



Insect Responsible
Sourcing Regions

More than just flower strips!

Experiences and
recommendations for more and
better insect promotion at
landscape level

19.09.2024

With financial support from



Cooperation Partners



Welcome!

13:35	Project Introduction	Patrick Trötschler, LCF
13:45	Results from LIFE demonstration farms	
	1. More area effect on arable land – Beneficial insect strips	Dr. Patrick Pyttel, LCF
	2. More area effect in grassland – Grassland enhancement and extensification	Viola Taubmann, NBL
	3. More area effect in apple production – Species-rich greening	Klara Hansen, NBL
	Q&A	
14:30	Experiences and findings in the development of multi-stakeholder IRSR: From farm to landscape approach	Bianca Messmer & Saskia Wolf, LCF
	Presentation and Break-out Sessions	
15:15	How policy-makers can support more biodiversity at landscape level	Christine Kewes, LCF
15:35	Discussion	
16:00	End of the Session	

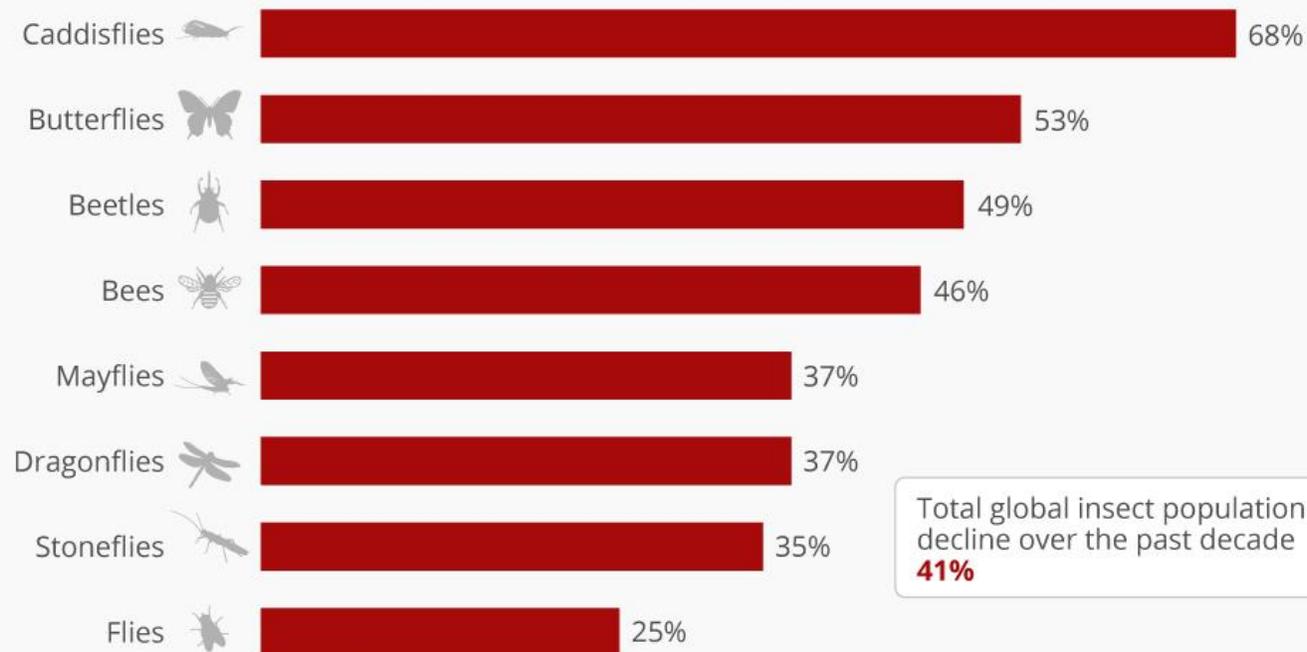


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Insect-Responsible Sourcing Regions

Massive Insect Decline Threatens Collapse Of Nature

Percentage decline in selected global insect populations over the past decade



@StatistaCharts Source: Sánchez-Bayo & Wyckhuys, Biological Conservation, 2019



Review of 73 historical reports:
Insect declines especially in Europe &
North America

Main reasons:

- habitat loss
- industrialized farming
- pesticide use

*"The conclusion is clear: unless we **change our ways of producing food**, insects as a whole will go down the path of extinction in a few decades."*

(Francisco Sánchez-Bayo, study co-author)



EU LIFE Project Insect-Responsible Sourcing Regions

Project Concept & Goals

- Improving the quality of insect habitats
 - Effective measures tailored to the farm
 - Monitoring the implementation
- Increasing the area effect of insect-promoting measures
 - Promotion of in-crop / production-integrated measures
 - Role model effect of demonstration farms
 - Involvement of food business and other stakeholders
- Establishment of a regional alliance for insect promotion
 - Inclusion of different perspectives of land use
 - Individual, regional solutions
- Adding value to insect promotion
 - Proposals for more attractive supporting programs
 - Development of market-oriented incentive systems



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LIFE-PROJECT Insect-Responsible Sourcing Regions



