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Adding variety to landscapes with the help of flower strips alongside transportation routes.

More room for biological variety in cultivated landscapes

The “Eh da“ initiative

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Finding areas to promote biodiversity in cultivated landscapes is proving to be more and more difficult, as these surfaces are and will continue to be used for agriculture, residential developments and traffic routes instead.
These circumstances lead to the basic idea of the “Eh da” initiative, namely to use existing land resources as efficiently as possible for promoting insect diversity in particular. “Eh da” surfaces can provide these opportunities and have so far rather been underestimated as a land resource.

The insect population decline [1] is a topic widely discussed at the moment. There are many complex reasons for insect mortality; one of them most definitely is the loss of living space in cultivated landscapes. As most suitable surfaces are already used for infrastructure, residential developments, agriculture or tourism [2] and will continue to be used as such in the future, there is a strong need for additional land – which is hard to come by. The authors therefore deduced that the scant remaining land resources should be used to promote biological diversity as effectively as possible. The concept of the “Eh da” land was born: open space areas in agricultural landscapes and settlements which are neither commercially used nor maintained for nature conservation and can therefore be used for ecological upgrading. The term “Eh da” land was coined with the common business slang expression “Eh-da-Kosten” in mind (i.e. accounted costs providing leeway for investment decisions). Accordingly, “Eh da” surfaces are surfaces which are already existent anyway (what “eh da” means in German) and are used quite functionally, but can also additionally be utilized for promoting biological diversity.

The “Eh da” initiative started in 2012 under the direction of “Forum Moderne Landwirtschaft e.V“. During the first project phase, an assessment of the total “Eh da” area potential in Germany was conducted; since 2014, projects are being carried out at communal level. The current sponsor of the “Eh da” initiative is the *Institut für Agrarökologie (IfA)* of Rhineland-Palatinate’s non-profit research institution *RLP AgroScience GmbH*. At the end of 2018, the “Eh da areas” concept was recognized as official project of the UN decade on Biodiversity [3]. In this article, we learn about the concept itself, the status of the initiative and possibilities for promoting insect diversity on “Eh da” surfaces. There’s an easy answer to the often asked question about the initiative’s aim: To add more variety to our landscapes, of course!

What are “Eh da” surfaces?

“Eh da” surfaces are open space areas which are neither commercially used nor maintained for nature conservation. They are located in

agricultural landscapes and settlement areas. Local "Eh da" surfaces are recorded on the basis of geo data [4]. As a first step, the nationally harmonized geo data basis of the authoritative real estate cadastre information system (ALKIS, [5]) is consulted, with a focus on the following area categories: road traffic, walkway, square, wasteland, vegetationless area, area of special functional character, railway and reservoirs. Those areas are often publicly owned, thereby enabling access through local authorities. Secondly, the areas identified according to the ALKIS categories are intersected (based on geodata) with the NDVI (normalised difference vegetation index) generated from infrared channel aerial photographs, so that sealed areas (i.e. road surfaces, buildings) can be filtered out [6]. As a last step, the detected areas are mapped.

How many potential "Eh da" surfaces are there in Germany? That's what the "Eh da" initiative tried to find out before it began its project work, by employing the aforementioned geodata-based methods. Different bio-geographical regions were selected in order to determine the "Eh da" area potential (Fig. 1). Areas available for usage as "Eh da" surfaces consequently make up two to six percent of the total landscape (minus forests and water bodies; higher accordingly for agricultural landscapes and settlement areas). This percentage is rather high and somewhat exceeds the initial expectations of the "Eh da" team. By now, additional data accumulated from other municipalities has confirmed these results (see table 1). In light of these dimensions, it's no exaggeration to say that "Eh da" surfaces can be defined as one of Germany's most neglected land area categories, especially when considered under the aspect of saving biological diversity. At project level, targeted "revaluation areas" are being selected from all potential surfaces.

