



Resisting Modern Agricultural Practices and Urge to Practice Sustainable Agriculture and Food Security in Barbara Kingsolver's *Prodigal Summer*

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Article History	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 08 Nov 2023	<p><i>Long-term environmental, social, and economic sustainability is the goal of sustainable agriculture, which aims to satisfy current and future agricultural demands. Having access to enough safe and nourishing food is essential to a healthy and active life. The novel Prodigal Summer revolves around multiple problems, such as environmental conservation, food security, human-nature interdependence, sustainable farming methods, and resistance to modern agricultural practices. The narrative skilfully blends the natural world with the lives of its characters to highlight the tension between conventional farming practices and the expanding movement toward sustainable agriculture. The actors discuss both traditional and contemporary farming practices in the first speech, focusing on how they understand sustainable farming and how they disagree with issues facing the industry today, such as monoculture and genetically modified organisms (GMOs). The second point of contention is how to safeguard food from modern agricultural methods and pesticides. The characters in the novel—Deanna Wolfe, Lusa, and Walker in particular—emphasize the value of biodiversity, organic farming, and the preservation of natural ecosystems in order to maintain a balance between human requirements and environmental care. These characters are acting in unique ways and using their strength and deeds to oppose males and other community members.</i></p>
CC License CC-BY-NC-SA 4.0	Keywords: Food security, sustainable agriculture, resistance, agricultural paradigms, and modern agricultural methods

1. Introduction

Agriculture involves the production of crops and the breeding of animals for food, fiber, and medicine, among other things. Crop planting, harvesting, irrigation, pest control, soil conservation, and other activities are all part of it. High-quality agricultural output is the goal of sustainable agriculture, which also seeks to protect the environment, farmers' social and economic status, and the health of their livestock. The objective is to provide for the world's food needs in the present while safeguarding the environment, assisting rural communities, and making sure that future generations will be able to do the same. Long-term viability is the main goal of sustainable agriculture, which promotes biodiversity, reduces adverse effects on the environment, and makes effective use of available resources. Crop rotation, cover crops, lower chemical inputs, organic farming, and resource conservation are some of the activities it promotes. The intention is to develop farming systems that are less dependent on non-renewable resources, maintain soil fertility, conserve biodiversity, and adjust to changing environmental conditions.

Barbara Kingsolver tackles themes of ecological features and organisms in her book *Prodigal Summer*. Deanna Wolfe, Lusa Landowski, and Walker—the main characters—are committed to environmental preservation and sustainable agriculture. As a forest ranger, Deanna emphasizes the value of maintaining the natural balance by observing and recording the creatures in her forest. Her methods support ecosystem health and biodiversity, which is consistent with sustainable agriculture ideals. Topics include food security, environmental preservation, the relationship between humans and nature, and sustainable farming practices are all explored in the book. As a forest ranger, Wolfe is committed to sustainable agriculture and environmental conservation. One member of a farming family, Lusa, encounters difficulties when she marries an agricultural family. Her work on the farm serves as an example of the idea of food security, which is the cooperative effort of individuals to guarantee

consistent access to a healthy diet. The research centers on the differences between traditional and modern farming techniques, the characters' understanding of sustainable agriculture, and the controversy surrounding the safety of food vs modern methods and chemicals. The book offers a compelling examination of the intricate interactions between people and the natural world, emphasizing how crucial it is to maintain the harmony between environmental protection and human needs.

2. Literature Review

Integrated Pest Management (IPM) techniques integrate chemical, biological, and cultural methods of control. They are widely used to reduce pesticide usage and encourage ecologically sustainable pest management. In order to prevent invasive species from having a broad effect and to identify them at an early stage of establishment, monitoring and early detection systems are essential (Musolin et al., 2022). This review explores the link between fish resources, climate change, and population expansion in Malaysia. It highlights the need for a multidimensional approach, including sustainable production practices, habitat preservation, balanced utilization, and adaptive management strategies, to ensure food security amidst climate change and population growth (Harun, 2023).

The protagonist of the book, in Ali's opinion, is reliant on the natural environment as well as their home. Eddie Bondo, a hunter who preys on wildlife and goes against the main character's interests, is encountered by the protagonist. Despite her husband's opinions, Lusa followed modern farming practices, but she later had second thoughts. Garnett promoted traditional methods, opposed chemicals, and increased public knowledge of pesticide use. (Ali, 31). According to Adelaja, agriculture and food security are essential for sustainable development, especially in developing nations. The Sustainable Development Goals of the UN link and acknowledge them. This special issue focuses on the distinctive difficulties faced in the development of sustainable agriculture, as well as resilience in reducing shocks to food and agricultural security. Other articles cover topics such as forced displacement, food security, sustainability, war, and the SDGs. The research demonstrates the connections between agriculture and environmental sustainability, food security, and resilience. (Adelaja, 3).

