

Nature-Inclusive Agriculture: A New Approach towards Sustainability

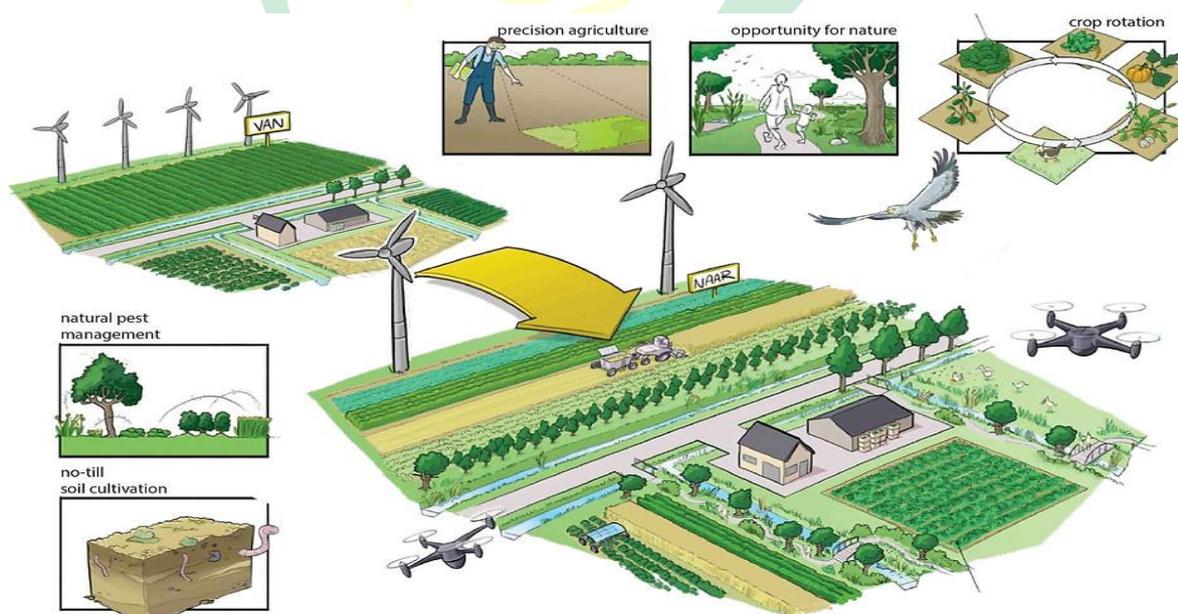
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Introduction

Nature-inclusive agriculture, or ‘natuur inclusieve land bouw’, is an approach to sustainable agriculture stemming from The Netherlands, from a policy concept adopted by the Ministry of Economic Affairs in 2014. Based on agro-ecological principles, nature-inclusive agriculture also considers the farming system as an agro-ecosystem, focusing on its sustainability. It seeks to optimize ecological processes for food production, integrating food production and natural capital in such a way that agriculture and nature can reinforce one another. The approach is in contrast, or comes as a response, to the current prevalent practices in agriculture, where agriculture and nature are seen as two different sectors/identities, reflected also in government instruments and economic (market) systems. The approach considers this separation between nature and agriculture as having negative consequences for the quality of nature and, eventually, for food production.



Nature-Inclusive Farming in Netherlands

Definition

According to van Doorn et al. (2016), nature inclusive agriculture may therefore be defined as “the pursuit of a positive, reciprocal relationship between farm management and natural capital (where food production is supported by natural processes and agriculture contributes to the perpetuation of these natural processes)” or as “an economically viable agriculture system that optimally manages natural resources and provides a basis for sustainable business operations, including caring for ecological functions and biodiversity on or around the business i.e. farm”.

A key difference between this approach and agro-ecology is that nature-inclusive agriculture seeks to become mainstream, whereas agro-ecology focuses much more conceptually on the local food chain and context. As a whole farm approach, nature-inclusive husbandry may be applied in any geographical area and for all classes of product, with specific practices advanced to be enforced for agronomic agriculture and dairy husbandry.