How do these surfaces present themselves within the landscape? "Eh da" areas are commonly located near traffic routes and train paths; they are traffic islands, dams, embankments, communal green spaces, spandrels in the agricultural landscape or spaces around rainwater retention basins. By no means are they only small areas (although being often referred to as such in discussions): "Eh da" spaces often occupy large plots of land, they are frequently longitudinal (and quite comprehensive in size when accompanying traffic for example), and rarely compact (i.e. spandrels between roads or rainwater retention basins) [7, 8]. A differentiation based on the ALKIS categories is depicted in Fig. 2. Approximately 2/3 of the potential "Eh da" areas are located in the immediate vicinity of traffic routes, followed closely by agricultural corner areas (spandrels) and communal green areas. Railway embankments and the spaces around rainwater retention basins make up a smaller percentage.

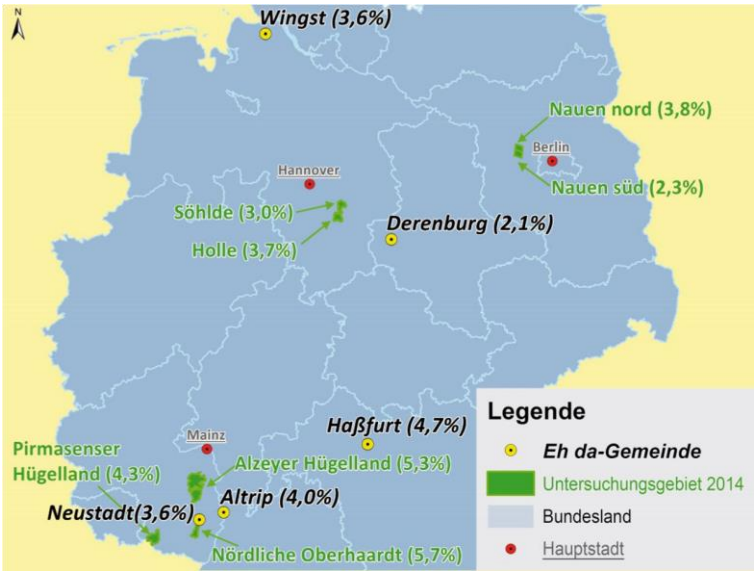


FIG. 1 Potential "Eh da" areas in selected regions and municipalities of Germany. Data source: GeoBasis-DE / BKG 2018, Cartography: RLP AgroScience, 06/2018.

Legend:
"Eh da" municipality
Area investigated in 2014
Federal state
Capital city

TAB 1. "EH DA" SURFACE SHARES IN REGIONAL COMPARISON

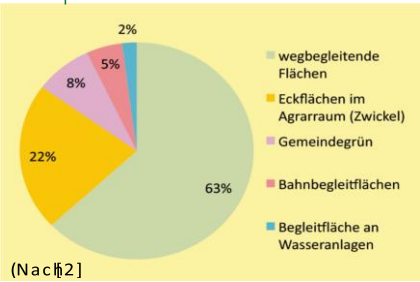
Location	Total surface area	Agriculture	Forest	Settlements/ Traffic	Pot. "Eh da" areas[5]
Germany[1]	100 %	52 %	30 %	14 %	2,9 %
Derenburg[2] (Sachsen-Anhalt)	100 %	77 %	14 %	7 %	2,1 %
Haßfurt[2] (Bayern)	100 %	53 %	22 %	18 %	4,7 %
Neustadt/Wstr.[2] (Rhineland-Pal.)	100 %	35 %	43 %	20 %	3,6 %
Wingst[3] (Niedersachsen)	100 %	60 %	24 %	Undefined	3,6 %
Altrip[4] (Rhineland-Pal.)	100 %	27 %	23 %	26 %	4,0 %

Data sources: [1]Destatis 2014, [2]ALKIS 2016, [3]OpenStreetMap 2016, [4]ALKIS 2017
[5]own research based on ALKIS, RLP AgroScience

IN BRIEF

*"Eh da" areas are a **neglected land resource** when it comes to promoting biological diversity.*
*"Eh da" areas can be revaluated ecologically with **only limited effort**.*
*"**Ecological revaluation**" comprises the promotion of plants and abiotic structural diversity.*
***Municipalities** are the focal point of a project.*
*In the biotope network, "Eh da" areas can be integrated in initiatives to **promote biodiversity**.*

FIG. 2 CATEGORIES OF "EH DA" AREAS



Legend:
- roadside areas
- agricultural corner areas (spandrels)
- communal green spaces
- railway adjacent spaces
- areas around water basins

As per [2]

FIG. 3 Erosion on areas next to traffic routes. A vegetation cover serves as erosion protection on many "Eh da" areas close to transport routes, which is non-existent in this example.