Insect Responsible Sourcing Regions



LIFE19 GIE/DE/000785

Project period: 09/2020 – 10/2025

Overall budget: 3.4 Mio €

<https://insect-responsible.org/en/>



BÄUERLICHE ERZEUGERGEMEINSCHAFT SCHWÄBISCH HALL



Good food, Good life

Project Coordinator and Moderator of this session:

Patrick Trötschler
patrick.troetschler@bodensee-stiftung.org

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7 Insect-Responsible Sourcing Regions in Germany & Italy

- Working groups
- Strategy & regional action plans with priority measures
- ~ 60 demonstration farms
 - Biodiversity action plans
 - Implementation of innovative and area-effective measures
 - Use of the BPT and implementation of insect monitoring



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Strengthening insect protection expertise

- Training and further education events (~1300 people trained)
- ~40 action sheets with insect-promoting measures
- Networking and cooperation



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Adding value to insect promotion

- Supporting farmers associations and food labels regarding biodiversity / guidelines and incentive concepts
- Proposals for better supporting schemes



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Results from LIFE demonstration farms

Right in the center instead of just on the
sidelines - More area effect for insects

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Beneficial insect strips in Arable farming

Dr. Patrick Pyttel patrick.pyttel@bodensee-stiftung.org

Lake Constance Foundation

19th September 2024

What's the concept?

Beneficial insect strips are:

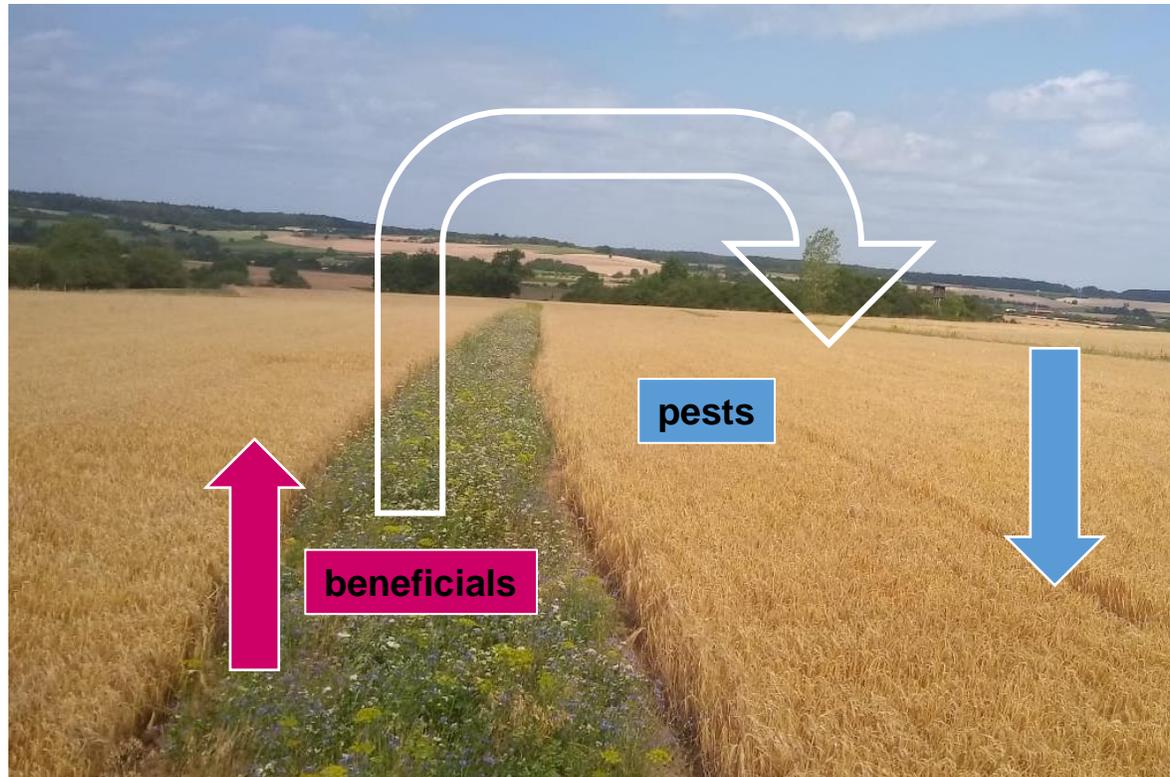
- (annual or) perennial areas
- sown with native wildflowers and cultivated plants
- **explicitly needed or interesting for pollinators and/or specific beneficials**
- to promote biodiversity in arable farming
→ most important project goal
- + no pesticides, in-crop

Inspired by: Tschumi, M., et al. (2016): "Tailored flower strips promote natural enemy biodiversity and pest control in potato crops." *Journal of applied ecology* 53.4: 1169-1176.



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What's the concept?



- 50% cereal leaf beetle
- 60% leaf damages



Where we applied it (1):



Where we applied it (2):

Heidelberg (potatoes)



wild bees and wasps

Bliesgau (oat)



no monitoring

Wendland (parsley)



hoverflies, lacewings,
ladybugs, (aphids)

What's the effect?

