover (GlobeLand30) was produced in 2014 (Yu et al. 2014).

The GHSL builds on past experiences and on different resolution settlement products and reports on processing 40 years of Landsat imagery for mapping the global built-up areas from 1975 to 2014 (M Pesaresi et al. 2016). The section bellow summarises the methods, the results the limitations and the way forward.