Possibilities and limitations of the "Eh da" concept

The unexpectedly high percentage of potential "Eh da" areas was the crucial factor in the decision to initiate "Eh da" projects on a municipal level. They are voluntary in character and are often associated with other initiatives to further biodiversity. The initiative's basic idea, namely to enforce utilizing existent spaces to promote biological diversity, however, meets with certain limitations:

- First of all, there are technical reasons: The conservation of organisms and living communities in need of large-scale land areas is not considered a protection target on "Eh da" areas.
- "Eh da" areas can exhibit features which make an ecological upgrade impossible or hinder it considerably. This includes, for example, the protection against erosion on traffic ways (Fig. 3), the ensuring of traffic safety on the roads or aesthetical demands on land spaces within the city limits.
- Not all animals and plants populating "Eh da" areas are welcome (see "Critical issues")
- Lastly, not all municipalities are willing to carry out such a project (for a variety of reasons).

A project always starts with thoroughly analysing the "Eh da" areas on site, for instance to identify any areas "worth" protecting. Preserving these is the main goal of every project. As a rule, this requires a certain amount of communication on site. Blooming flower strips are quite popular in most municipalities, but it takes a lot of work to convince residents that ravines, raw soil biotopes or wood stacks are also worth preserving. Next, all possibilities of ecological revaluation are to be explored. The establishment of protection objectives is essential here ("protection objectives" are systematic or ecologic groups of organisms, as opposed to "biodiversity" as a whole or "endangered species"). Insects are the focal point of the initiative [8]. It is important to convey these protection objectives in a comprehensible manner to members of the public and to not only address scientific experts (who play a big role during measure determination, planning and monitoring), but interested citizens or communal decision-makers in particular. Table 2 summarizes a few of those protection objectives recommended by the "Eh da" team at this point in time.

TAB 2. PROTECTION OBJECTIVES SUITABLE FOR "EH DA" AREAS WHICH ARE CURRENTLY RECOMMENDED FOR PROJECTS

Protection objective	Measure
Honey bee	Sowing/planting of bee plants with a flowering time not coinciding with the flowering time of mass breeding plants such as rapeseed
Wild bees	Creation of specific collective, breeding and hibernation habitats
Flower-visiting insects	Establishment of flower diversity and habitats including food crops for larvae stages
Predators, beneficial insects	Creation of habitats for living/hibernation and larvae stages
Wood plants	Planting of rare woody crops and flowering shrubs
Aquatic organisms	Maintenance of shore areas in rainwater retention basins
Insect diversity	Maintenance of habitats promoting insect diversity, especially for larvae stages

FIG. 4 One-year and two-year flowering seeds. Since there is a variety of different flowering seeds available, it is important to incorporate local experience to determine which mixture is most appropriate. Another important factor when deciding between one-year and two-year flowering seeds is how long the surface areas are available. Also, seed costs and maintenance effort for the respective areas can differ significantly.

TAB 3. RECOMMENDED MEASURES TO PROMOTE FLOWER DIVERSITY (OVERVIEW)

Flower patches (one year)	**Esp. promotion of honeybees, many wild bees, flower-visiting insects**
Flower patches (two years), regional seeds	**Promotion of many specialized wild bees and flower-visiting insects**
Targeted mowing times	**Promotion of domestic flowering plants**
Phased mowing (at staggered intervals, spatially shifted)	**Promotion of domestic flowering plants at different flowering times**
Flowering woody crops	**Promotion of agrobiodiversity and flower diversity**
Emaciation	**Promotion of habitats low in nutrients**

In no way does the "Eh da" concept constitute a universal solution to the complex problem of insect decline. Due to the considerable area coverage and the various methods for ecological upgrading it can, however, significantly contribute to promoting insect diversity.

