Farmer Friendly Pollinator Guide

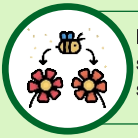
Hand Book for Farmers, Gardeners, Agricultural Extension Agents and other Land Users.

BESNet

UNDP

FEDERAL MINISTRY OF ENVIRONMENT

Project Description



Pollination is among the most visible and important ecosystem services and is necessary for reproduction of **60–70%** of all plant species and **35% of global crop production.**

The value of pollination by all insects is estimated at US$175 billion, or nearly 10% of total agricultural production for human consumption.

However, in recent times, dramatic declines in pollinator abundances have generated concern for the maintenance of pollination services.

Unfortunately, Potential drivers of pollinator loss, including habitat loss and fragmentation, agrochemicals, pathogens, alien species, climate change and the interactions between them continue to aid the decline of Pollinators globally

To support the goals of addressing the threats to pollinators in a way that enhances food security and contributes to land degradation neutrality targets in Nigeria, The UNDP-BES-NET Project develops DNA barcodes, QPR codes for Nigerian pollinators (butterflies, bees and bats).

Developing Farmer friendly guide for Nigerian Pollinator species will enhance knowledge of their distribution and taxonomy as well as facilitate conservation planning using pollinators as a model system

Section One

What can Farmers/Gardeners do for pollinators?

What are Pollinators?

Pollinators are an essential step in the seed production process of most flowering plants and many food plants. They help transfer pollen grains between different flowers of the same species.

Insects are primary Pollinators and they include bees, hoverflies, butterflies, moths, beetles, wasps.

Why do we need Pollinators?

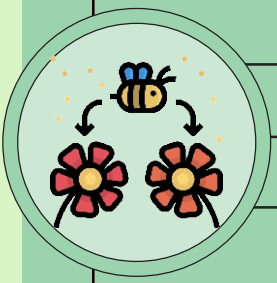
1. Pollinators play a crucial role in healthy and resilient ecosystems.
2. Thriving pollinator populations are essential to underpin the stability of pollinator services in the future.
3. Without pollinators, many plants will not produce seeds thus losing their ability to reproduce, causing a decline in vegetation diversity.
4. Many important crops are insect pollinated and this is critical the production of Fruit
5. Wild pollinators are important not just for the yield but also contribute to healthy diets.

Pollinators are declining

1. Populations of pollinating bees, hoverflies, moths, and butterflies have declined significantly over recent decades.
2. For Pollinator population to grow and strive depends greatly on the diversity of flora in an environment.
3. Plant species offers insect pollinators food as well as suitable breeding and hibernating sites.
4. Pollinators are in decline in recent times as the limiting factor that populations lack sufficient, diverse floral resources to strive.

Section Two

What can Farmers/Gardeners do for pollinators?



Farmers can help identify food, hibernating and nesting sites for wild pollinators. Identify how the day-to-day farming decisions can affect them

Identify and Organize pollinator groups involving farmers in your area and get feed backs from local advice on wild pollinators i.e. publications, online resources, and advisory services.

Assess how pollinator-friendly your farm is, identifying key pollinator habitats and features. Consider where the pollinator-friendly habitats are located in relation to each other and to insect-pollinated crops.

Prepare a list of possible actions to be taken to help increase pollinator population;

1 Reduction in the use pesticide use

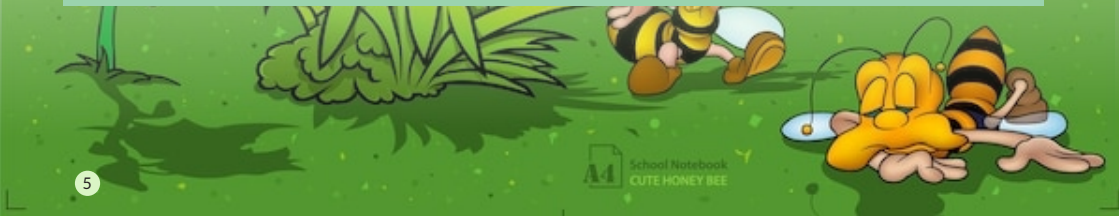
2 Sustainable management of existing habitats and features (buffer strips, hedges, field corners)

3 Creation of new food sources, nesting/ hibernation areas.

Make a yearly plan to improve pollinator habitats on your farm and maximize the benefits of pollinators on your crops

KEY FARMLAND HABITATS AND MANAGEMENT ACTIONS FOR POLLINATORS

1. Manage existing farmland habitats for pollinators
2. Create extra pollinator resources on the farm
3. Sow wildflower strips and pollen and nectar strips
4. Leave fields fallow with seeded or spontaneous vegetation (set-aside)
5. Provide nesting and hibernating sites for wild pollinators
6. Leave bare sandy or earth banks or patches as nesting habitat
7. Leave field corners or other areas for biodiversity – leave nature to regenerate on its own here
8. Grow legume flowering crops such as alfalfa and clover and let them flower
9. Integrated pest management (IPM)
10. Avoid pesticide use and reduce fertilizer use
11. Tolerate flowering weeds where possible - avoid herbicide use and reduce fertilizer use
12. Avoid insecticides as they harm pollinators
13. Support native plant species
14. Plant native trees and hedges
15. Control invasive alien species on farm
16. Leave patches of tall flowering weeds and wild plants
17. Take a landscape scale approach



Section Three

What can Extension Services Do for Pollinators?

1. Extension workers can promote the benefits of pollinators in both crop production, a well pollinated farm leads to increased food availability.
2. Promotion of compatibility of pollinator friendly farming with profitability
3. Gather evidence-based information on the needs of wild pollinators in terms of food, hibernating and nesting sites in farming communities and share information with farmers.
4. Integrate pollinator awareness and 'pollinator—friendly' advice within established channels of advice and information serving farmers and other land managers (newsletters, material aimed at specific farming systems, farmers' groups, advisory publications, on-farm advice)
5. Develop detailed, specific pollinator planning advice for the key farming systems for Local Farmers.
6. Promote management systems and techniques that are of general benefit to wild pollinators i.e. best integrated pest management and agro-ecological approaches to farming.
7. Champion and publicize good practice for pollinator management in rural areas, through local 'lead' farmers, schools, and others with influence in the local community.

Section Four

General principles of Integrated Pest Management

1. Crop rotation and techniques that will encourage agro-ecology techniques i.e. stale seedbed technique, sowing dates and densities, under-sowing, conservation tillage, pruning and direct sowing.
2. Use, of resistant/tolerant cultivars and standard/certified seed and planting material were needed.
3. Reduced/balanced fertilization as well as liming and irrigation/drainage practices,
4. Protect and enhance use of important beneficial organisms (adequate plant protection measures).
5. Sustainable biological, physical and other non-chemical methods must be preferred to chemical methods if they provide satisfactory pest control.

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