Box 5.1: Traditional and innovative approaches

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sources and methodologies. For a comprehensive and detailed overview of each method, see the review paper by Rodríguez-Sánchez and Tjaden (2023). In that review, a detailed explanation of how the different methods work, typical databases used, and their strengths/weaknesses are documented. Depending on which definition of irregular migration we employ, some methods might be better suited than others to capture the different operationalizations, especially as these will be based on different data sources

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> By "Traditional" we refer to approaches covered by previous methodological overviews (Jandl, 2011; Pinkerton et al., 2004) on which our overview builds. These are well established methods that are used to estimate irregular migration across the world. We included these traditional methods in our review out of a desire to be comprehensive, but also because some of the innovations build from well-established methods, like the residual approach. We defined "Innovative" approaches as those methods that either use novel data sources (e.g., digital behavioural data) or apply a new estimation method to standard data sources. These approaches improve upon some of the limitations of established methods. The innovative approaches were identified through literature review and discussions with experts.

Estimating irregular migrant stocks and, especially, irregular migration flows, despite important advances, remains a challenging endeavour. Methods estimating stocks measure the total number of irregular migrants residing in a country at a specific point in time (e.g., the year 2022), whereas methods estimating flows capture changes in that population over a defined period (e.g., 2015–2020), attaining measures of inflows or outflows. MIrreM's innovative pilot studies which are summarized in the next chapter, and which were based on this overview, are aimed at tackling some of these challenges.

This chapter of the Handbook is intended to highlight some of the most innovative aspects of approaches we found through our scoping review for measuring both stocks and flows. A quick overview of the methodologies we found in this search can be found in Table 1. We grouped the methods based on their core data (e.g., government data, non-government data, survey, mixed data, and digital data) and estimation strategies, plus a brief description of their main idea, rather than focusing on minor differences across methods. Our review encompasses both traditional and innovative methods (see Box 1).