Promotion of diverse vegetation

"Eh da" surfaces offer room for diverse vegetation, including flower and blossom variety. Planting flowering seeds is a common method to promote honeybees, wild bees and other flower-visiting insects [9]. However, not every flowering seed is suitable for every location: local experience plays an important role when deciding for the appropriate seed mixture. To further support wild bee population, perennial seeds and domestic plants are preferable. Sown flowering areas have become so popular one can easily forget that they are by no means the only or even the most obvious blossom promotion method. It is therefore important to represent the variety of the different procedures for blossom promotion (Table 3, Fig. 4).

Targeted mowing is an often underestimated method when it comes to promoting flowering plants. It is cost-effective and fosters the regional plant diversity [10].

SCHEMATIC APPROACH FOR "EH DA" PROJECTS:

- *Launching on municipal level (can be initiated by everyone)*
- *Drafting of an "Eh da" area map through personal initiative or by contacting RLP AgroScience via www.ehda.agroscience.de*
- *Designating a „Caretaker" who manages the project on site*
- *Funding research, if applicable*
- *Communication within the municipality (throughout the entire project)*
- *Drafting a project plan*
- *Execution of the planned measures*
- *Monitoring (if applicable), documentation of the measures*
- *Follow-up care (e.g. with the help of "area sponsors")*

FIG. 5 Example of *phased mowing*. Certain plots are being mowed at staggered intervals, spatially shifted, so that there are always flowers in bloom, promoting the total variety of blooming plants.

Mowing times are set to allow for bloom formation, maybe even seed formation. Especially for "Eh da" areas, a method called phased mowing is recommended. It can be defined as a sub-area specific approach: one plot is mowed, while the flowers are left standing in a second plot. Not until the flowers in the first plot have grown again is the second plot worked on (Fig. 5).

But what can be done when "Eh da" areas exhibit a high nutrient content and are covered with grass-dominated plant societies? Emaciation leads to a decrease in the soil's nutrient content, as the mown grass is removed permanently and the grounds are not fertilized. However, it usually takes several years for the outcome to be successful, so bigger spaces are required to achieve an effect. Another reasonable idea is to plant flowering woody species to not only promote flower-visiting insects, but obtain other positive results: flowering shrubs can increase the scenic appeal, and planting rare cultivated woody plants and species contributes to promoting agrobiodiversity [11]. Regional fruit tree species such as cider pears, but also rare species such as medlar (*Mespilus germanica*) or service trees (*Sorbus domestica*) (Fig. 6) are an appropriate choice here.

The term "insect-promoting vegetation" by no means only refers to flowering plants (Fig. 7). It has to be communicated within the scope of the project that in order to promote the most popular flower-visiting insects (butterflies, bees, hoverflies etc.), one also has to consider the resources needed for their larvae stages. Caterpillars need suitable host plants, and a vegetation rich in species and structure offers room for diverse living communities that also include predatory insects such as spiders, ground beetles, ladybugs and many others. In the agricultural landscape, predators and parasites are of great importance as adversaries of agricultural pests [12], which plays a central role within the concept of integrated pest management.

Promotion of abiotic habitats

„Abiotic habitats" are not characterized by living plants, but by dead plant material, ground or rocks. They are important on the project level because

FIG. 6 "Eh da" areas are the perfect place for flowering woody plants worthy of protection. Medlar trees (*Mespilus germanica*) have become very rare. Almond trees (*Prunus dulcis*) with their attractive blossoms can become a tourist attraction. Willow catkins (for example *Salix caprea*) provide food for insects early in spring.

they are unattractive, generally speaking, and are therefore mostly neither noted nor promoted. While flowering and blossoming surfaces are perceived as beautiful by most people, elements such as dead wood, raw soil, dry plant stems or decomposing plant material are not. "Eh da" projects emphasize the significance of these habitats and communicate it accordingly to the public. Raw soil biotopes are characterized by missing or sparse vegetation (Fig. 8). Approximately half of the domestic wild bee species breed in raw soil biotopes which are exposed to the sun [13, 14]. As rampant bush growth is one of the main problems in raw soil biotopes, it is imperative to avoid this issue and clear away the plant cover annually in order to maintain them.