In potatoes and based on expert report:

- low diversity of plant components
- more than 60 species of wild bees and wasps were observed
- observation of three red list species

→ [Download the full report here \(german language\)](#)

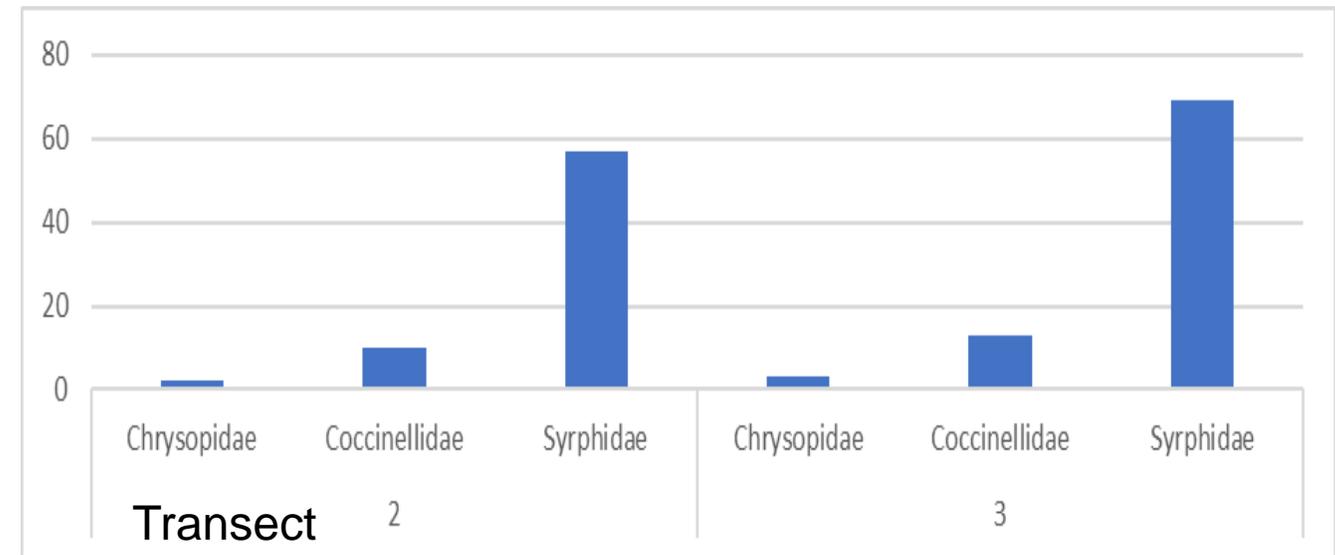
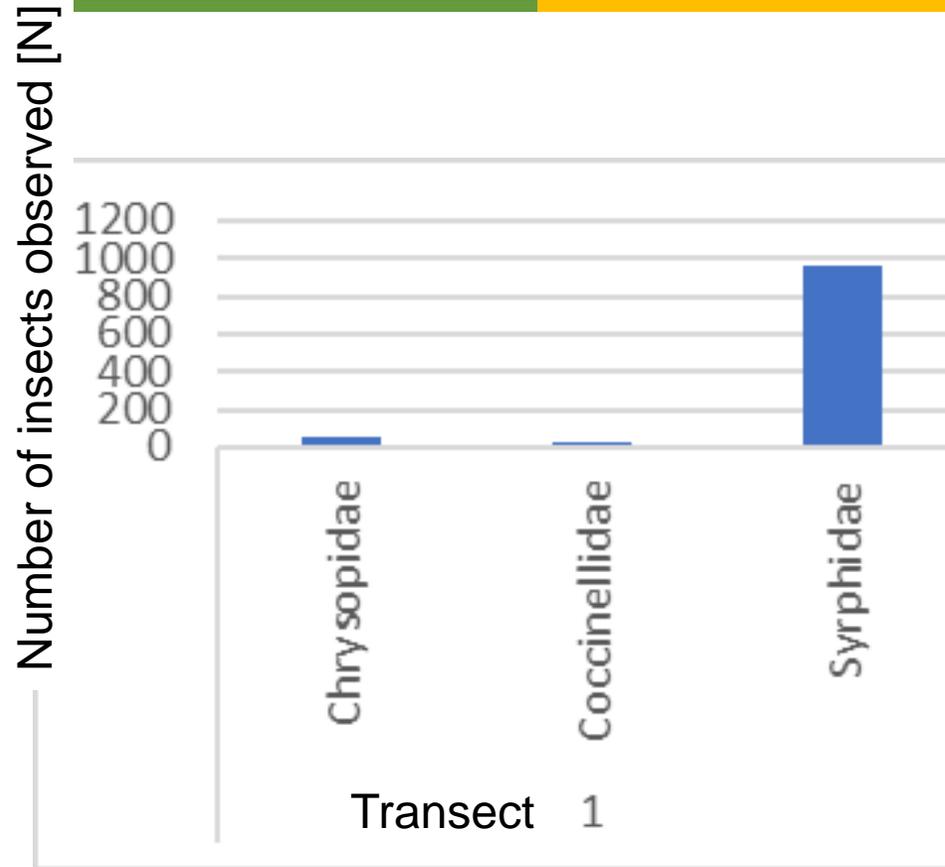


Golden wasp (*Holopyga fervida*),
highly threatned



What's the effect (II)

Chrysopidea: lacewings
Coccinellidea: ladybugs
Syrphidea: hoverflies



T1: beneficial flower strip

T2: monitoring strip in 10 m distance to T1

T3: monitoring strip in 20 m distance to T1

Substantial reduction of aphids!

