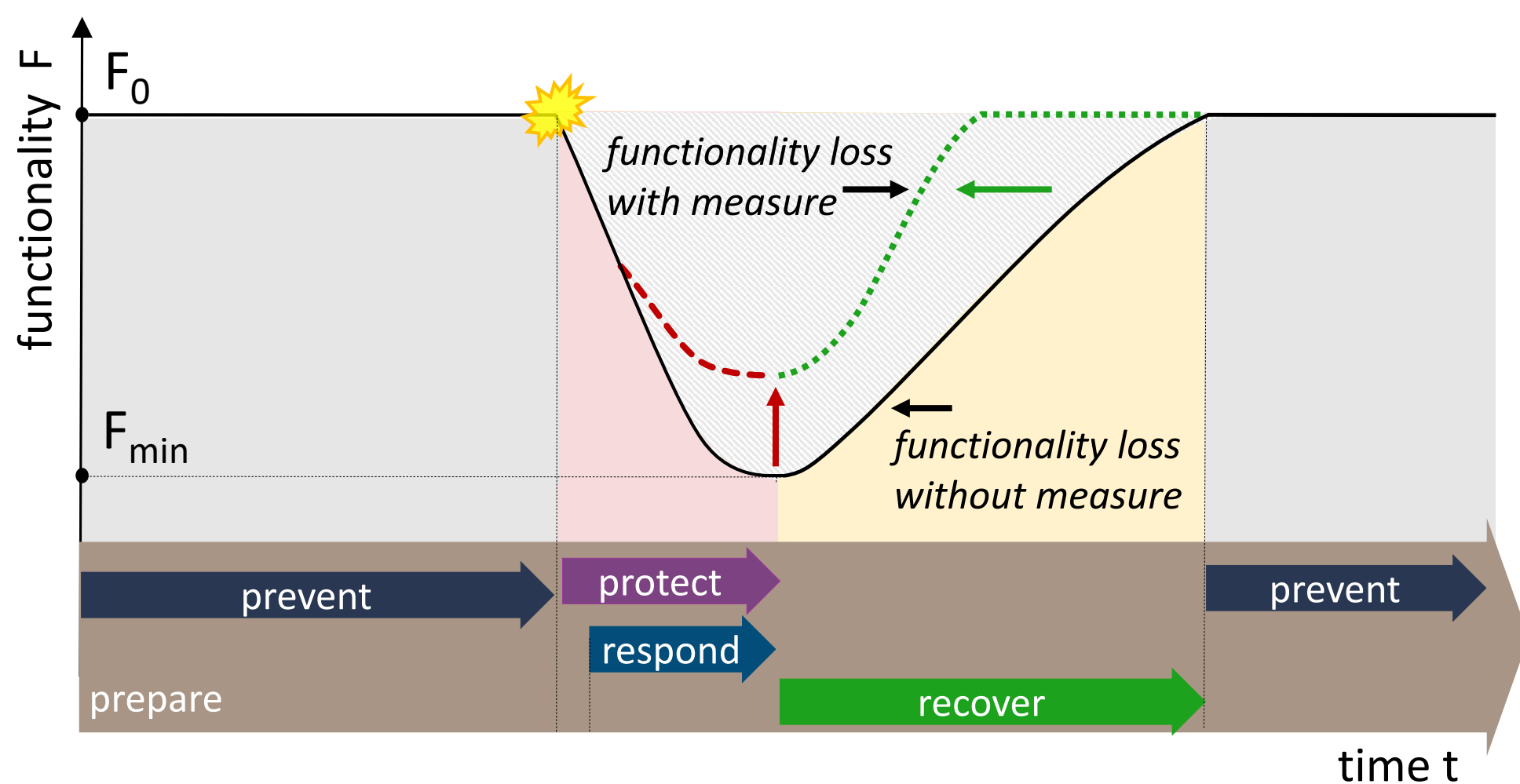




## INTRODUCTION & SCOPE OF WORK

Dealing with disruptive events is a major challenge for road infrastructure owners and managers. To maintain the functionality of the road infrastructure during disruptive events or to restore it as quickly as possible after such events, applicable concepts and methodologies are required, which enable a systematic assessment of the functionality of the road infrastructure.