The trunks of old trees (Fig. 9) felled within urban areas can be stored on "Eh da" areas, providing saproxylic insect larvae with a space to evolve. During the wood degradation, various living communities can develop. Clearance cairns and rock walls are two further examples of an abiotic habitat. Clearance cairns have developed historically when farmers threw stones from their fields on neighbouring expanses. Rock walls were often erected to section off or provide terracing for hilly landscapes (Fig. 10). Rainwater retention basins (artificially created smaller water bodies only temporarily containing water) are used to store precipitation in municipalities. Many of them are designed with technical aspects in mind, but especially the shore area offers manifold opportunities for biological diversity (Fig. 11).

Promotion of combined habitats

Animals need more than one kind of habitat to form a stable population. This is illustrated using the example of the wild bee. It needs landscapes with specific breeding habitats as well as habitats for melliferous flowers which ideally should be in close proximity to each other [15-17]. This combination is prerequisite for the success of a measure.

FIG. 7 Vegetation on the edge of a field. Areas with vegetation rich in species and structure are populated by herbivorous animals as well as by predators and parasites.

FIG. 8 Horizontal and vertical raw soil biotope. The depicted areas are populated by a species-rich wild bee community.

FIG. 9 Dead wood on "Eh da" areas. An old tree trunk, interspersed with insect larvae worm grooves, finds a new home on an "Eh da" surface.

FIG. 10 **Stones form a structure in a landscape. Clearance cairns and rock walls are important structural elements in a landscape used by many different animals. Locally sourced rocks are preferable when laying out these areas. Structures such as gabions (mesh wire cages), which have become immensely popular in the last years, fail to provide suitable habitats for animals due to their shallow depths.**

FIG. 11 **Shore area of a rainwater retention area. This structured shore area of an aquiferous rainwater retention basin is populated by amphibians and the imagines of water insects.**

TAB 4. CRITICAL ISSUES WITHIN "EH DA" PROJECTS

Stakeholder group	Critical factor
Agriculture	– Animal pests or weeds
Nature conservation	– FFH species (e.g. sand lizards)
	– Neophyta or Neozoans
Beekeeping, Sheep farming	– Plants containing pyrrolizide
Allergy sufferers	– Plants causing allergies
Municipalities	– "Unkempt" areas
Hunting, nature conservation	– "Road kill" on busy roads

The target distance between both habitats should be between 100 and 500 m [18]. Even though wild bees are able to cover greater distances, their reproductive output decreases due to the energy consumption during the flight [19]. The wild bee as an example is insofar representative as in many insects, the habitat needs of larvae and imagines are different. Butterfly caterpillars eat green plant matter, while imagines visit blossoms; fly maggots are often decomposers or predators, while their larvae subsist on liquid substrates such as nectar; scarab larvae survive on roots as cock chafer grub below ground, while the adult beetles consume plant substrates over ground. In light of the heated discussion about "insect mortality" [1, 20] currently in full swing, the complexity of these habitat demands should be kept in mind. On "Eh da" surfaces, several types of habitats are available.

On a landscape level, "Eh da" areas can contain stepping stone biotopes as well as connecting corridors within the biotope network [7, 21] because they traverse the landscape like a net. It is therefore reasonable to consider them especially in projects aimed at promoting biodiversity, in order to exploit all possibilities for cross-linking different biotopes with each other.

Critical issues

Biological diversity does not only consist of organisms which are "worthy" of protection, attractive or useful. Not all animals and plants living on "Eh da" areas are appreciated by the general public, and there are also some critical topics when it comes to upgrading "Eh da" areas (table 4).