Conclusions and further research

- Beneficial insect strips are visited by numerous beneficial insects, especially hoverflies, wasps, ladybugs...
- Beneficial insects "radiate" into the neighboring crops
- Suitable financial incentive systems motivate farmers to establish beneficial insect strips also within large field sections

? Dependencies between surrounding landscape * frequency of beneficials

? Species specific/crop specific seed mixtures

? Influence of in-crop nesting habitats



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Grassland enhancement and extensification

Viola Taubmann taubmann@bluehende-landschaft.de

Netzwerk Blühende Landschaft

19th September 2024

Insect responsible sourcing region Allgäu: Green desert?!



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Intensification

- 6-7 cuts
- 5-6 fertilization rounds



Impoverished grassland



Grassland enhancement

1

Seeding

2

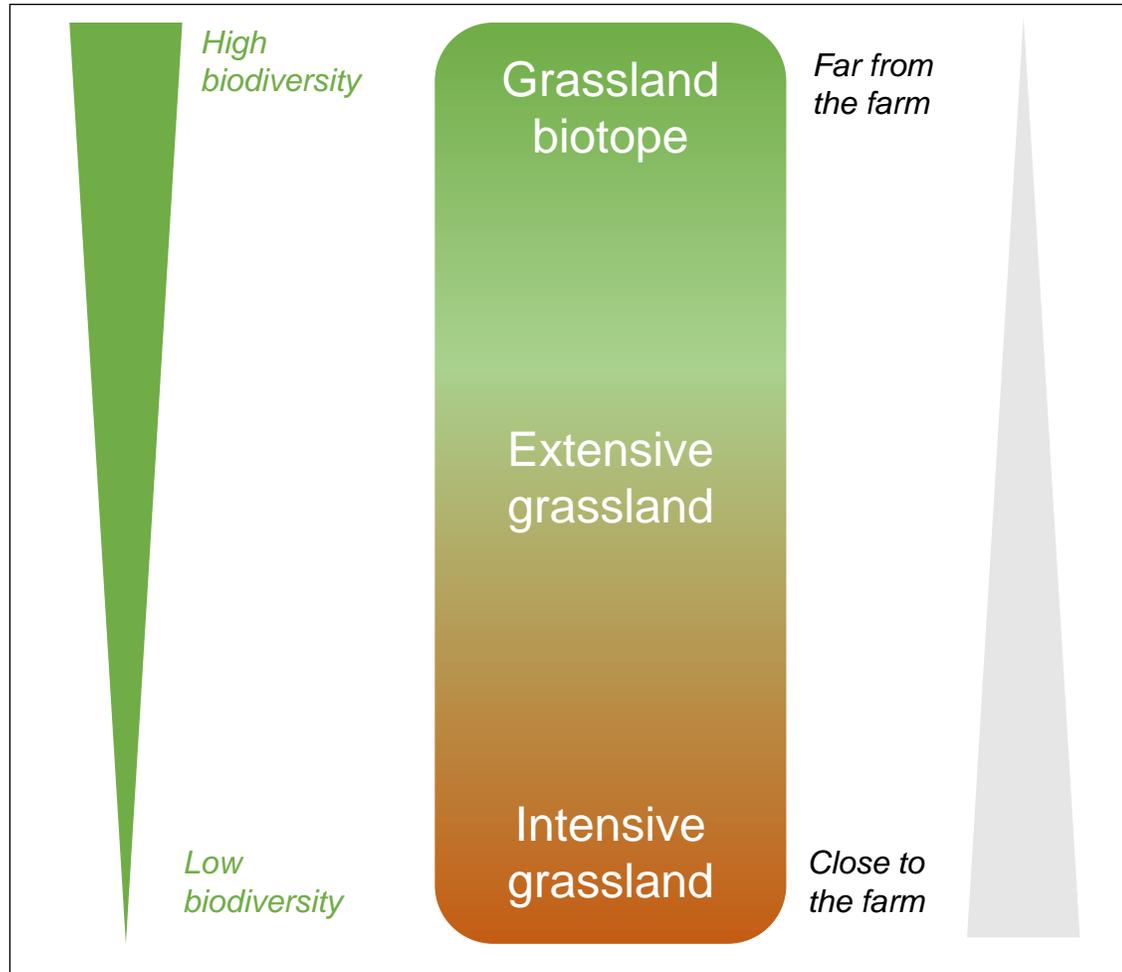
Transfer of mowed plants



➤ Always combined with extensification:
fewer cuts and less fertilization



Area efficiency through graduated grassland management



Additional measures

- Mosaic mowing
- Old grass strips
- Insect-friendly mowing (equipment, timing, cutting height)
- Structure (trees, hedges)



Supporting biodiverse grassland

Challenges



Technical



Yield



Existence and supply of native seed



Donor areas with intact diversity of native plant species

Need for support



Education



Usage of cut grass (fodder, biochar, etc.)