Rai looks into ways to maintain ecological balance, sustainability, and food security using a range of technology and modern techniques (Rai, 10). According to Rohila, agriculture occupies over one-third of the planet's area, and the environment has a significant impact on how sustainable it may be. Growing populations cannot be fed by conventional farming methods. Whether we can feed a growing population and maintain the environment at the same time is the question. Natural environments may be deteriorated by current methods, leaving it up to future generations to discover sustainable alternatives. This essay examines how agriculture affects the environment and how it is related to it. (Rohila, 146). Kingsolver highlights the problems with sustainable farming methods and food security as well as potential solutions by incorporating these ideas into the story.

Kingsolver emphasizes the significance of employing environmentally friendly farming methods to provide a more secure and sustainable food supply in the future. She constantly highlights the importance of biodiversity in agriculture. She might discuss how a range of crops and habitats contribute to sustainable agriculture practices. The book may advocate for more environmentally friendly and sustainable farming methods while also discussing the negative consequences of artificial chemicals and pesticides in agriculture. Kingsolver might discuss the benefits of small-scale, regional farming as an effective alternative to large-scale, industrial agriculture. She might emphasize the connections between small farmers and their local communities. The author may discuss sustainable practices like crop rotation and soil conservation that ensure continuous productivity and maintain the long-term health of the land. The importance of a strong relationship between farmers and the land they farm may be emphasized in the book, which also highlights the psychological and spiritual components of sustainable farming.

The Modern Agricultural Practices:

Shiva, an environmental activist, opposes genetically modified organisms (GMOs) and current agricultural techniques, contending that a significant portion of the gene-editing process remains "dangerously unpredictable". Her support for organic farming has been crucial in India's decision to forgo approving any genetically modified food crop for human consumption since she feels that it is the only way to feed the world. For almost fifty years, she has been actively involved in the struggle for environmental justice in India. She is recognized as one of the most forceful environmentalists in the world, having fought against strong, multinational chemical companies, saved forests, closed toxic mines, highlighted the risks associated with pesticides, and promoted organic farming worldwide. The 'Gandhi of grain,' the 'rock star' of the anti-GMO movement, and the 'eco-warrior goddess' have all been applied to her. More than 70,000 farmers are members of Navdanya, an organization she co-

founded that advocate for organic farming and seed conservation. Modern agriculture has undoubtedly enhanced yields and efficiency, which has revolutionized food production. Nevertheless, the ecosystem has paid a high price for it. The use of genetically modified organisms, monoculture farming, and excessive pesticide and herbicide usage have all contributed to soil degradation, biodiversity loss, and water pollution. In addition to not being sustainable, these techniques endanger food security in the long run.

Modern Agricultural Practices in the novel:

The book discusses issues around the use of insecticides and pesticides in farming processes. Cole Widener first cultivated tobacco using a contemporary agricultural farming technique. Landowski, his spouse, followed his values with him, but eventually, she disregarded them. Contrary to customary agricultural practices, one of the novel's protagonists, Garnett, practices conventional farming. To increase crop yields, all that is required is the use of more herbicides, fertilizers like Selvin, insecticides to eradicate weeds, and other chemicals. His strategy raises concerns about the long-term viability of such activities since it differs from the more environmentally sensitive tactics supported by other characters. He is represented as a supporter of contemporary farming methods, which include the use of insecticides like malathion. It was he who applied the weed killer and malathion. Weed would use its growth to damage crops or plants. To put an end to it, he employed the weed killer. A pesticide called malathion is used in agriculture to manage a range of insects, including flies, mosquitoes, and crop pests. To ensure that the crop survives, he thinks that a lot of insecticides and pesticides should be used to eradicate undesirable pests.



Figure 1: Sustainable Agriculture vs Modern Agriculture

Deanna, who chose to live alone and use sustainable farming methods on her isolated farm in the highlands, is a living example of the opposition to contemporary farming methods. Deanna’s transition from the traditional agribusiness sector to a small-scale, sustainable farming method is evidence of her resistance to the prevailing agricultural paradigm, which often places an emphasis on financial gain above environmental responsibility. It is hard for Lusa to stay involved in Zebulon once she marries a local resident. Their disagreements on how land should be used have led to arguments between Lusa and Cole. Lusa feels that plants like honeysuckles are being overly treated with chemicals. There is no question that the use of herbicides is a problem. But the honeysuckle also presents a problem for farmers. Lusa understands that if pesticides are used to destroy the honeysuckles, they must be controlled to prevent harm to the natural vegetation or the structure of the barn, which she now needs to preserve.