For example, there's the possibility of weeds and animal pests developing, such as sow-thistles, field mouse colonies or aphids. Species with a very high protection status as per FFH guideline Annex IV (e.g. sand lizards (*Lacerta agilis*) might have to be considered separately. It is important to include experts and nature conservation agencies as early as possible when planning the project. Neophyta, plants containing pyrrolizidine (esp. cruciferous herbs of the *Senecio* genus) and allergenic plants such as *Ambrosia artemisii folia* can also be critical. It was already mentioned that "Eh da" surfaces can have a somewhat untidy, messy appearance. Also, inadequately implemented revaluation measures on "Eh da" areas close to traffic routes can attract animals, which might increase the number of "road kills".

With every "Eh da" project, it is important to address these issues beforehand, as every municipality puts a different emphasis on the individual topics. Methodical solutions (e.g. refraining from implementing measures alongside busy roads or adjusting mowing times to the flowering period of critical plants) are often the best call of action. One always has to keep in mind that decisions are made on communal level after a careful consideration process and that they require a consensus of all parties.

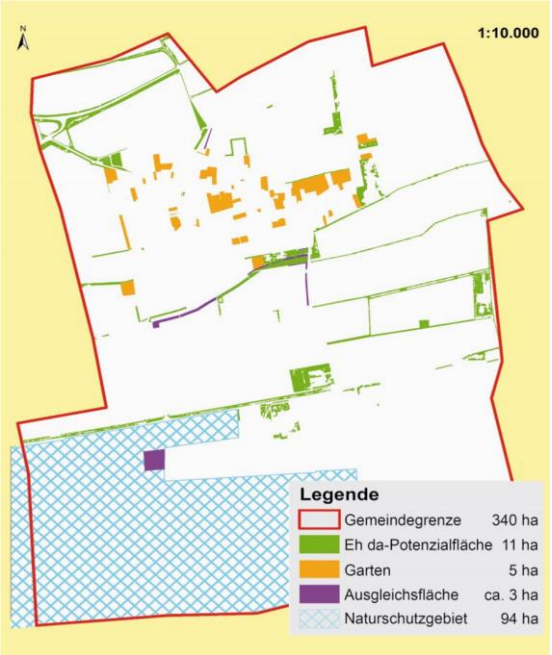
"Eh da" initiatives at project level

The municipality is the focal point of a project, because important players and decision-makers such as the local council, nature conservation agencies, authorities, farmers, hunters/gamekeepers, beekeepers, interested citizens and many others are involved. The impetus for an "Eh da" project can come from different sides, for example from members of the local council, interested residents or locally active organisations. In case of specific interest in a project, a step by step approach is the best solution. Creating a map of potential "Eh da" spaces based on ALKIS criteria (Fig. 12) is always a great

start to get a better overview of the available areas and their integration into the landscape. It is also crucial to define prospective protection objectives beforehand. This data enables the project team to narrow down the choice between the potential "Eh da" areas. The next few steps are essential: on-site visits, excursions, interactive web documentaries, communication, involvement of the media and technical experts. The process is concluded by a written project plan detailing who (private person or organisation) does what (measures to be taken, including communication initiative/integration of the political level) and when (precise multi-annual schedule).

At the beginning of a project, there's always the question of costs. In fact, it often transpires that the financial effort is not as high as expected. There are examples of mayors who managed to implement changes to the activity profile of the Municipal recycling depot in such a way that the maintenance effort for surfaces and the working hours could even be reduced. On the other hand, measures such as the removal of nutritious top soil can be expensive. When compared to many other initiatives, however, "Eh da" projects are extremely cost-effective most of the time [4], as they do not require any additional surfaces, but build on ecologically revaluating existing ones. Often, money is not the limiting factor of a project, but lack of personnel resources.

Communication is the core element of every initiative. This may entail a sign next to a designated area pointing out that raw soil is important for wild bees, for example. It also includes excursions, lectures and talks or articles in the local media and map-based web applications. Especially the interactive character of the latter allows for a project to be planned by several stakeholders and for documenting and explaining revaluation measures on "Eh da" surfaces, encouraging public participation and contributing to environmental education [22]. The "Eh da" approach is also a suitable possibility for schools to carry out and support attractive projects locally.