Principles

Nature-inclusive agriculture aims to minimize the negative effects of agriculture on nature and maximize the positive effects of nature on agriculture. It strives to achieve sustainable ecological and economic management. By sustainably using natural resources and ecosystem services, it aims to secure productivity on a long-term basis, minimize costs, and tap into the growing market demand for sustainably produced food, with the ultimate aim of catering to the undifferentiated mass market.

Nature-inclusive agriculture can be described based on the following three dimensions:

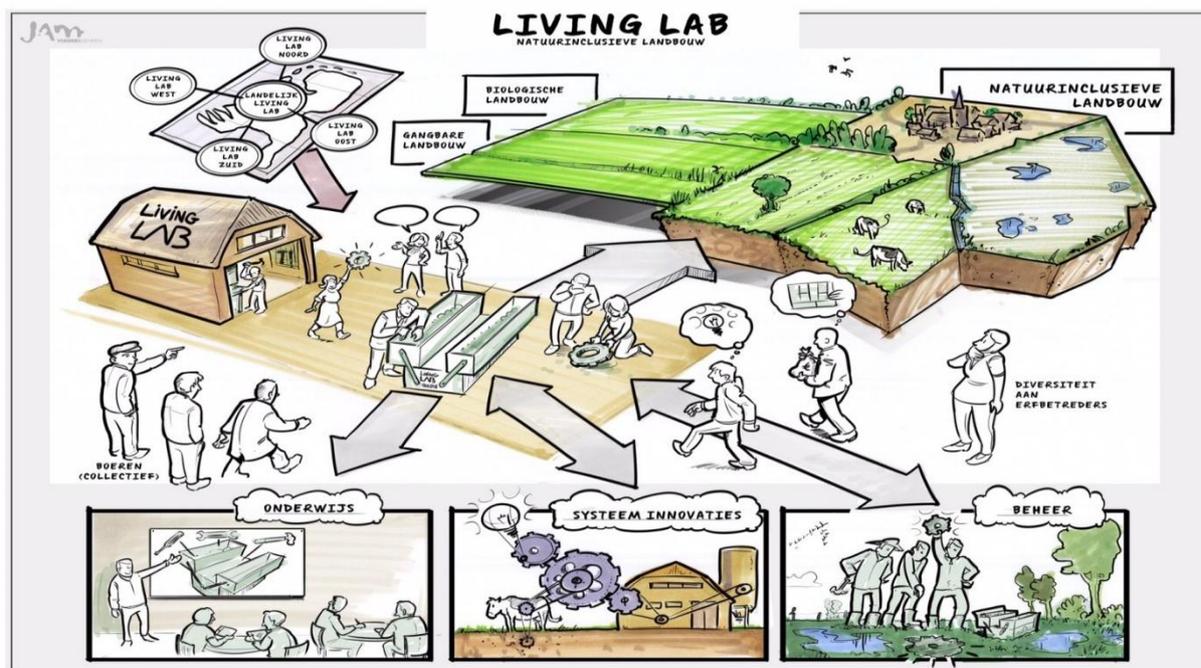
1. Biodiversity is the basis of resilient agriculture and food system, making essential contributions to farm management (e.g., natural disease and pest control pollination, water supply and treatment, natural soil fertility, and good soil structure). This is called functional agrobiodiversity. Nature-inclusive agriculture maintains, strengthens, and uses this biodiversity and the ecosystem services that it offers the business/farm.
2. By making use of function alagro-biodiversity and ecosystem services, and with the end of closing cycles towards reducing effluences, raw stuff may be used more efficiently, and the business/ farm’s impacts on water, soil, air, and the natural terrain

may be minimized. This creates positive conditions for openings for specific species both on the farm and in the enclosing geography.

3. Finally, there is the care for the landscape and the specific species on the farm. By constructing and maintaining landscape elements, farms can incorporate a green infrastructure that is vital for flora and fauna. Landscape elements also have the function of strengthening functional agro-biodiversity for the business/farm. Such management practices ensure the continued existence of, for instance, meadow and field birds and other farmland species.

