

Project *brief*

Thünen Institute of Rural Studies

2023/13a

NatApp – Smartphone-supported documentation of nature conservation measures

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- **NatApp is a free tool for planning, implementing and documenting nature conservation measures on agricultural land.**
- **The tool aims to simplify the implementation and management of measures for farmers and agricultural authorities.**
- **The documentation of the processing steps creates transparency in the implementation of the measures.**

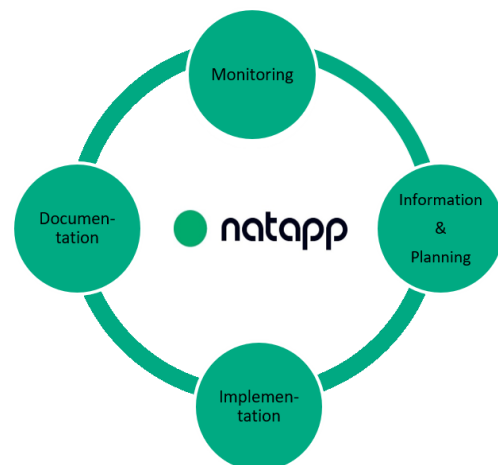
Background and objective

Small-scale nature conservation measures within the framework of agri-environmental and climate measures (AECM) are particularly effective for the protection of biodiversity in the agricultural landscape. However, the federal states only include such measures in their funding programs to a limited extent. One reason for this is the high administrative effort. Farmers seldomly implement such measures, due to the complicated application process and the risk of sanctions. The NatApp shall facilitate the implementation of small-scale AECMs, especially for farms and administrations.

In the previous project "Konzept Pilot NatApp" the demands on the NatApp were specified in co-design process with agricultural administration of selected federal states. These demands include the necessary interfaces for data exchange and documentation obligations. For a coordinated set of AECMs:

- An integrated "information desk" (Infothek) describes the measures offered in the respective states and supports farmers in planning measures.
- A schedule, as well as reminders and warning messages, facilitate the correct implementation of the measures and reduce the risk of sanctions.
- The farmers document the specified management activities independently with the NatApp, for example using GPS and geotagged photos.
- With this documentation, on-site checks by the administrations are reduced.

During this project phase, the prototype of the NatApp was to be programmed and tested.



Approach

For the content and structure of the information desk, we used surveys to clarify which information the respective state administrations provide to farmers about the AECM and which information farmers need.

Based on this requirement-analysis, we defined the input parameters and formats for the information on the funding programs, applications and measures that are to be displayed in the information desk.

For legally compliant documentation, the requirements for geotagged photos and other GPS and GIS functions were acquired and evaluated under practical conditions for content and deadlines and were ultimately implemented in the app.

In project-accompanying workshops with demonstration farms, agricultural administrations and associations from agriculture and nature conservation we discussed further development and application potentials of the NatApp. The obtained feedback was considered in the further development. We tested the operability and practicability of the application on 20

demonstration farms in Bavaria, Brandenburg, North Rhine-Westphalia and Thuringia.

Results

With the [Naturschutz-App „NatApp“](#) we provide farmers a tool that simplifies the planning, implementation and documentation of nature conservation measures. The tool consists of three individual modules.

The information desk “[Infothek](#)”, designed as a web application, provides the necessary information on nature conservation measures, their application and management in a clear and comprehensible manner. Filter options help to narrow down potentially suitable measures. The implementation of the measures takes place via an account-based access. A user-friendly user interface enables the step-by-step entry of all relevant information into the database of the information desk.

In the web-based “parcel and documentation management module”, fields, measures and documentations are managed. The plots can be imported from the application programs, digital field registers or created using the integrated GIS tool. Measures selected from the information desk can be assigned to the individual parcels, including the funding requirements and deadlines to be observed.