Development of native seed banks



Financial appreciation



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Biodiversity measures in intensive apple-production

Klara Hansen hansen@bluehende-landschaft.de

Netzwerk Blühende Landschaft

19th September 2024

First impression:
Beautiful, especially in spring





When taking a closer look:
Whole valley bottom covered in apple orchards.
No crop rotation,
no bigger trees.
Hail protection nets are subsidized and in 5-10
years the whole valley will be covered.

Insect responsible sourcing region Vinschgau: A valley under a pesticide cloud



pestizidtirol.info

PEStiZiDtiROL

- Picture shows a campaign from German NGO „Umweltinstitut München“, pointing out the socio-economic problem
- Very intense production
- Average of 38 pesticide applications between blossom and harvest
- No day without pesticide application in the valley

Flower strips

- Up to 50% of the field size
- No harmful pesticides on flowers
 - mulching
 - short blossom windows
- Reseeding every year



Anchor-Plants

- Again: no harmful pesticides on flowers
→ blossom not in may & june
- Not too big
- No host of apple diseases (i.e. fire blight)

→Leaves us with only few species





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Monitoring

More bees and hoverflies, only where both:

- surrounding natural habitat
- flowers within the orchard

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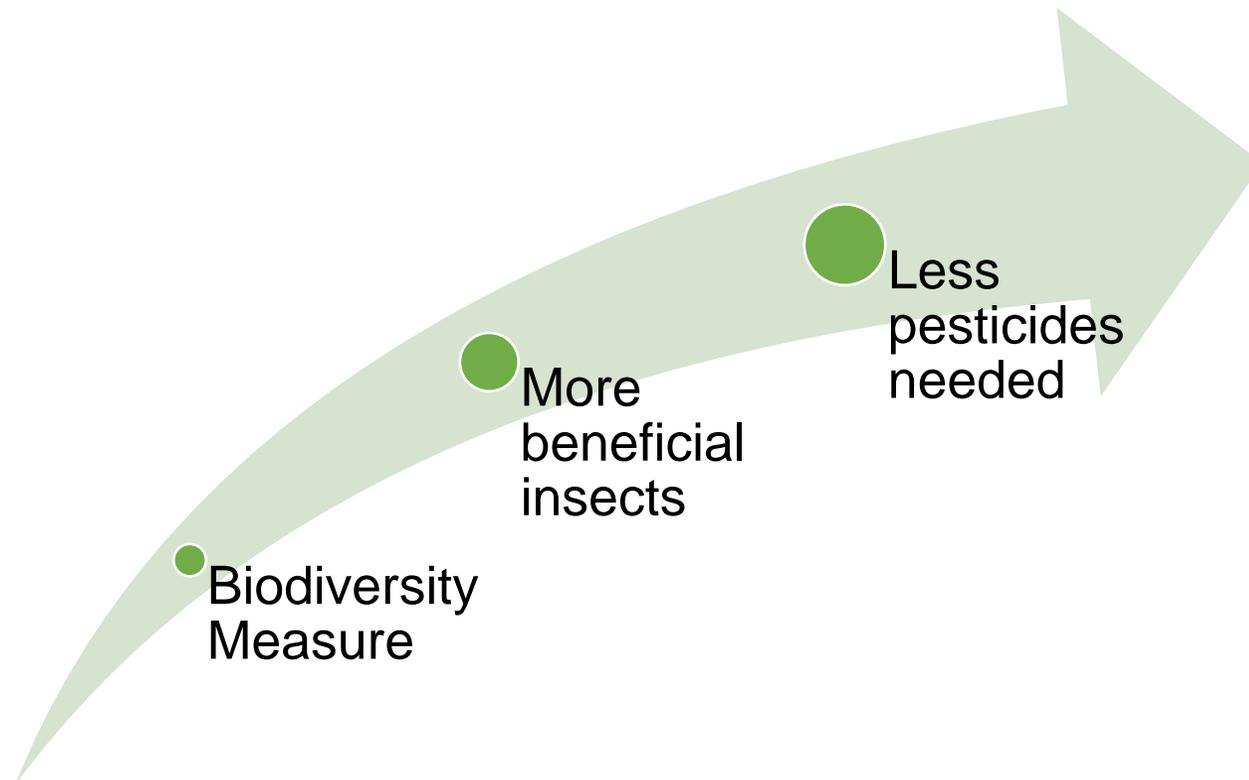


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Two problems: Green desert and pesticides



Does that work in an such a dense environment?

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What to do?

The measures only add limited ecological value

- short blooming windows
- no habitat

...and won't stop the massive extinction due to intensification and habitat loss.

Small scale farmers cannot solve this problem by planting some flowers.

How can we diversify the landscape?

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Experiences and findings in the development of multi- stakeholder IRSR

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Not easy to reach next level – from farm to landscape approach

Bianca Meßmer bianca.messmer@bodensee-stiftung.org

Saskia Wolf saskia.wolf@bodensee-stiftung.org

Lake Constance Foundation

19th September 2024



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Stakeholders in insect promotion



Companies

Agriculture



Food business



Municipalities

Forestry



Agriculture



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What?

In-crop & off-crop
measures

How?

CAP AES and
educational offers



Advantages

Resilience and soil
fertility

But ...