Nature-inclusive agriculture refers to practices that:

- Strive to close cycles as much as possible according to agro-ecological principles, ensuring a greater diversity of organisms and a greater interdependence with local natural capital instead of external sources.
- Strive for collective reinforcement between monetary results and ecological aspects, incorporating both into the business/ farm style and strategy.
- Encourage innovation and making long-term investments in their natural capital;
- Are attractive to large groups of farmers and can therefore become “mainstream” in the sector.



Living Lab for Nature-Inclusive Agriculture

Practices

Sanders and Westerlink (2015) have identified effective measures to take as part of 'natuur inclusieve landbouw', of which some examples include:

- Lower cattle densities.
- Less inorganic fertilization (max. 50-100 kg N/ha).
- Less use of chemical pesticides.
- Expanding and enlarging the diversity of landscape elements (biotopes).
- (re)introduction of herb and flower edges.
- Decreased tillage.

The above measures require a greater adaption of and thus a greater commitment from the business (farm).

Examples of measures with a lower threshold, which can also be implemented, include:

- Providing space for 'messy corners', i.e., areas for owls, hedgehogs, etc.
- Non-turning tillage.
- Less use of fertilizer on edges of farming land.
- No mowing of ditch edges.
- Cleaning of ditches in phases.

Challenges and Opportunities

Specific challenges and opportunities for nature-inclusive agriculture arise from the fact that, despite its similarities and links to agro-ecology and other more widely practiced approaches, this approach is still quite new and in many ways at a relatively theoretical stage, ultimately aiming to achieve systemic, transformative change. At the same time, the practices it encompasses can be seen as 'very practical', helping further its ultimate aim of becoming more main stream. Integration into policy and the value chain will require quantifiable indicators and measurable impacts, whereas at the moment, as is the case for a number of approaches to sustainable agriculture, evidence linked to the approach is primarily qualitative. Further research and investment are required to get it to the stage where the concept is rolled out in practice.

Nature-inclusive agriculture toward sustainability

In terms of sustainability, by integrating nature and husbandry, and through its end to secure productivity, minimize costs, and induce further income, the approach aims to satisfy



environmental as well as social and profitable sustainability. As a business concept, with different levels of ambitions for different farms in different landscapes, the potential for this approach to bring about sustainable results with respect to all three “pillars” could be significant. While farmers can already start implementing the approach, full adoption (and the fulfilment of the approach’s full potential) will require a transformation at the level of business operations and potential additional market development.

Conclusions

The concept of nature-inclusive husbandry is still rudimentary and thus there's an eventuality for growers, citizens, scientists, policy-makers, agri-food companies, and other stakeholders to conjointly give it meaning. Analogous to sustainable husbandry, nature-inclusive husbandry is a concept with which maximum people will associate ideas. Presumably, most people will have a positive attitude toward nature-inclusive husbandry. Nature-inclusive husbandry isn't the first concept to be advocated in the hunt to integrate nature conservation into farming. Various other concepts have been popular similar to ‘ecosystem services, ‘functional agro- biodiversity’, and, more lately, ‘Natural Capital’; concepts that emphasize the value of particular species and natural processes. Nature-inclusive husbandry is presently being developed at the Ministry of Economic Affairs may or may not be around in 10 times time. But there's optimism about the survival of the beginning idea, namely that husbandry cannot continue working against nature and at the expense of an attractive topography. There's no hard documentation, but the impression is that this idea is gaining ground among growers, industry, and politicians. And husbandry in its current form doesn't feel to be financially sustainable for numerous growers, moreover. the relinquishment of nature-inclusive husbandry won't be by itself. It'll bear further effective governance arrangements for nature-inclusive husbandry, as well as the mainstreaming of nature-inclusiveness in farming policy and in agri-food chains. This in turn requires political will, leadership from industry, and support from citizens in their places as consumers, electors, and recreationists. Governance arrangements for nature-inclusive husbandry should be less voluntary than they are now. At the same time, they should enable growers, citizens, agri-food companies, policy-makers, and other stakeholders to negotiate andco-produce shared meanings about nature-inclusive husbandry.