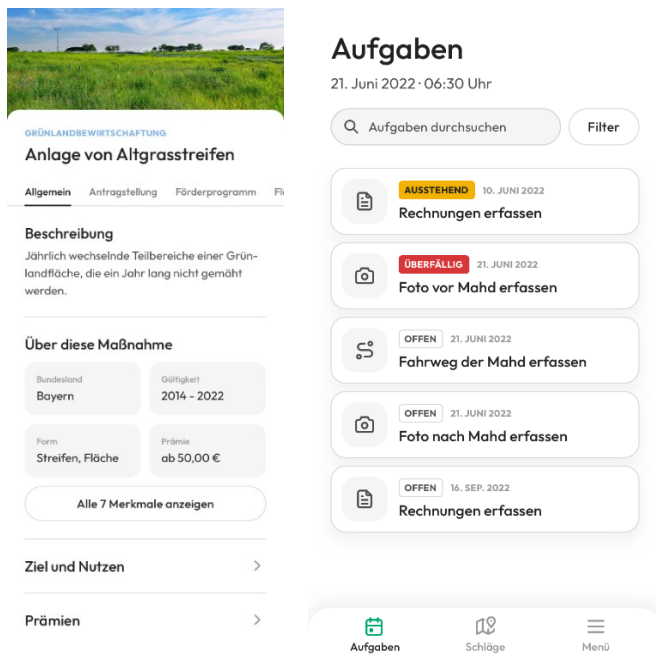


Fig. 1: Screenshots of the information desk and the schedule of tasks

Throughout the entire period in which the measures are being carried out, a schedule of tasks and push-up notifications support compliance with management requirements, deadlines and documentation requirements (Fig. 1).

Documentation in the field is carried out using an app developed for Android and iOS. With the help of the navigation function, users are guided to the correct parcel. There, the farms document the individual steps of implementing the measures using their smartphone or tablet. For this purpose, geotagged photos can be taken, driving tracks recorded as GPS-tracks or other documents such as seed invoices stored in the app in a tamper-proof manner (Fig. 2). Where necessary, these documentations can be sent to the agricultural authorities.

The individual modules of the NatApp are linked via a protected user account. This ensures synchronization between the devices. Comprehensive role and rights management enables the app to be used by several users per farm.

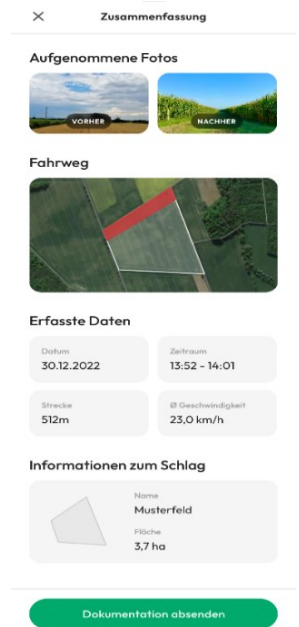


Fig. 2: Summary of the prepared documentations

Conclusion and perspectives

For farms, NatApp simplifies documentation and reduces the administrative effort, as nature conservation parcels are already documented during processing. The complete and transparent documentation reduces the potential risk of being sanctioned for implemented measures.

During the project period, the federal state administrations have increasingly developed their own photo apps to provide evidence. In future, geotag photos will be a mandatory addition to the area monitoring system for area related agricultural funds. The need for the NatApp as an overall system for agricultural administrations is therefore no longer given. However, it is conceivable to integrate the information desk into the applications of the federal states. In addition, there are various application and extensions options for the NatApp. For example, for private nature conservation measures and projects or other programs that require a suitable monitoring tool.

By integrating additional digital tools such as satellite data, weather forecasting apps or species identification apps into the NatApp, the range of applications can be expanded. The development under an open source license enables the use and further development of the NatApp by interested third parties.

Weitere Informationen

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Duration

07/2020 – 12/2022

Project-ID

2293

Funded by

Bundesanstalt für Landwirtschaft und Ernährung
 Landwirtschaftliche Rentenbank