Sustainable Agriculture in *Prodigal Summer*:

Deanna Wolfe is a forest ranger and environmentalist who practices sustainable agriculture as part of her efforts to restore the ecology of her forest. Her approach, which is not traditional agriculture, is to protect the diversity of plant and animal species while letting the land recover from disruptions on its own. This aligns with sustainable farming practices that prioritize the resilience and health of ecosystems. It is essential to have a conversation about sustainable farming methods, which include plans and techniques intended to meet current and future agricultural needs while taking social, economic, and environmental factors into account. The above-listed strategies seek to reduce negative environmental impacts, improve the well-being of farmers and the surrounding community, and ensure the long-term viability of agricultural systems.

“Deanna watched as the forest thrived in its natural rhythms, a living example of the balance she aimed to protect. ... The sight of them had caused him to withdraw far inside himself, carefully avoiding any touch or glance at her as they stood watching the animals.” (*PS*, 200)

This sentence, which highlights how the ecosystem is supported by natural processes, nicely encapsulates Deanna's duty as a guardian of the forest environment. Her approach is compliant with sustainable agriculture, which respects the organic processes that allow plants and animals to exist. Deanna Wolfe, a key character in the novel, is the embodiment of sustainable agricultural practices. As a wildlife biologist, she emphasizes the need to preserve natural ecosystems and biodiversity. Deanna's agricultural philosophy places a strong emphasis on promoting peace between humans and nature. She uses integrated pest management, which advocates using natural predators to control bug populations rather than primarily relying on chemical pesticides. Her deeds exemplify a comprehensive plan intended to maintain environmental balance. Her thoughts on working in agriculture and her commitment to environmental preservation. She spoke on the principles of agroecology, which seeks to integrate ecological ideas into agricultural practices with a focus on protecting biodiversity, reducing the use of chemicals, and fostering long-lasting bonds between humans, animals, and plants.

After her husband passes away unexpectedly, Lusa Landowski, another significant character, marries a farming family. She learns about the challenges of traditional agriculture and finds it difficult to adapt to her new life on the farm. She does, however, also begin to advocate for eco-friendly actions. Lusa uses organic agricultural techniques in an effort to utilize fewer synthetic chemicals and more ecologically friendly farming methods. Her tale demonstrates the transition from conventional to sustainable farming, and her goal is to protect the health of the land and her family. The actual raising of cattle and crops is the focus of farming, a specific subdivision of agriculture. The fictional character Lusa Maluf Landowski, who marries a family of farmers, engages in subsistence farming. Her job as a laborer on the family farm is to harvest enough food to satisfy her family's needs. This strategy emphasizes the importance of self-sufficiency and is similar to traditional methods used to ensure local food security.

“Bugs I mean. I know you all laugh at me, but I'm so fond of bugs, that I can't stand to use a general pesticide like Sevin. I use different things. I use Bt on the tomatoes. 'B-T?' It's a germ, *Bacillus thuringiensis*. A bacterium that gives hornworms indigestion when they eat tomatoes but doesn't hurt bees or ladybugs. ... Well, bad indigestion – the hornworms die. It works on cabbage whoopers, too.” (*PS*, 378)

Lusa begins by saying that she loves bugs. This suggests that she appreciates insects and is not interested in injuring them needlessly. Lusa advises using organic pesticides, such as *Bacillus thuringiensis* (BT), only on tomato plants and solely in natural soil. Because ladybugs and bees are beneficial insects that are essential to plant pest management and pollination, *Bacillus thuringiensis* does not damage them. If this bacterium is effective against cabbage loopers, a different kind of pest may harm plants similar to cabbage. The feminine characters place a greater emphasis on ecologically friendly and organic pest management techniques that protect beneficial insects while controlling plant pests.

Having spent her whole life in the Appalachian Mountains, Nannie Rawley is older than most. She is acknowledged as Zebulon County's 'first certified organic grower.' She thus supports local marketing and is against the use of pesticides. Rawley demanded that there be a designated 'NO SPRAY ZONE.' 'Nice neighbors have good fences,' she said to him. Zebulon County's first certified organic gardener, Miss Rawley, is proud to announce this. She maintained her pastures unsprayed and was the sworn friend and protector of all creatures. Rawley and Garnett, the next-door neighbors, quarrel about the application of pesticides and herbicides. She seems to be an outspoken supporter of organic farming practices. Her organic orchard producers rely on beneficial pollinators, and she says that in order to

preserve commercial crops like tobacco, the local U.S. Agricultural Extension Service is pushing pesticides that are killing these bees and damaging other crops.