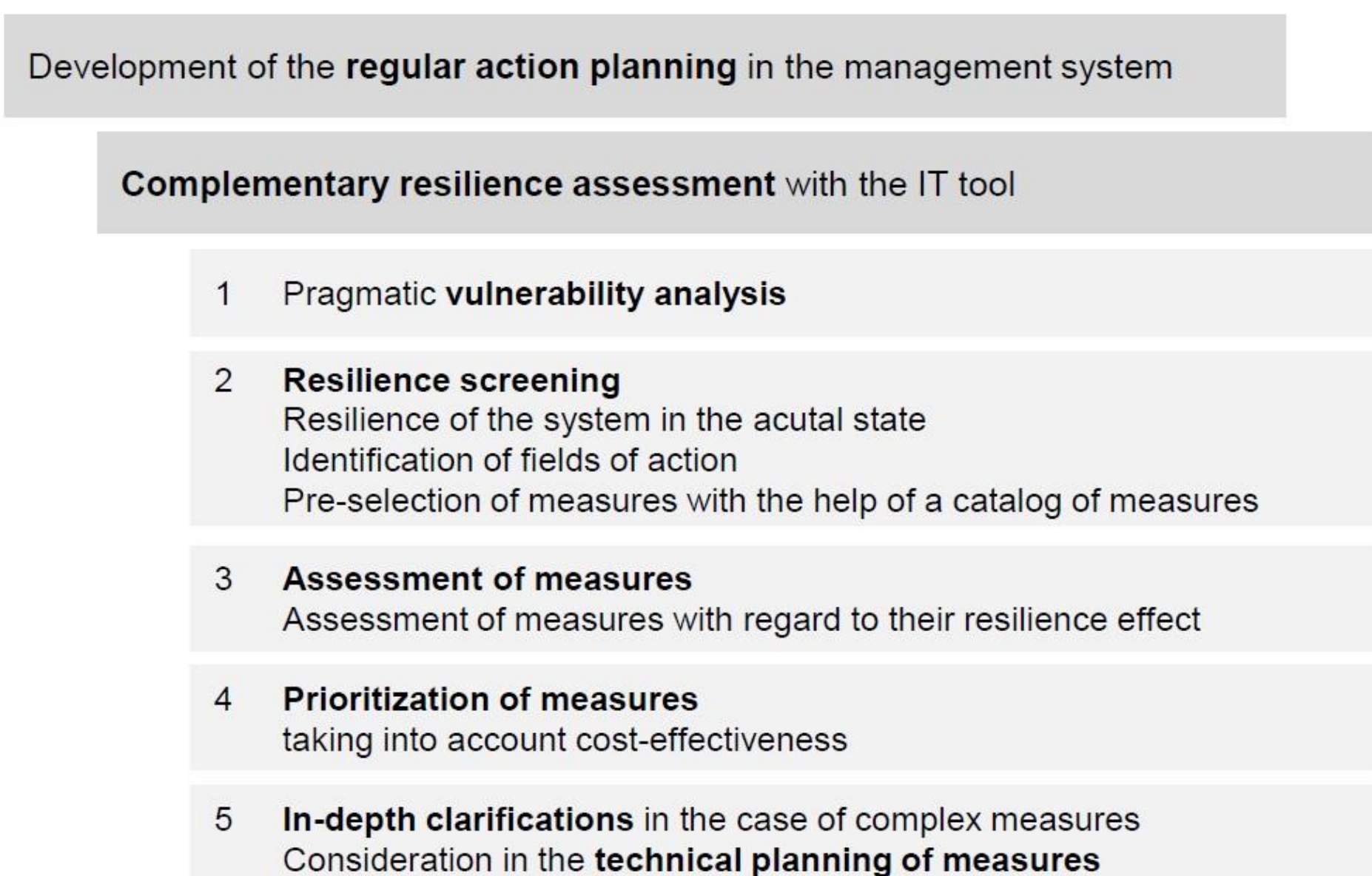


**Fig 1. Simplified functionality curve of a system in relation to the 5 phases of the resilience cycle**

This research project builds on the methodological approach and considerations from Deublein et al. (2021)<sup>1</sup> by optimizing and further developing the existing approach to assessing the resilience of road infrastructures in terms of methodology and content (Fig 1).

## METHODOLOGICAL CONCEPT FOR RESILIENCE ASSESSMENT

Fig. 2 below schematically shows the resilience assessment process as it presents itself to the user.



**Fig 2. Resilience assessment process**

In this way, different infrastructure elements can be assessed on object level (e.g. bridges, tunnels, road sections). As a result an overview of possible resilience measures and their impact on the system's resilience is given (Anastassiadou et al., 2020)<sup>2</sup>.