Legend
Municipal border
Potential "Eh da" area
Garden
Compensation area
Nature conservation area

FIG. 12 Bornheims "Eh da" areas in context with other areas relevant for biodiversity. The overview map shows the mostly longitudinal "Eh da" areas traversing the community like a net, making up approx. three percent of the total surface area.
Geobasis data: LVermGeo RLP, cartography: RLP AgroScience

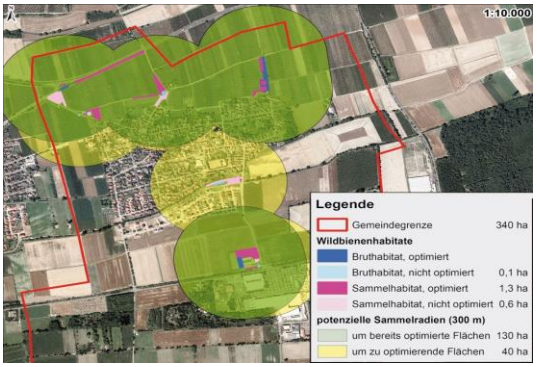
Case study

Bornheim is a municipality in Rhineland-Palatinate with a population of approx. 1500 where in 2015, the first communal "Eh da" project was started. As it is common knowledge that the area has an especially species-rich wild bee fauna, wild bees were selected as protection objective. The outline map of Bornheim shows the location of potential "Eh da" areas (Fig. 12).

Out of those, together with the local council, several conservation areas were selected to implement the planned measures, namely to maintain and/or create flowering areas or wild bee breeding habitats.

Special attention was paid to those breeding habitats located within 300m of flower-rich surfaces (reserves, compensation areas, gardens) (Fig. 13). Furthermore, it was ensured that breeding habitats were located alongside the village border, in order to promote acceptance of these living spaces commonly perceived as unattractive by most residents.

In 2014 and 2016, wild bee monitoring projects were carried out on four locations in Bornheim; in 2017, the city was the setting of an entomofaunistic comparative study [23]. As expected, a biodiverse wild bee fauna was discovered on the "Eh da" areas [24, 25], with many species registered on the Red List (of endangered species). The entomofaunistic study confirmed these findings [23].



Legend
Municipal border
Wild bee habitats
Breeding habitat, optimized
Breeding habitat, not optimized
Collective habitat, optimized
Collective habitat, not optimized
Potential collection radiuses (300 m)
by area already optimized
by area to be optimized

FIG. 13 Localization and planning radius of bee activity in Bornheim's breeding habitats. Geobasis data: LVermGeo RLP, cartography: RLP AgroScience.