Monetary compensation
insufficient and only little
coordination of
cooperation



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Food business



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What?

Setting quality
standards for
producers

How?

Marketing and
adequate pricing

Advantages

Sustainability
goals, food market
stability



But ...

Missing willingness to
pay, high competition



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Example

What?
Setting quality
standards for
producers



[Ecoland](#)





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Stakeholders in insect promotion



Companies

Agriculture



Food business



Municipalities

Forestry



Forestry



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What?

Near-natural mixed stands and habitats, historical forms of use

How?

Governmental funding, educational offers

Advantages

Resilience against pests and weather extremes



But ...

Long-term planning and commitment



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Example

What?

Near-natural mixed
stands and habitats



<http://www.waldrandgestaltung.de/img/content/bild36.jpg>waldrandgestaltung.de

[Hochstift Forest](#)



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Stakeholders in insect promotion



Companies

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Food business



Municipalities

Forestry



Municipalities



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What?

municipal green
area design, public
engagement,
training

How?

Incentives for and
from municipalities



Advantages

Resilience, quality
of life, lower costs

But ...
Funding



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Example

What?
municipal green
area design, **public
engagement,**
training



[Funding "Häfler Zukunftsgrün"](#)



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Stakeholders in insect promotion



Companies

Agriculture



Food business



Municipalities

Forestry



Companies



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What?

Setting quality standards for raw materials, insect friendly premises, employee engagement

Advantages

Sustainability goals, certification programmes, value of products



How?

Marketing and adequate pricing

But ...

Missing willingness to pay, high competition



Example

What?

Setting quality standards for raw materials, **insect friendly premises**, **employee engagement**



[Ravensburger Spiele Verlag](#)



How it all started



We defined 7 IRSRs



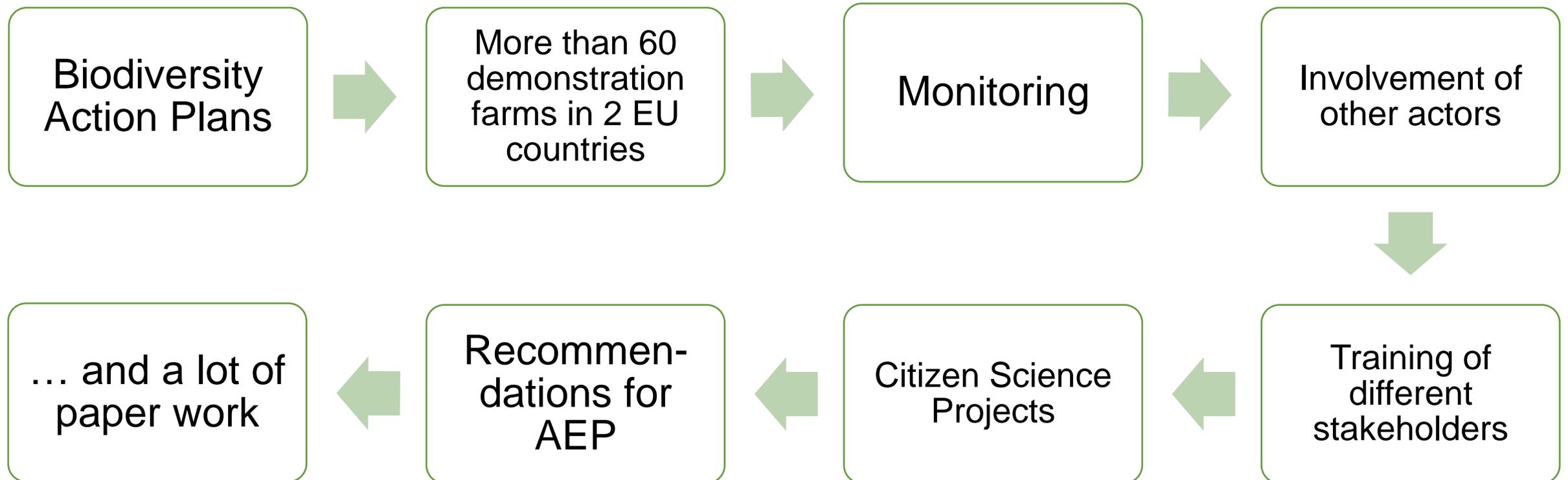
Main focus on agriculture
and we need:

Guideline for insect promoting landscapes

- Regional working groups
 - Baseline assessment
 - Biodiversity Action Plan
 - Monitoring
 - Tools
 - Trainings
 - Marketing
 - ...



What we did





What we got

Expectation

Everyone loves bees



Various stakeholders
participate in the project



Local food industry is interested
in marketing strategies



Following the steps of our
guideline leads to an IRSR



Reality

Most people don't feel
responsible for supporting insects

Take what you can get!

Insect marketing isn't sexy and
consequences of GCD are
uncertain

Establishment of IRSR is a
individual process



Key questions

Who pays for the insect-promoting measures and its coordination?

What makes a region an IRSR?

Who brings all actors together to facilitate cooperation and who coordinates the hence formed regional alliance?