Figure 2: Invasive Species

The book *Prodigal Summer* by Barbara Kingsolver discusses the harm posed by invasive species to the stability of the ecosystem. Invasive insect pests pose serious risks to agricultural systems around the globe, resulting in large-scale financial losses and environmental disturbances. The book investigates how non-native animal and human species affect regional ecological and economic issues in southern Appalachia. The novel's protagonists list several invasive species that have had a disastrous impact on American farms and landscapes, including Chestnut Blight, kudzu, honeysuckle, and the Japanese beetle. These species lead to more consequences for biodiversity and the ecosystem. The story also emphasizes the risk of xenophobic attitudes against invasive species in general, even while the desire to eradicate such species is understandable. According to the book, invasive species have the potential to damage native species and disturb ecosystems. Kingsolver's depiction of how invasive species affect the ecosystem reflects her academic background in evolutionary biology. She thinks that defending native species and ecosystems against invading species is more important.

Kingsolver uses these people to explore how all living things are interdependent. The book presents sustainable agricultural practices as an essential component of this complex network. The choices that people make affect not just their own lives, but also the greater environment. As to the book, living in harmony with nature is essential for the long-term well-being of both humans and the planet. The importance of life cycles, variety, and rejuvenation are also emphasized in the book. The principles of sustainable agriculture, which include preventing resource degradation, fostering biodiversity, and collaborating with natural cycles, are comparable to these subjects.

Kingsolver highlights Food Security in the novel:

The idea of food security is complex, encompassing not only the quantity of food that is easily accessible but also its quality, safety, and the social and economic circumstances that enable people to get and buy the food they need. When everyone has physical, social, and financial access to enough safe, wholesome food to suit their dietary requirements and preferences for an active and healthy life, this is known as food security. It includes the availability of food as well as people's capacity to eat it without endangering their general health. These characters' interactions and experiences in *Prodigal Summer* led to a bigger exploration of food security and sustainability. The book demonstrates the interdependence of people and the environment, emphasizing the importance of sustainable land management and the ability to provide a person's basic nutritional requirements in the face of a changing global environment. The book takes on the subject of food security via the interactions of the diverse individuals with the land and their attempts to grow their own food. For example, the character Lusa Maluf Landowski, who marries a farming family, finds it difficult to maintain the farm while juggling worries about crop yields and financial security. Her story serves as a reminder that a key element of food security is ensuring consistent access to healthful meals. It is an essential aspect of human well-being that is influenced by a variety of factors, such as distribution networks, social safety nets, economic conditions, and agricultural output.

“Lusa toiled in the fields, her hands deep in the soil, determined to secure
a future where her family never went hungry. ... Lusa had been raised to
believe that the only way to farm was to use chemicals. But she was learning

that the earth was a living thing and that using chemicals was like trying to cure a sick person with poison” (PS, 35)

Food security is a multifaceted concept that considers the availability and accessibility of food as well as its quality, safety, and the social and economic conditions that allow people to purchase and get the food they need. Food security is the state in which all people have equitable access to adequate nutritious food that satisfies their dietary requirements and preferences for an active and healthy life on a physical, social, and economic level. It encompasses both the availability of food and people's ability to consume it without compromising their overall health. These people's interactions and experiences in *Prodigal Summer* add to a larger body of knowledge about food security and sustainability. Through its emphasis on sustainable land management and the capacity to provide a person's fundamental nutritional requirements in the midst of a changing global environment, the book illustrates the interconnectedness of people and the environment. Through the interactions of the many characters with the land and their efforts to raise their own food, the book addresses the issue of food security. To provide one example, the heroine Lusa Maluf Landowski struggles to manage the farm while balancing concerns about crop production and financial stability. She marries a farming family. Her experience serves as a reminder of the critical role that reliable access to wholesome food plays in ensuring food security. It is a crucial component of human well-being that is impacted by a number of variables, including agricultural productivity, social safety nets, distribution networks, and economic situations.