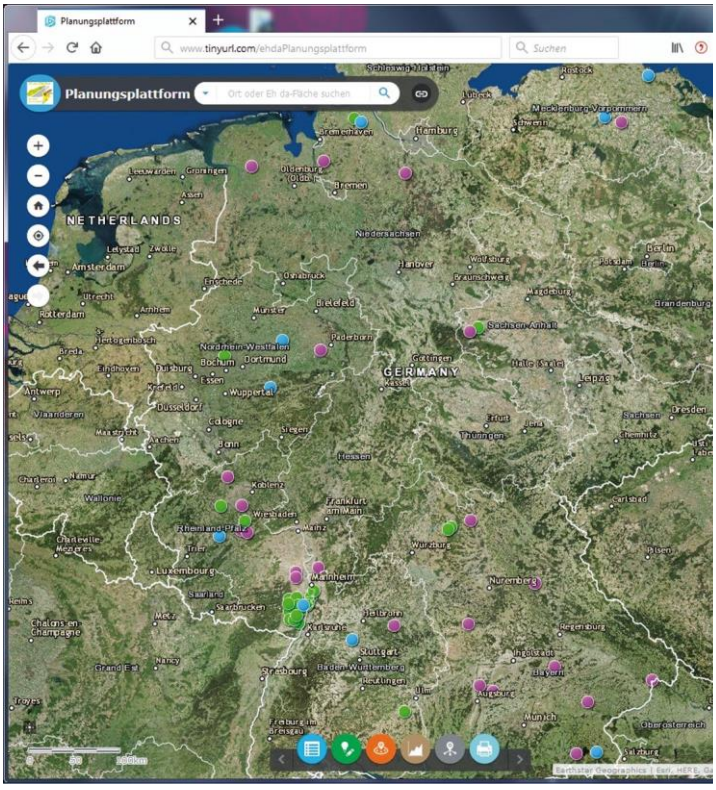


FIG. 14 Localization of municipalities with "Eh da" initiatives. Authors' own research, www.tinyurl.com/ehdaPlanungsplattform.

What is the overall situation in Bornheim at present? Up until 2015, 24 revaluation measures on five "Eh da" areas with a total area of 1.1 ha were implemented. As a positive result, the basic "Eh da" concept is met with acceptance in the municipality, not least due to the map-based web application www.tinyurl.com/ehdaBornheim, which explained the upgrading measures in detail. Bornheim has evolved into some kind of "model municipality" [26]: neighbouring communities expressed interest and initiated meetings, politicians inspected the site etc. Residents were often heard saying "We didn't know that…" when it came to the significance of the habitats or the unexpectedly high number of wild bees. Four events (of which three were entomofaunistic excursions), 15 articles in the local paper, eight articles in the regional media as well as four sign postings of exposed "Eh da" areas contributed to the success of the project.

Current status of the "Eh da" initiative

At present, the geographical focus of the "Eh da" initiative is Rhineland-Palatinate, since the sponsors are located here and the initiative has been mentioned several times in the state's biodiversity strategy [26]. Nowadays, however, the initiative is a Germany-wide phenomenon (Fig. 14) and the term "Eh da area" has become popular: there have been more than 400 newspaper articles since 2012 that mention and report on local projects.

One critical aspect is the decline of motivation after two or three years in projects that have been started very enthusiastically. Mostly, this is due to individuals losing interest. "Eh da" projects can only be realized with the help of volunteers, and it's frequently one or two people acting as driving force or „caretaker". If they are no longer available, the project runs the risk of petering out.

What does the future of the "Eh da" initiative look like? Should the success story of the past years continue, we can expect the number of projects and areas to grow nationwide. The website www.eh-da-flaechen.de serves as information base for interested municipalities and offers a digital practical guide as well as interactive map-based planning application. Municipalities can request analyses of potential "Eh da" areas and specialist support for revaluation measures from RLP AgroScience. External support is not mandatory, however – every municipality can take up the topic themselves and think about upgrading "Eh da" areas on their own.

Summary

The "Eh da"-Initiative: more space for Biological Diversity in Cultural Landscapes

The "Eh da"-initiative is based on the principle that definite land in cultural landscapes is "available anyway" (what "eh da"means in German) and has the potential for ecological upgrading without relevant limitations of land use. "Eh da" could be the acronym "Ecological habitat development areas." This land is located in open landscapes: along waysides, on uncropped plots in farmland, it could be communal lawn and other land categories. The initiative uses geodata in order to detect and quantify "Eh da"-sites. According to an analysis based on geodata in selected landscapes "Eh da"-land constitutes 2–6 percent of the total area of Germany. "Eh da"-sites are mostly narrow, longitudinal and spread like a net all over the landscape. Mainly insects and other invertebrate animals can be supported by upgrading of "Eh da"-land. Since these sites often form corridors, they may be part of communal biodiversity protection initiatives under the perspective of ecological networks, or they may be used for distinct projects. Communication is a key element of any local initiative in which not only the ecological upgrading options, but also potential trade-offs (like increase of agricultural pests and weeds, neophyta and pyrrolizidine containing or allergenic plants) should be discussed.

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Key words

Insect promotion, "Eh da" areas, biodiversity, landscape diversity, combined habitats, geodata analysis, landscape analysis, GIS, biotope network, municipalities.

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