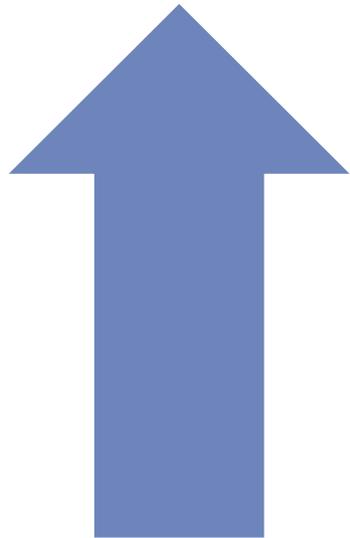
How can we involve further actors/citizens in the regional alliance?

Who educates and trains people regarding insect promotion?





What we concluded



Insect promotion needs **bottom-up** approach
and

- ! intrinsic motivation
- ! insect promotion should be allocated in existing sustainability programs / strategies
- ! funded/payed coordination
- ! competence
- ! financial benefits not only compensation



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How policy-makers can support more biodiversity at landscape level

Christine Kewes christine.kewes@bodensee-stiftung.org

Lake Constance Foundation

19th September 2024



Topic for today

Proposal of Blue-Print for an Agri-Environmental Programme

"Insect promotion on landscape scale"

→ Preliminary findings and thoughts



Foto: Bernd Kupper



Foto: DFG Biodiversity Exploratories



Cooperation?!

- How much is necessary?
 - a) Farmers coordinate measures together
 - b) Regional managers coordinate measures
- What do we want to accomplish?
 - Ecological effects
 - Regional development
 - Network building
 - Reduced bureaucracy



Source: playground.com



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Dutch model

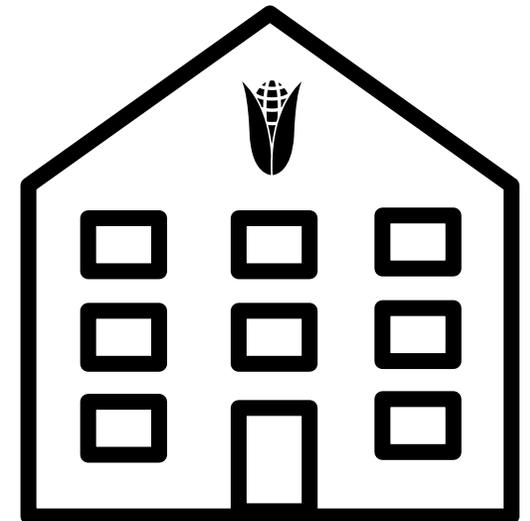
Farmers



Collectief



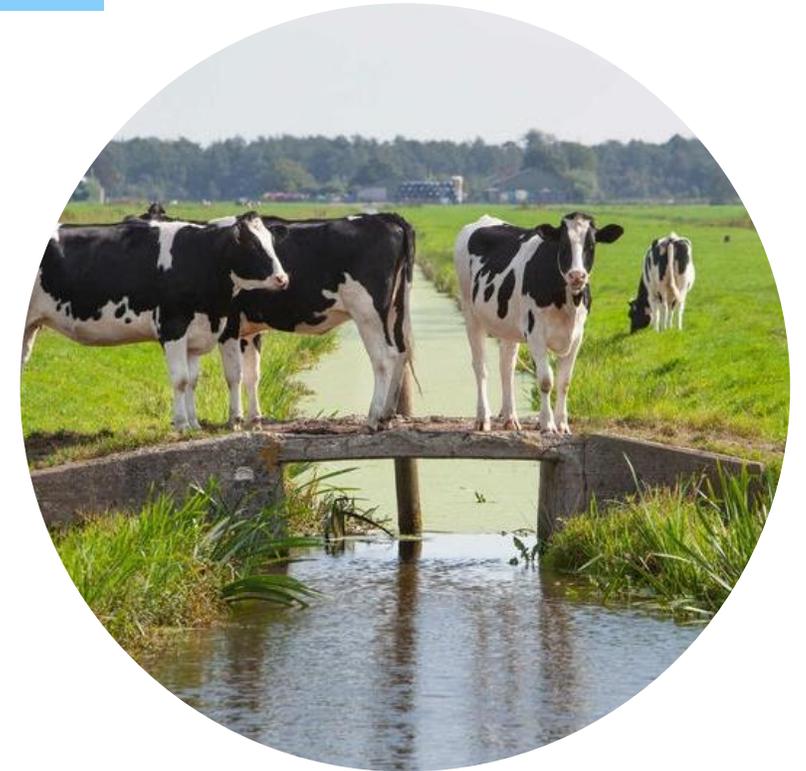
Agricultural
agency





Dutch model

- Well-liked but not feasible in all member states
 - no „collectiven“ or comparable structures
 - compulsive cooperation can be questioned
 - Ecological effectiveness
 - Regional restraints
 - Only certain focal species



Source: agrarheute.com



Approach for Germany

A) Large-scale agricultural areas

- „Brandenburg model“: Promotion of cooperative AECM
- Modified Dutch model
 - Voluntary participation, no area restrictions
 - 6 associations have been founded and each consists of 3-9 interested farmers and a landcare organization → landcare organization provides manager
 - strict criteria for recognition