Garnett is an older man who values his independence. He hunts and gathers wild foods from the forest to demonstrate how resourceful it is to utilize local, organic food sources. His actions serve as a reminder that achieving food security may be accomplished via a range of tactics, including foraging and gathering from the surrounding region. Deanna's intimate connection to nature shapes her viewpoint on food security. She appreciates the natural order and is aware that maintaining ecosystems is essential to maintaining a stable environment. Her studies of flora and wildlife reflect her knowledge that disruptions to these systems may damage the food supply for humans and animals. Eddie Bondo's experience overcoming challenges in agriculture as a farmer sheds light on the complexities involved in guaranteeing food security. Two issues that threaten his crops and way of life are insect infestations and changing weather patterns. His struggles serve as a reminder of how one's ability to ensure a consistent supply of food may be impacted by external factors. How Nannie maintains her orchard contributes to the conversation about food security. Her dedication to the upkeep of the orchard and the cultivation of fruit trees serves as a reminder of the need for long-term planning and investments in food supply. The idea of long-term planning to ensure food availability is reflected in her work. Garnett Walker, a former agricultural extension agent who appears in *Prodigal Summer*, battles his prior involvement in encouraging the use of dangerous pesticides. He reconsiders after learning that these chemicals are harmful to both human health and the environment. An increasing knowledge of the damage that pesticides and herbicides inflict on the environment is reflected in this internal struggle. When essential, sustainable agriculture promotes the prudent use of pesticides and herbicides. In Integrated Pest Management (IPM) systems, natural predators and biological controls take precedence over chemical inputs. Farmers may support a healthier and more sustainable agricultural system by protecting pollinators, soil organisms, and water quality by abstaining from the use of hazardous pesticides.

Resisting Monoculture and Conventional Farming with Biodiversity:

A rising movement in agriculture is favoring biodiversity over monoculture and conventional agricultural practices. Monoculture farming is the practice of cultivating just one crop at a time in a specific field. Deanna Wolfe, a wildlife scientist, dedicates her life throughout the novel to halting the elimination of coyotes. She is aware that these predators keep the ecology in balance by, among other things, eliminating pests that may ruin crops. This focus on biodiversity protection highlights how crucial it is to shift agricultural techniques away from monoculture, which includes growing large swaths of a single crop, and toward more diverse and sustainable farming methods. Kingsolver's characters subtly promote many agroforestry, crop rotation, and companion planting practices throughout the novel. By using these methods, the need for synthetic pesticides and fertilizers is decreased while soil health is increased. Farmers may increase sustainable food production and increase their resistance to pests and illnesses by using such strategies.

3. Results and Discussion

The female characters in the novel, Deanna, Lusa, and Nannie resist modern agricultural practices and urge towards sustainable agricultural practices and food security. Each character had a different challenge in their lives and strongly navigated it, empowering themselves and resisting their struggles with their strength. They encouraged each other, to move forward and attain their goal is to protecting

the land and natural resources from inorganic farming practices such as fertilizers, herbicides, insecticides, and other chemical substances to kill weeds, and pests and increase crop yields. They ignore modern agricultural systems like monoculture, conventional farming, and genetically modified organisms (GMOs). This kind of system reaches the cause and effect of the ecosystem leading to the loss of biodiversity, soil infertility, and more impact on the environment.

4. Conclusion

Prodigal Summer illustrates several facets of food security via the experiences of these people, such as the difficulties of farming, the significance of comprehending regional ecosystems, the function of self-sufficiency, and the requirement to guarantee steady access to nutritional food sources. The book emphasizes the relationship between people and the environment by showing how a varied range of food production methods and sustainable practices lead to a more stable and reliable food system. Currently, agricultural practices that increase food production are being pursued by people. Therefore, it is preferable to pursue a sustainable agricultural farming system, which improves everyone's health by providing them with nutrients and elevating their energy levels. Our lives will be prolonged and there will be no need for medication or illness-related interventions. In particular, Lusa and Deanna treat all insects, pests, crops, green seeds, and trees as pets and do not resort to using chemicals to eradicate them, but other farmers, such as Garnett and Widener, are attempting to wipe out the species.

Barbara Kingsolver examines a variety of sustainable farming methods in *Prodigal Summer* via the experiences of the characters and their relationships with the environment. The book explores conventional as well as sustainable agricultural practices, emphasizing the difficulties and complexities involved in land management. Food security and sustainable agriculture are expertly woven into a compelling story by Kingsolver. The novel emphasizes the need for local food systems and ecological care in providing long-term nourishment via the lives of characters like Deanna and Lusa. Sustainable agriculture methods were used as a weapon by the majority of the female characters instead of contemporary technology. As the world battles with pressing environmental challenges and the need for sustainable food systems, the novel's themes become even more relevant. Kingsolver's writings compel us to consider the decisions we make regarding our relationship with the land and the effects those decisions have on the health of the earth and its people. Barbara Kingsolver therefore contributes to our awareness of sustainability by highlighting the issue and guaranteeing the preservation of the ecological equilibrium in her narrative. The goal of these conservation efforts is to guarantee that the natural resources that are currently available to future generations can be used to suitably meet their needs.

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