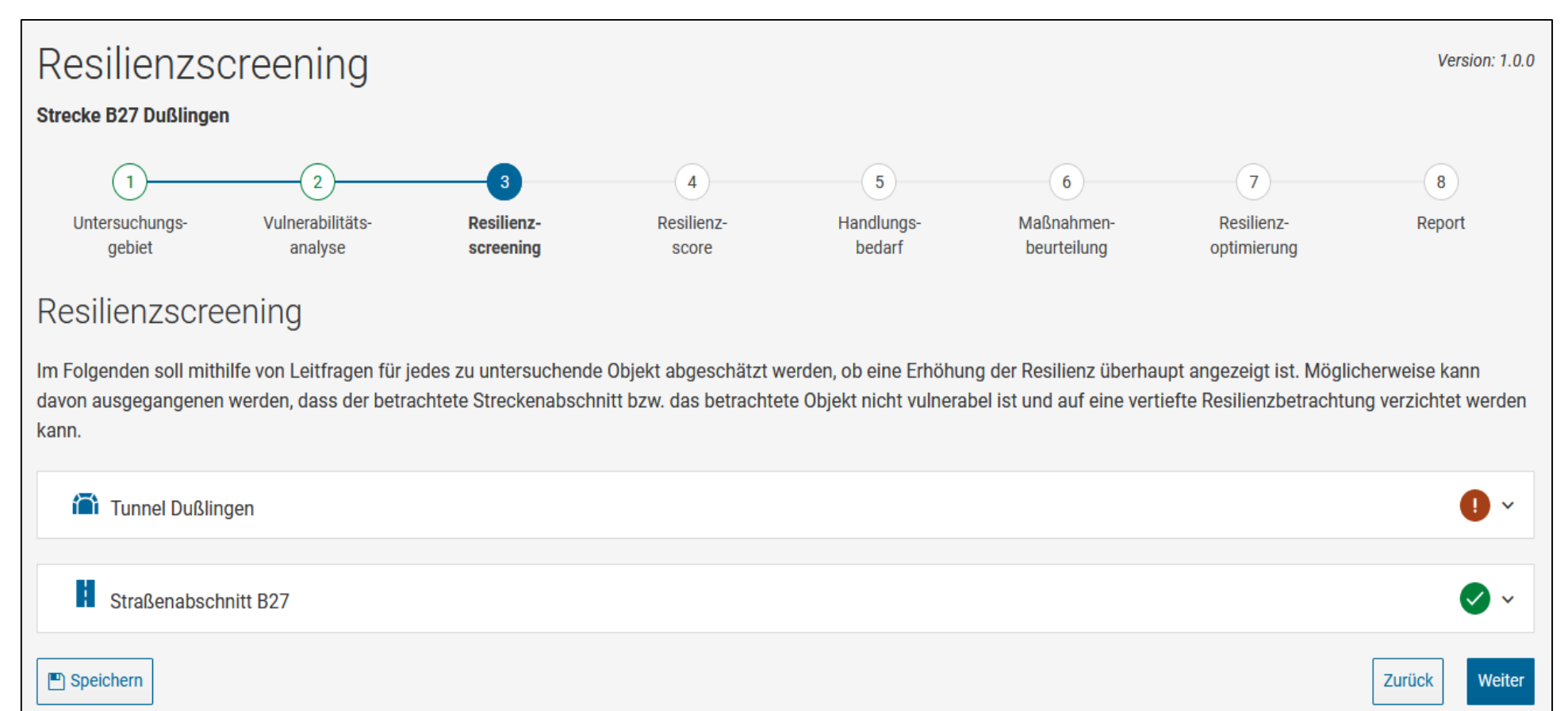
# POSTER SESSION

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## Developing an IT-Tool for Resilience Assessment