Source: tagesspiegel.de



Regional measures plan

- Participation is key!
- Protection goals
 - Region-specific
 - Realistic and attainable
 - Transparent
- Approval by conservation and agriculture authorities



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Cooperative office

- Existing or new organisation
- Advice, PR, networking
- Regional measures plan
- Plan / coordinate measures
- Application / management of funding
- Administration, accounting, audits
- Error management / sanction enforcement





Support & Sanctions in cooperative models

- Farm visits
 - Give advice
 - „Prepare“ for controls
- Monitoring
 - Assessment of ecological effects
 - Transparency
- Sanctions
 - Single farm vs. internal matter of the cooperative
 - According to statutes / contract of members with cooperative
 - Leniency in case of minor area deviations
 - In Germany outlined in GAPInVeKoSG §14
 - Replacement measures can be used to avoid sanctions



Approach for Germany

B) Small-scale agricultural areas

- How to fund management?
 - „Brandenburg model“ is not feasible for these regions
 - Transaction costs not enough
- Regional/national funding
 - Germany: Gemeinschaftsaufgabe "Verbesserung der Agrarstruktur und des Küstenschutzes" (GAK 4A; MSUL)



Source: outdoor-magazin.com



Approach for Germany

B) Small-scale agricultural areas

- How to fund management?
 - „Brandenburg model“ is not feasible for these regions
 - Transaction costs not enough
- Regional/national funding
 - Germany: Gemeinschaftsaufgabe "Verbesserung der Agrarstruktur und des Küstenschutzes" (GAK 4A; MSUL)

Example:

4 Farms à 60 ha → 240 ha

10 % with measures → 24 ha

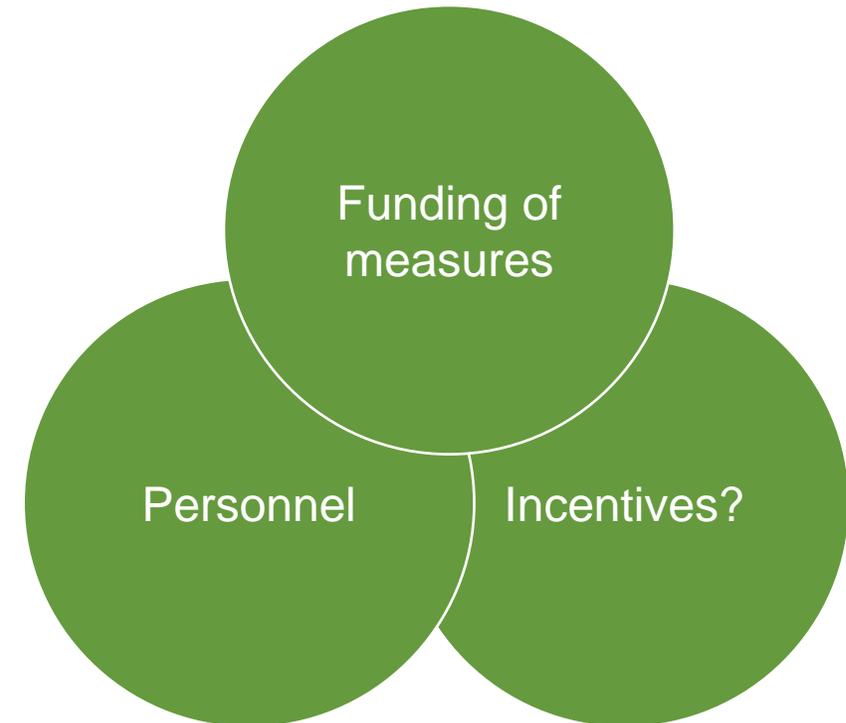
measure on average 350 € → 8,400 €

20 % top-up → 1,680 €



Success factors

- Broad spectrum of measures
- Attractive payments
- Other benefits for farmers
 - Lower risk of sanctions
 - Reduced bureaucracy
 - Guidance/help with implementation of measures
 - Participation





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Aside from agriculture

C) Agriculture... and what about the others?

- Regional insect promotion
- Approach for different actors
 - Municipalities
 - Companies
 - Citizens
- LEADER is a good framework
 - Already incorporates a regional management
- Project templates can be created for Local Action Groups



Source: dvs-gap-netzwerk.de



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Let's get going!



Foto: Christine Kewes



Source: depositphotos.com



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Conclusion and further steps

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Wrap-up

To promote insect and biodiversity-friendly agriculture, agricultural production systems must be -adapted. In-crop measures can offer **additional benefits** e.g. for soil fertility and adaption to climate change.

There are numerous practical in-crop measures to promote insects/ biodiversity on agricultural land. In order for these measures to unfold their full impact, they must be included more strongly and more attractively than before in **public and private funding and advisory services**.

Co-operative models for effective agricultural nature conservation should be developed throughout the EU and **introduced into practice** more quickly.



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Wrap-up

Competence is key! More information and education programmes are needed for all the stakeholders mentioned.

Our IRSR approach offers numerous starting points for different stakeholders to become active in the promotion of insects.

Interested regions and stakeholders simply contact us!

Guidelines for the development of an IRSR will be published in German and English by December 2024.



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Thank you
for your contribution and
good luck with all your
projects!

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