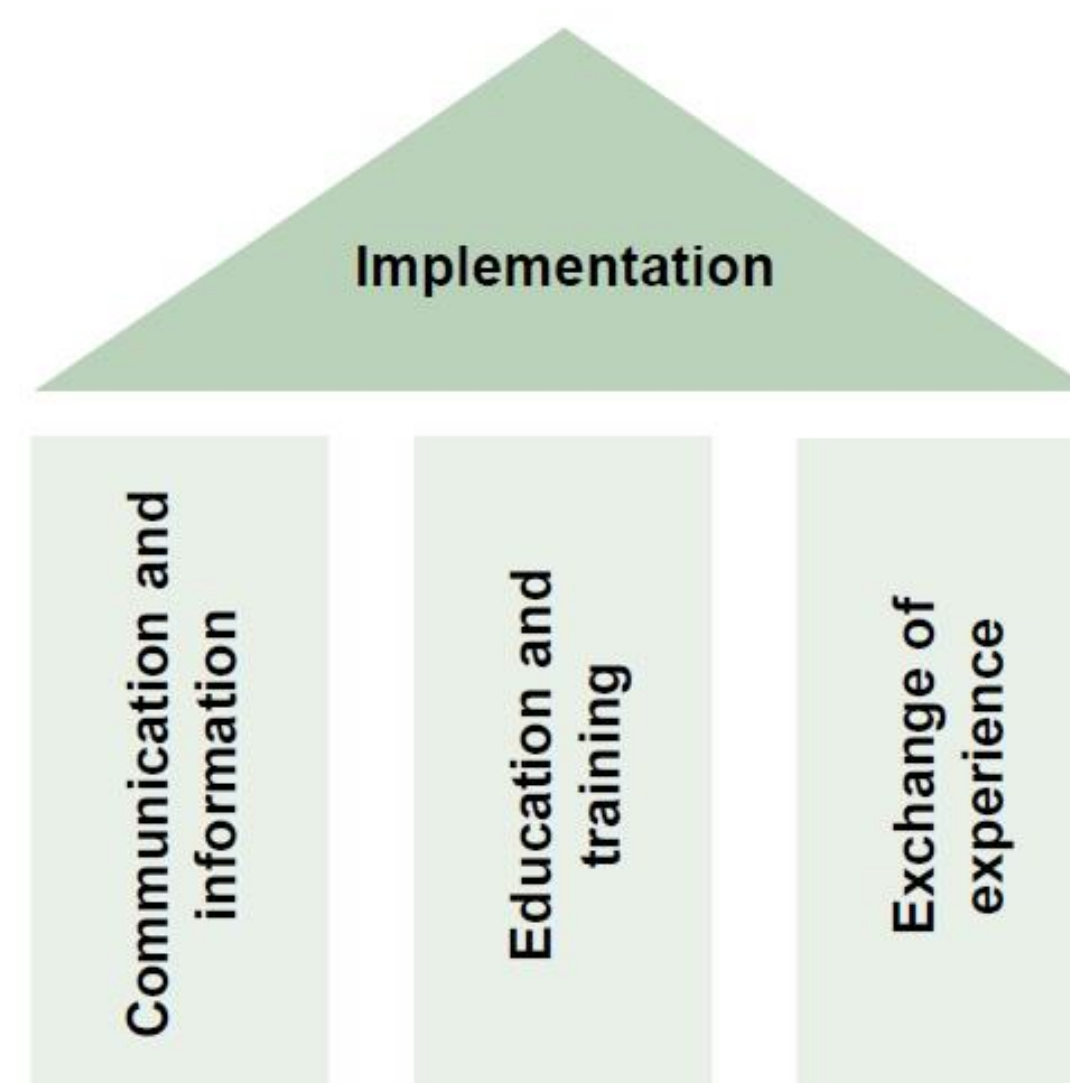
### TRANSFER INTO PRACTICE

In order to establish the usability of the methodology, a software tool (Fig 3) as well as an implementation concept (Fig 4) were developed.



**Fig 3. Graphic user interface of the developed software tool**

The software tool allows users to pragmatically assess the resilience of a system as well as the impact of measures on the system's resilience. With the implementation of the methodology in an application-oriented tool, the foundations are laid to be able to consider the issue of resilience of road sections or network elements of the road network in existing management systems and action planning in the future.



**Communication and information:** existing websites, newsletters, networks, working groups and associations.

**Education and training:** tutorials, webinars, day courses etc.

**Exchange of experience:** Short term: increase awareness & acceptance. Medium term: further development based on the gained experience.

**Fig 4. Three pillars of the implementation concept**

## ACKNOWLEDGEMENTS

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1: [https://www.bast.de/EN/Publications/BAST-topics/Downloads/TRA-resilience.pdf?\\_\\_blob=publicationFile&v=2](https://www.bast.de/EN/Publications/BAST-topics/Downloads/TRA-resilience.pdf?__blob=publicationFile&v=2)

2: [https://bast.opus.hbz-nrw.de/opus45-bast/frontdoor/deliver/index/docId/2514/file/B165+BF\\_Gesamt.pdf](https://bast.opus.hbz-nrw.de/opus45-bast/frontdoor/deliver/index/docId/2514/file/B165+BF_Gesamt.pdf)

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